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Preservice Physical Educators' Stress and Instructional Effectiveness

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Preservice Physical Educators' Stress and Instructional Effectiveness

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Dissertation submitted to the
College of Physical Activity and Sport Sciences
West Virginia University
In partial fulfillment of the requirements
For the degree of

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Physical Education Teacher Education

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ABSTRACT

Preservice Physical Educators' Stress and Instructional Effectiveness

Jingyang Huang

The primary purpose of this study was to determine the relationship between preservice physical educators' stress and their instructional effectiveness. The study sample included 25 preservice physical educators in the Middle School Block and Secondary School Block in a Physical Education Teacher Education program located in the mid-Atlantic area of the United States. A demographic questionnaire, the Teacher Stress Scale, the West Virginia University Teaching Evaluation System, and interview questions were administered during preservice physical educators' practice teaching period. The results indicated that preservice physical educators' stress was negatively correlated with instructional effectiveness. Curriculum model and noise were reported as new factors that affected preservice physical educators' stress and instructional effectiveness. In addition, the relationships between other demographic variables (e.g., block levels, gender, familiarity with a specific sport, confidence, readiness, and self-efficacy) and preservice physical educators' stress were unveiled. Implications for PETE programs were also provided.

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Chapter 1

Introduction

Stress is defined as an imbalance between the demands of the situation and the resources available to assist individuals to cope with these demands (McCarthy, Lambert, Donnell, & Melendres, 2009). Stress may have either positive or negative effects on performance (Schwartz, 2012). According to Schwartz (2012), positive stress may potentially increase our activity and productivity, while negative stress may adversely affect individuals' health as well as performance.

Occupational stress has been described as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker ("National Institute for Occupational Safety and Health [NIOSH]", n. d.). The prevalence of occupational stress and the pursuit of better performance in a wide range of professions have attracted much attention (Jing, 2008). Multiple studies have been conducted to investigate the relationship between occupational stress and working performance. The results varied with some research indicating that stress was negatively correlated with performance (Chen, 2009; Gilboa, Shirom, Fried, & Cooper, 2008; Hewitt & Stephenson, 2011; Jamal, 2007; Wu, 2011), while other studies found the opposite (Can, 2011; Chang & Chang, 2007; Perkins & Corr, 2004).

Within the context of occupational stress, teaching has been reported as a stressful occupation (Kyriacou, 2001). Russell (2000) indicated that teachers have surfaced at the start of the new millennium as the most afflicted with rising stress. Multiple studies have been conducted to examine the sources of teachers' stress, and research has indicated that the most

frequently reported stressors were: role-related stress, task-based stress, and teaching event stress (Pettegrew & Wolf, 1982). Research has also shown that high levels of stress can be harmful to teachers and may negatively affect teaching effectiveness, personal lives, and students (Adams, 1999). Researchers have been aware that teaching can be a stressful experience and have been interested in describing, measuring anxiety in teaching, with a view to assist teachers cope with stress and improve their teaching performance (Jamal, 2007).

Research has also indicated that preservice teachers might experience high stress during practice teaching (Chan, 2003; Spangler, 2006). Cameron, Lester, and David (2012) suggested preservice teachers' stress mainly comes from their concern for coursework, multiple roles and duties, and when being constantly supervised by cooperating teachers and university supervisors. A great deal of research has been conducted to examine why preservice teachers experienced stress during the practice teaching. However, the relationship between preservice teachers' stress and their teaching effectiveness remains unexamined.

Although there has been a proliferation of literature on stress among teachers, few studies have been conducted regarding physical education teachers, and the studies that do exist have mainly investigated the sources of stress among physical education teachers. With regard to stress and physical education teachers' teaching effectiveness, few studies have been found to examine the relationship between stress and physical education teaching effectiveness.

No studies have been found that examine the relationship between stress and teaching effectiveness among preservice physical education teachers. This study examined if stress negatively or positively impacted preservice physical education teachers' teaching

effectiveness, thus providing numerous implications for the Physical Education Teacher Education (PETE) programs.

Statement of the Problem

Therefore, the purpose of the current study was to investigate the relationship between preservice physical education teachers' stress and their instructional effectiveness.

Scope of the Study

The study examined preservice physical educators' stress during practice teaching in a PETE program located in the mid-Atlantic area of the United States. The participants were selected from two professional blocks (Middle School Block, Secondary School Block). Professional blocks represent specific groups of preservice teachers in a PETE program based on education levels, and they are hierarchically arranged to prepare students to become effective physical education teachers.

Research Questions

- 1) What was the relationship between preservice physical education teachers' stress and their instructional effectiveness?
- 2) Did preservice physical education teachers from different PETE professional blocks experience the same stress levels during practice teaching?
- 3) What were the relationships between selected demographic variables and preservice physical education teachers' stress?

Limitations of the Study

- 1) This study utilized preservice physical education teachers from a single university.

Therefore, generalizations to other institutions may be limited.

- 2) Preservice teachers from secondary school block and middle school block did not teach in secondary schools and middle schools in their practice teaching. Instead, they taught physical education classes at the university level. Therefore, participants may report different stress levels due to the different teaching contexts.
- 3) Participants may not have expressed their real stress levels after practice teaching. Therefore, possible social desirability effects with regard to the completion of the stress inventories may impact the accuracy when interpreting the findings.

Definition of Terms

The following terms have been selected in order to clarify all misconceptions about their usage. The terms will be defined as follows:

Stressor - An activity, event, or another stimulus that causes stress.

Preservice physical educator - Individual who has been accepted into a physical education program but has not yet completed training to be a teacher. They need to complete a period of pedagogical classes and practice teaching, and then engage in an internship or student teaching experience, working alongside mentors or master teachers before being licensed as a professional physical educator.

Professional blocks - Specific groups of preservice teachers in a PETE program based on education levels, and they are hierarchically arranged to prepare students in becoming effective physical education teachers.

University supervisors – They consist of doctoral students and faculty members from the PETE program; they are assigned to supervise preservice physical educators' practice teaching each semester.

Motor appropriate – This behavior can be defined as a student is engaged in a subject matter motor activity in such a way as to produce a high degree of success, and it estimates student learning from the psychomotor aspect.

Cognitive – This behavior is defined as the student is appropriately involved in a cognitive, subject matter task, and it estimates student learning from the cognitive aspect.

Significance of the Study

No studies investigated the relationship between physical education preservice teachers' stress and their teaching performance. This study examined if stress is related to preservice physical education teachers' effectiveness, thus providing implications for PETE programs. This study also utilized objective measurement to evaluate preservice physical educators' stress, and examined how stress would impact their teaching effectiveness.

Chapter 2

Literature Review

The purpose of this chapter was to comprehensively describe the literature related to stress in an attempt to justify the need to complete this study. To accomplish this purpose, the chapter was divided into seven sections. Section one described stress. Section two described occupational stress. Section three described occupational stress among teachers. Section four described occupational stress among preservice teachers. Section five described occupational stress among physical education teachers. Section six described preservice physical education teachers' stress. Section seven discussed assessing instructional effectiveness.

Stress

Stress is a normal part of life. Researchers have developed definitions of stress, and many theoretical models that have been created to explain the phenomenon of stress. Although there is a debate concerning the effects of stress, considerable research has documented that stress, especially prolonged stress, can negatively impact individuals' health and performance.

The study of stress stems from early work by Selye (1956), who described stress as "the non-specific response of the body to any demand made on it to adapt" (p.32). Stress was also described as the consequence of the failure of an organism to respond appropriately to emotional or physical threats, whether actual or imagined (Gold, 1985). Blaug, Kenyon, and Lekhi (2007) claimed that stress was "a personal experience caused by pressure or demands on an individual, and impacts upon the individual's ability to cope or rather, his/her perception of that ability" (p.14). This definition is similar with McCarthy et al.'s (2009), who defined stress as an imbalance between the demands of the situation and the resources

(i.e., knowledge, skills, and emotional control) available to help individuals cope with those demands. According to Australian Psychological Society (2012), stress can be described as “a feeling of being overloaded, tense and worried” (p.1). Stravroula, Amanda, and Tom (2003) sought to distinguish the definition of pressure and stress. According to Stravroula et al. (2003), pressure potentially keeps individuals alert, motivated, and continue to learn. However, pressure could eventually lead to stress if individuals are exposed to excessive or unmanageable pressure.

Stress is a complicated phenomenon. According to Hansen and Sullivan (2003), there are three major components combined to produce a distressing experience. First is the stressor, which can be defined as an event or series of events that happen in the environment. For instance, heavy workload, noise, or disruptive students, are stressors the teacher may encounter. The second component of stress involves the psychological and physiological effects of a stressor on the person. These effects are what people usually mean when they use the term “stress.” For example, if a teacher's muscles become tense when he or she is told the workload will increase next semester, then the physical and psychological reactions to this announcement are "strain." The third component is appraisal, which influences how a person reacts to a stressor. According to Hansen and Sullivan (2003), appraisal involves judgments about the degree of threat stressor presents and an evaluation of whether sufficient resources are available for coping with the stressor. For example, a veteran teacher may feel less stress than novice teachers when dealing with disruptive students in the class, because veteran teachers have more experience to cope with student problems and have a variety of

management strategies available. Generally speaking, how a person interprets an event can influence how stressful it is.

There are four popular models that have been used to explain the stress phenomenon. The primary stress model is the demand-control model put forth by Karasek (1979). He viewed occupational stress as arising from the tension between the demands an occupational environment imposes on an individual and the level of perceived control that person has over the environment. In general, the model posits that low control and high demand may lead to negative health outcomes (Pasca & Wagner, 2011). However, this model was subsequently updated by Johnson and Hall (1988) to incorporate an element of social support. The newer model postulates that high demand, low control, and low social support are the factors associated with illness in the workplace (Pasca & Wagner, 2011).

Siegrist et al. (2004) suggested the effort-reward model to define work-related stress. This model is associated with a balance between the effort that the individual expends and the level of reward resulting from that effort. This model emphasizes that the work role has the potential to provide positive self-esteem and increased self-efficacy if the individual is adequately rewarded (Pasca & Wagner, 2011).

The transactional model, suggested by Lazarus (1991), is comprised of two processes (i.e., cognitive appraisal and coping) that mediate between environmental stressors and resulting responses. An event or a series of events activates the cognitive appraisal process, which consists of an evaluation of whether the event is a threat or whether it can be dismissed as a benign challenge. The secondary appraisal process will not be initiated until an individual perceives a threatening event. Individuals will evaluate their available resources

for coping with the stressors. In general, the transactional model suggests that an imbalance of greater environmental demands than resources to cope with these demands produces stress (Meurs & Perrewe, 2011).

Stress is a normal reaction for everyone. In fact, everyone feels stressed from time to time. Therefore, it is essential for individuals to equip themselves with basic knowledge about stress to avoid more serious health effects. However, stress sometimes is perceived as a positive thing if individuals treat stress as a challenge or something that they can strive to overcome. According to Clinic Community Health Center [KCHC] (2010), "positive stress" motivates individuals and assists individuals to focus, and will lead to improved performance. For example, if one receives a promotion at work, he or she may experience temporary stress, but ultimately, the stress will lead to improved performance. Other positive stressors may include buying a home, having a child, and retiring. Updegraff and Taylor (2000) believed that benefits of post-traumatic stress could be displayed in three areas: self-concept, relationship with social networks, and personal growth and life priorities. Self-concept refers to individuals belief that they have the abilities to deal with the devastating aspects of life. With regard to the aspect of the relationship with social networks, Updegraff and Taylor (2000) considered that individuals' social ties can be strengthened if they perceive that having a stable social network serves as a way to deal with threats. In addition, reordering life priorities is also considered as an aspect that leads to positive changes. However, Updegraff and Taylor (2000) argued that those positive changes from stress heavily rely on participants' self-reported data, and future research is needed to explore the relationship between positive changes that result from stress and tangible outcomes.

Although not all the stress is negative, certain types of stress symptoms, especially chronic stress, may deter individuals' digestive, excretory, and reproductive systems from working normally (National Institute of Mental Health [NIMH], 2012). Health problem may deteriorate if source of stress is constantly exposed or the response to stress continues after the danger has subsided (NIMH, 2012). According to NIMH (2012), there are at least three types of stress that may lead to physical and mental health problems: 1) routine stress related to the pressures from academic performance, work, or other daily responsibilities. 2) Stress triggered by negative events, such as a car accident, divorce, or illness. 3) Traumatic stress is experienced by individuals who have gone through a disaster, such as war, natural disaster, etc.

Most of research indicates that stress is a negative symptom that could impact individuals in areas of cognitive, mood, and behavior (KCHC, 2010). Although stress is a highly subjective phenomenon that different people may respond to differently, stress can have effects on various systems, organs, and tissues in the body (KCHC, 2010). For example, high stress may lead to hair loss, trigger a series of mental and emotional problems such as headache, anxiety, and depression, and affect the function of lungs (KCHC, 2010). In addition, high stress levels have also been found to be associated with Cardiovascular disease, various muscular twitches, and nervous tics (KCHC, 2010). According to The Health and Safety Executive (THSE) in United Kingdom (2010), it is estimated that 1.3 million people reported that they suffered work-related illness. Among those people, 435,000 reported that they suffered stress, depression, and anxiety in the working context (THSE, 2010). In addition, excessive stress also has been found associated with burnout – a set of symptoms

that an individual may develop during prolonged exposure to high levels of stress (Maslach, Schaufeli, & Leiter, 2001).

Herbert and Cohen (1994) utilized a pathway model to illustrate the relationship between stress and illness. Herbert and Cohen believed that stress results in negative emotional states (e.g., anxiety and depression), which lead to the changes in physiological responses and behavioral responses, and those changes are the main factors contributing to illness. Herbert and Cohen (1994) also pointed out that more research needs to be conducted to investigate if illness leads to stress. Staal (2004) used different models to explain how stress affects individuals' attentional process, memory, motor performance, and decision making. In Staal's study (2004), psychological stress was considered as a main factor that leads to reduced focus on tasks and information. Stress was also found to be related to impaired working memory and deterioration of motor performance. Consequently, stress will negatively affect individuals' ability of judgment and decision making. Scott (2011) argued that individuals who suffer from stress may have initial mild symptoms such as chronic headaches or increased susceptibility to cold. Scott further explained that stress could lead to serious health problems if stressors are not eliminated. The serious health problems include depression, diabetes, hair loss, heart disease, hyperthyroidism, obesity, sexual dysfunction, tooth and gum disease, and ulcers (Scott, 2011). Negative outcomes from stress also have been reported by Despues (1999), Vanltanllie (2002), and Little (2012).

In general, stress is perceived as an imbalance between the demands of the environment and the individual's capacity to deal with these demands. Although positive outcomes and negative outcomes related to stress have been reported, most studies have suggested that

stress, especially prolonged stress, may negatively affect an individual's physical and psychological health, and ultimately lead to illness.

Occupational Stress

Occupational stress can be described as the stress occurring in the workplace. The data from different work organizations has confirmed that occupational stress is associated with increased work expenditure. Research has also examined the relationship between stress and occupational performance. Results varied with some research indicating that stress was negatively correlated with occupational performance, while other studies supporting the opposite conclusion.

Occupational stress is a term used to define ongoing stress associated with the workplace. Occupational stress has been described as an incompatibility between the individual and his or her work environment (Humphrey, 1998). According to NIOSH, occupational stress can be defined as “the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker” (p.6). When a worker perceives an imbalance between demands and environmental or personal resources, this can lead to different possible reactions. These reactions include physiological responses (e.g., clammy hands, increased heart rate), emotional responses (e.g., feeling exhausted or nervous), cognitive responses (e.g., reduced attention or perception), and behavioral reactions (e.g., repeatedly making a mistake, aggression) (European Foundation for the Improvement of Living and Working Conditions, 2007). According to Stravroula et al. (2003), work-related stress also can be defined as the responses to presented work demands and pressures that are not matched to individuals' knowledge and abilities.

The escalating costs associated with workplace stress indicate an international trend among industrial countries (Karasek & Theorell, 1990). For instance, in 2004, the American Institute of Stress reported that the cost of workplace stress in healthcare, missed work, and stress-reduction was 300 billion US dollars annually, which included “accidents, absenteeism, employee turnover, diminished productivity, direct medical, legal, and insurance costs, and worker compensation awards”(American Institute of Stress, 2004, para. 2).

In 1990, the cost of injury to staff by work stress in the United States was 4 billion dollars (Dollard, 1996). However, in 2000, it was estimated that the cost of stress-related absences per year was 5.2 billion dollars, with 91 million pounds attributed to working days lost each year due to mental health-related illnesses. The Canadian Compensation Board (1996) found that 60 percent of Canadian workers felt negative stress in the workplace, and 80 percent of this group stated that stress was adversely affecting their job performance and health. Workers between the ages of 25 and 44 years, as well as managerial and professional employees were identified as the groups that tended to be more likely to avoid stressful events.

According to the American Psychological Association (2009), 69 percent of employees reported that work was a significant source of stress, and 41 percent of employees reported that they typically felt tense or stressed out during the workday. Also, 51 percent of employees reported that they were less productive at work as a result of stress. In 2001, the median number of days away from work as a result of anxiety, stress, and related disorders was 25, substantially greater than the median of 6 for all nonfatal injury and illness cases (Bureau of Labor Statistics, 2001). In a study of a large, multi-employer, multi-site employee

population, healthcare expenditures for employees with high levels of stress were 46% higher than those for employees who did not have high levels of stress (Goetzel et al., 1998).

Multiple studies have examined the impact of stress on occupational performance. A study by Mojinyinola (2008) found that job stress is negatively associated with increased physical and mental symptoms experienced by nurses. Mojinyinola (2008) concluded that nurses would likely not offer humane treatment to their patients under the stressful conditions.

A cross-culture study was conducted by Jamal (2007), who examined the relationship between stress and job performance among employees in Malaysia and Pakistan. Five tools were used in Jamal's study to measure stress and job performance. A 13-item Job Stress Scale and a 15-item Job Stressor Scale were used to measure participants' stress levels. Job performance data were obtained by checking employees' work habits regarding absenteeism and turnover intention. The results indicated that job stress was negatively correlated with job performance; high stress was related to low performance and vice versa.

Chen (2009) conducted a study to examine stress and job performance among police officers in Taiwan. The results indicated that there was a significant and negative relationship between stress and job performance. In addition, the results showed that police officers aged between 31-40 and with 11-20 years of service suffered the most stress.

Role conflict and role ambiguity are two variables considered to impact job performance (Chang & Chang, 2007). According to Chang and Chang (2007), role conflict is the "discord between the expectations of other parties and the employee's perception that they can not satisfy these demands" (p.213), while role ambiguity occurs "when employees do not have

the necessary information to perform the job" (p.213). Chang and Chang sought to examine how role conflict and role ambiguity impact job performance among salespeople in travel agencies. The results indicated that role ambiguity was negatively correlated with job performance, whereas role conflict was positively correlated with job performance. These conclusions are slightly different from Gilboa et al.'s (2008) findings. In Gilboa et al.'s study (2008), the stressors included role ambiguity, role conflict, role overload, job insecurity, work-family conflict, environmental uncertainty, and situational constraints. Gilboa et al. (2008) found that job performance is negatively correlated with each stressor. In addition, role ambiguity and situational constraints were most strongly and negatively related to performance.

Although most studies have suggested that stress is negatively correlated with occupational performance (Chang & Chang, 2007; Chen, 2009; Gobia et al., 2008; Jacob, Tytherleigh, Webb, & Copper, 2007; Jamal, 2007; Mojinyinola, 2008), researchers argued that occupational stress and working performance are not directly linked. In other words, other variables may play important roles in mediating this relationship. For instance, Wu (2011) tried to examine the role of emotional intelligence in the relationship between job stress and job performance. Emotional intelligence is the ability to identify, assess, and control the emotions of oneself, of others, and of groups (Wu, 2011). Although the results showed a negative correlation between stress and job performance, emotional intelligence was found to be positively correlated with job performance. Wu further explained that highly emotionally intelligent employees tended to cope with stress more efficiently than low emotionally intelligent employees, which led to this positive relationship.

Jacob et al. (2007) found that physical health, psychological well-being, and organizational commitment are mediators in determining the negative relationship between stress and working performance. A study by Perkins and Corr (2004) also found that cognitive ability plays an important role in the stress-performance relationship.

Interestingly, stress may positively contribute to working performance. Perkins and Corr (2004) conducted a study to examine if worry can positively impact workplace performance. In Perkins and Corr's study, 68 managers from a global securities company were asked to complete a series of questionnaires concerning their personality and work performance. A 30-item Occupational Personality Questionnaire (OPQ) was utilized to evaluate participants' personality in the occupational domain. In addition, three questionnaires were used to assess managers' management competency and cognitive ability. The results indicated that worry was positively correlated with managerial performance for those managers with high cognitive ability. On the other hand, worry was found negatively related to performance among managers with relatively low cognitive ability scores. Perkins and Corr (2004) hypothesized that worry may facilitate managers in planning and regulating behavior, and ultimately led to improved job performance.

In summary, the data from multiple resources have established that the cost associated with occupational stress is escalating. A great volume of research has examined the relationship between stress and performance. Research has shown that a variety of variables may mediate this relationship. Future research is needed to examine if certain demographic variables (e.g., age, gender, and working experience) may impact the relationship between stress and performance.

Occupational Stress among Teachers

Teacher stress has been a topic of much interest of late. Studies concerning teacher stress have mainly investigated the sources of stress in the educational workplace and the relationship between particular demographic variables and teacher stress. Studies have examined the relationship between stress and teaching effectiveness, and these results are discussed.

Teaching has always been viewed to be a very secure job, and yet increasingly this is not necessarily the case (Hanif, 2004). According to Kyriacou (2001), teacher stress is defined as "the experience by a teacher of unpleasant, negative emotions, such as anger, tension, frustration or depression, resulting from some aspect of their work as a teacher" (p.28). Research has shown that teachers have surfaced at the start of the new millennium as the most afflicted with rising stress (Russell, 2000). International surveys conducted by International Labor Organization United Nations Educational Scientific and Cultural Organization Joint Committee revealed that 25-33% of teachers suffer significantly from stress (MacDonald, 1999).

A number of studies have been conducted to investigate the factors that contribute to stress among teachers. Eckersley (1999) conducted a qualitative study to determine the sources of stress by interviewing three retired teachers. Four major sources emerged as predictors of teacher stress: increased student discipline problem, a sense of powerlessness, the influence of declining social values on the school setting, and the expanding role of teacher. Eckersley concluded that the support of the administration is desperately needed to assist teachers to mitigate potentially high stress, especially for the beginning teachers.

Greiner and Smith (2009) sought to examine if the variables such as standardized reading proficiency scores, grade point average, gender, and ethnicity impact teacher attrition. The results indicated that selected variables were not correlated with teacher attrition. However, Greiner and Smith (2009) concluded that external factors such as teacher education training and teachers' confidence in teaching may impact teachers' attrition rate.

Research suggests that teachers perceive different stressors due to different school environments. Shernoff, Mehta, Atkins, Torf, and Spencer (2011) surveyed 14 urban teachers from high-poverty schools in a study designed to examine teachers' perceptions of stressors. They found that the major sources of stress that emerged for teachers were: work overload, role overload, student disruptive behaviors, accountability pressures, and lack of resources. Additionally, the sources of stress relating to job characteristics (e.g., dealing with behavior problems) were more prominent than individual factors (e.g., grade level taught). Williams and Gersch (2004) found that the stressors for mainstream school teachers included noisy students, student poor attitude toward work, and lack of time to spend with individual student, while teachers in special schools reported that lack of resource is the main stressor.

Research has also shown that different stressors were reported by teachers in universities, middle schools, secondary schools, elementary schools, and kindergarten. Abbas, Roger and Asadullah (2012) conducted a study to investigate the stressors for university faculty in Pakistan. The results showed that role ambiguity is the most salient factor that leads to university faculty's stress and burnout. Other frequently reported stressors included role stagnation, inter-role distance, self-role distance, resource inadequacy, role conflict and role overload. Grant (1991) found the stressors for faculty in community colleges included

numeracy/literacy skills, indoor air quality, lack of motivation from students, available supplies and resources, and students' weak mathematic/language skills.

Ravichandran and Rajendran (2007) conducted a study involving 200 higher secondary teachers to examine the sources of stress. A 65-item Teacher's Stress Inventory was administered to assess teachers' perception of stress from a variety of sources. According to Ravichandran and Rajendran, variables such as teachers' qualification, teaching experience, and handling different classes were found to be significantly correlated with personal stress levels. A study by Fisher (2011) found that teaching experience coupled with burnout are significant predictors of stress among secondary school teachers. Chan, Chen, and Chong (2010) conducted a study involving 1710 primary and secondary school teachers, and found that the heavy workload, time pressure, education reforms, external school review, pursuing further education, and managing students' behavior were the most frequently reported stressors.

Olaitan, Oyerinde, Objyemi, and Kayode (2010) examined primary school teachers' job stressors in Nigeria. The results suggested that major sources of stress were colleagues, curriculum, grading, parents, pupils, school authority, society, supervision, teaching environment, and income. Sprenger (2011) used a mixed-method approach to investigate the stressors among primary school teachers and their perceptions of stressors. The results indicated that the most salient factor contributing to primary school teachers' stress is unrealistic expectations. According to the survey respondents, teachers were always working under pressure, feeling underappreciated, and fulfilling multiple roles. The second leading stressor among primary school teachers was documentation. Sprenger (2011) found that

teachers constantly encountered heavy workload and increased individualized attention. The other stressor reported frequently by teachers was administration issues including a lack of consistency by school administration and implementing new procedures and schedules (Sprenger, 2011).

Kelly and Berthelsen (1995) conducted a qualitative study of preschool teachers in Australia to determine stressors. Eight teachers were asked to keep a reflective journal recording and describing their sources of stress during two week periods. Several sources emerged as predictors of stress: time pressure, children's needs (e.g., communicating with individual children, taking care of sick children, etc.), non-teaching tasks (e.g., the multiple roles that teachers need to fulfill in the school), maintaining early childhood philosophy and practice (e.g., conflict between expectations of the program and implementing curricula), personal needs (e.g., the excessive demands from school may jeopardize teachers personal needs), issues with parents of the children (e.g., teachers need to extend their responsibilities by caring, monitoring, nursing, and providing attention to children), interpersonal relationships (teachers need to maintain positive interpersonal environment due to the nature of preschool), and attitudes and perceptions about early childhood programs. A study by Tsai, Fung and Chow (2006) found the stressors for kindergarten teachers in Hongkong included two aspects: work-related stressors and time management. According to Tsai et al. (2006), work-related stressors include "feeling of having too little time to prepare, having too much work, pace of school day being too fast, class size too big, personal priorities being shortchanged, and having too much administrative paperwork" (p.368), and time

management includes “having to do more than one thing at a time, being rushed in speech, and not having enough time to get things done” (p.368).

Many studies have investigated the association between demographic variables and teachers’ stress. For instance, age can be a variable related to teachers’ stress. Fisher (2011) conducted a study involving approximately 400 secondary teachers to determine the factors that potentially contributed to stress, and found that age was not correlated with stress among secondary school teachers. However, Williams and Gersch (2004) found that age was positively correlated with stress among teachers in mainstream schools and special schools. Interestingly, a study by Abirami (2012) found that college teachers less than 25 years old experienced the highest level of stress.

Gender, on the other hand, has been found to be associated with teachers’ stress. Ravichandran and Rajendran (2007) found that female teachers experienced higher levels of stress than male teachers. Abirami (2012) also found that female teachers are more vulnerable to stress than male teachers. Greiner and Smith (2009) confirmed this conclusion and suggested that female teachers had higher attrition rates than male teachers due to excessive stress levels. However, a study by Aftab and Khatoon (2012) found that male secondary school teachers experienced higher levels of stress than their female counterparts in India. Surprisingly, some studies reported that gender is not a variable that is correlated with teachers’ stress (Fisher, 2011; Wang & Zhang, 2007).

Teaching experience was also found to be a factor contributing to teachers’ stress. Fisher (2011) found that teaching experience was negatively related to teacher stress. In other words, the more teaching experience that a teacher possessed, the lower the level of stress he/she

experienced. Wang and Zhang (2007) and Abirami (2012) also reported that teachers who worked less than 6 years experienced the highest levels of stress. Wang and Zhang (2007) explained that novice teachers experienced high levels of stress due to the multiple challenges they encountered to adapt to the work environment, and middle-age teachers needed to reorient to deal with the a variety of stressors that emerged in schools. Veteran teachers experienced less stress due to their accumulated teaching experience. However, Aftab and Khatoon (2012) found teaching experience was positively correlated with teacher stress in their study. They speculated that teachers become more exhausted and worn out as teaching experience increased, which makes teachers unable to cope with issues in educational settings. However, Harlow (2008) surveyed 115 teachers in Canada and found that teaching experience was not significantly correlated with teacher stress.

The grades that teachers taught may also impact teachers' stress. Wang and Zhang (2007) found that elementary school teachers experienced less stress than secondary school teachers due to the different school's expectations, student management techniques, teaching styles, and increased number of students admitted by colleges from secondary middle schools. However, Harlow (2008), Aftab and Khatoon (2012) found that grade level taught by teachers was not related to stress.

Different teaching contexts were also found to be associated with teacher stress. Shernoff et al. (2011) surveyed 14 urban teachers from high-poverty schools and found that they suffered extremely high levels of stress due to an imbalance between the high demands and limited available resources. Abirami (2012) reported that teachers in city schools had higher stress levels than teachers in rural schools. Williams and Gersch (2004) conducted a study to

examine if teachers from mainstream schools experience more stress than teachers in special schools. Surprisingly, the results indicated that no difference was found in the levels of stress experienced by mainstream and special school teachers.

Chang (2009) stated that the sources of teacher stress were associated with individual factors, organizational factors, and transactional factors. According to Chang (2009), individual factors include demographic variables or personality variables. Organizational factors include institutional and job characteristics, (e.g., inappropriate work demands, socioeconomic status of schools, administrative support) (Chang, 2009). Transactional factors include interactions of individual factors with organizational factors, such as an employee's perceptions of leadership style, teachers' attribution of student misbehaviors, and teachers' perceptions of exchange of investments and outcomes (Chang, 2009).

Pettegrew and Wolf (1982) created an instrument to measure teachers' stress. According to Pettegrew and Wolf (1982), three main sources emerged for teachers' stress: role-related stress, task-based stress, and teaching events stress. Thirteen items were selected to construct teacher's stress scale: role ambiguity, role conflict, role overload, role preparedness, nonparticipation, school stress, management style, job satisfaction, life satisfaction, supervisory support, peer support, task stress, and illness symptoms. Role overload denotes "the absence of sufficient resources to perform one's role adequately" (p.379). Role preparedness represents "stress due to feeling a lack of competency or preparation to perform a given role" (p.379). Nonparticipation concerns "not being directly involved in the decision-making process on issues that specifically affect one's work" (p.379). Pettegrew and Wolf (1982) reported a good internal consistency estimate by utilizing Cronbach's alpha. The

structural reliability and construct validity of this instrument was determined by three-dimensional smallest space analyses. Its predictive validity was also determined by a stepwise discriminant analysis, and all the correlations were significant with p value smaller than .05.

Multiple studies utilized the instrument developed by Pettegrew and Wolf to measure stress among different groups. For example, Adams (1999) found that illness symptoms, self-esteem, and role preparedness are the three most important variables in explaining vocational teacher stress. A study by Hopkins, Hoffman, and Moss (1997) found that the level of role ambiguity, role overload, and role conflict decreased as preservice teachers experienced student teaching practice. Interestingly, Paese and Zinkgraf (1991) uncovered the same findings with Hopkins et al.'s study (1997) when they investigated preservice physical education teachers' stress.

Many studies have investigated the association between the teacher stress and teaching performance. Jing (2008) investigated the faculty's job stress and performance of higher education in China, and found that work-context stress significantly affects teaching effectiveness. Sultana, Bano, Bano, and Shafa (2012) found that stress impacts teachers in the areas of personal life and professional life. Regarding the personal life, stress leads to increased anxiety, lowered confidence, and reduced self-respect. In terms of professional life, stress will negatively impact communication skill, teaching performance, time management, and focus. Tahir (2011) also found that teaching stress may influence the academic performance of college teachers. Blase (1986) claimed that prolonged teacher stress will

negatively affect the teacher's instructional ability. A study by Thakur (2012) found that teacher burnout is negatively correlated with teaching effectiveness.

Khan, Shah, Khan, and Gul (2012) investigated the relationship between teachers' stress and teaching performance, and they found that teachers' stress is associated with decreased levels of job satisfaction and motivation, increased teachers' absenteeism, and even violence during work. In addition, Kahn et al. (2012) concluded that teachers who suffered stress symptoms may not deliver quality instruction to students, which resulted in decreased teaching performance and students' satisfaction levels.

Shernoff et al. (2011) used qualitative methods to investigate occupational stressors and the consequence of stress experienced by 14 urban teachers from three high-poverty schools. Shernoff et al. (2011) found that "limited resources and supports" is the primary source that leads to teachers' stress. Other stressors reported by teachers included excessive workload, school-level disorganization, managing disruptive behavior, accountability policies, teaching large heterogeneous groups of learners, urban poverty, role overload, and teacher preparation. The findings also indicated that occupational stress impacted teachers' physical health, personal relationships, work-performance, and emotional well-being.

Hanif (2004) investigated the relationships among teachers' stress, teachers' job performance and self-efficacy of women secondary school teachers in Pakistan. The Teacher Stress Inventory (TSI) and the Teacher Job Performance Scale (TJPS) were utilized to examine teachers' stress and job performance. TSI was comprised of 49 items pertaining to 10 different subscales. Five of those subscales included stressors such as time management, work-related stressors, professional distress, discipline and motivation, and professional

investment; the other five subscales consisted of manifestations of stress including emotional, fatigue, cardiovascular, gastronomical, and behavioral. A 25-item TJPS encompassed four categories of teachers' job performance: teaching skills, management skills, discipline and regularity, and interpersonal skills. Each item from TSL and TJPS has five different numeric scales; final scores were calculated to determine the levels of stress and teaching performance. The results showed that all the four subscales of TJPS were negatively correlated with all the scales of TSI, which indicated that teacher stress was negatively correlated with teaching performance. Interestingly, the results also indicated that variables of teaching experience and age were positively correlated with teacher stress.

However, a study by Kauts and Mittu (2011) yielded a different conclusion. They conducted a study to examine the relationship between stress, locus of control, and teacher effectiveness. Locus of control is “an expectancy variable that describes the perception of personal control that one has over the reinforcement that follows his behavior” (p.27), and it is a one-dimensional continuum, ranging from external to internal. Locus of control and stress were treated as independent variables, while teacher effectiveness is the dependent variable. The results indicated that teacher effectiveness was highly correlated with stress levels. Teachers who experienced high levels of stress tended to obtain higher levels of teacher effectiveness. Kauts and Mittu further found that the most effective teacher had excellent individual control skill.

Research regarding teacher stress has been well documented. The main sources that emerged for teachers' stress were: role-related stress, task-based stress, and teaching events stress (Pettegrew & Wolf, 1982). Many studies have been conducted to examine the

relationship between certain demographic variables (e.g., age, teaching experience, gender, etc.) and teachers' stress, and these findings were not consistent. A few studies have been found that examined the relationship between stress and teaching effectiveness. Therefore, the relationship between stress and teaching effectiveness has not been firmly established.

Occupational Stress among Preservice Teachers

Research has indicated that preservice teachers may experience high levels of stress during their practice teaching. The stressors for preservice teachers during practice teaching have been well documented. With regard to the relationship between preservice teachers stress and their instructional effectiveness, most research has indicated that stress can negatively impact preservice teachers' instructional effectiveness.

Teaching is an occupation with a high degree of stress (Hanif, 2004). According to Greer and Greer (1992), preservice teachers may experience the highest levels of stress and burnout during preservice field experience. The practice teaching that preservice teachers need to experience in the teacher education program could lead to anxiety and distress (Bowers, Eicher & Sacks, 1983). Gold and Bachelor (2001) also suggested that the practice of student teaching can contribute to preservice teachers' stress and burnout before entering the profession as fully qualified teachers.

Preservice teachers assume multiple roles while preparing for their careers in the classroom (Cameron et al., 2012). According to Cameron et al. (2012), preservice teachers assume the primary role of university students. Therefore, completing the designated course work is a top concern for these preservice teachers. Secondly, preservice teachers assume the role of teachers. They have to exhibit skills needed to teach in the public schools and as such.

Their classes are constantly supervised by cooperating teachers and university supervisors.

Two different roles that preservice teachers assume in the university may contribute to their stress (Cameron et al., 2012). Chaplain (2008) suggested that the teaching practicum is the most stressful experience in teacher education program because preservice teachers may face excessive psychological and social demands from students, cooperating teachers, and university supervisors. Abebe and Kitterman (2006) also indicated "preservice teachers irrespective of their degree of experience were significantly more stressed by their relationship with pupils than by the evaluation of the cooperating teacher" (p. 55). In addition, Abebe and Kitterman (2006) found that preservice teachers perceive their experience in the classroom to be more stressful than the cooperating teachers perceive it to be.

Many factors were found to contribute to preservice teachers' stress. Research has shown that factors such as student behavior (Hockley & Hemmings, 2001; MacDonald, 1993; Murray-Harvey et al., 2000), workload (Kyriacou & Stephens, 1999; Murray-Harvey et al., 2000), role conflict and ambiguity (Pettegrew & Wolf, 1982), and professional evaluation (Kyriacou & Stephens, 1999; MacDonald, 1993) may lead to preservice teachers' stress.

Classroom management is also a factor associated with preservice teachers' stress (Clement, 1999), and it is the predominating factor that contributes to student teachers' stress (Sanderson, 2004). McCormack (2001) also indicated that classroom management and discipline are the most challenging aspects of teaching for preservice teachers. Hart (1987) attempted to gauge the anxiety of student teachers and found that the student teachers' anxiety was closely associated with classroom management. Moreover, results indicated that 39% of student teachers experienced anxiety regarding aspects of classroom control and

discipline (Hart, 1987). Rancifer (1992) suggested that stressors such as "lack of student discipline," and "classroom management organizational skills" were frequently identified by preservice teachers during practice teaching. Thomas and Kiley (1994) also found that first-year teachers' concerns tended to focus on classroom management and discipline. Research has also indicated that many teachers gave up working in the education field because they could not manage the classrooms (Rosas & West, 2009). Veteran teachers tend to deal with discipline issues based on their experience, while beginning teachers handle classroom issues based on their intuition (Rosas & West, 2009), which may directly contribute to teachers' stress (Gallup, 2010). Beginning teachers and preservice teachers may not have experience in effectively managing the class because teacher education program does not offer courses that specifically address classroom management issues (Gallup, 2010).

Brackenreed and Barnett (2006) tried to identify preservice teachers' perceptions toward the behavior management in inclusive classrooms. The results revealed that preservice teachers expressed concerns about their ability to cope with stress of the classroom as early as three months into a teacher preparation program. Abebe (2011) identified the stressors that preservice teachers and cooperating teachers might encounter in two metropolitan cities. There were 42 preservice teachers and 40 K-12 certified cooperating teachers in this study. A questionnaire of Rating Pre-service Teacher Events for Stress (Abebe & Kitterman, 2006) was used to assess teachers' stress. This survey assessed teachers' stress on a Likert scale ranging from 1 (low stress) to 5 (high stress). The results indicated that the primary stressors for both preservice teachers and cooperating teachers are discipline problems. The results are

consistent with conclusions made by Male (2003) and Lewis, Romini, Qui, & Katz (2005), who suggested discipline as one of the major problems in the classroom.

Feitler and Argyle (1990) conducted a study to examine the preservice teachers' stress levels, symptoms of stress, the sources of stress, and the perceptions toward teaching across the teaching practicum. The questionnaire was distributed to participants at two time periods; the first is prior to field experience while the second is at the conclusion of the field experience. The results indicated that preservice teachers' stress levels slightly decreased as the semester progressed, and the stressors reported by these preservice teachers were: grading, coursework and time pressure.

Hopkins et al. (1997) attempted to investigate preservice teachers' stress levels during student teaching period from two different contexts. Participants were assigned to two different groups (experimental and control group). Experimental group preservice teachers taught the classes in Professional Development Schools (PDS) and collaboratively worked with clinical faculty, while control group preservice teachers taught the classes in the traditional context where cooperating teachers and university supervisors were the two feedback givers. According to Hopkins et al. (1997), PDS are the places where preservice teachers are directly guided by classroom teachers. The preservice teachers in both groups were asked to complete stress instruments at two time periods; at the beginning of teaching practice and the end of teaching practice. The Teachers Stress Scale (Pettegrew & Wolf, 1982) was modified and utilized in this study. The results indicated that preservice teachers in two different groups experienced less stress as the semester progressed. However, preservice teachers who taught in PDS experienced more stress than preservice teachers who taught in

traditional teaching contexts. Hopkins et al. (1997) speculated that lack of experience, day-to-day interaction, and multiple duties may have contributed to preservice teachers' increased stress levels. Hopkins et al. (1997) further concluded that PDF settings need to be modified to address preservice teachers' needs and mitigate their stress.

Few studies were found that examined the relationship between stress and preservice teachers' instructional effectiveness. Jelinek (1986) observed two student teachers and recorded their behaviors during the class. By interviewing these two student teachers after the class, Jelinek (1986) found that the relationship between stress and teaching performance was not firmly established. One of student teacher's performance was negatively affected by stress as his cooperating teacher was reported as the main stressor. However, the other student teacher perceived stress as a potential facilitator to teaching performance. Jelinek (1986) concluded that university supervisors should play important roles in assisting preservice teachers to avoid the stress that elicits negative outcomes.

A study by Sadowski, Blackwell, and Willard (1986) examined if locus of control and perceived stress impacted student teachers' performance. Twenty-seven student teachers were asked to complete The Locus of Control Scale and The Perceived Stress Inventory. The Locus of Control Scale is a 20-item Likert scale with the total score ranging from 20 to 100. The Perceived Stress Inventory consisted of 10 items, each item has 10 different numeric scales from "not at all stressful" to "extremely stressful." In addition, teaching performance was evaluated with 8 items by supervisors. These items were designed to reflect teachers' ability to work with students individually and as a group. The results indicated that perceived stress and performance were negatively correlated on a significant level.

In summary, research has indicated that preservice teachers may experience high stress during practice teaching. Classroom management and student discipline issues have been reported as the most stressful factors among preservice teachers. Few studies have been found to examine the relationship between preservice teachers' stress and their teaching effectiveness, and the existing studies report that stress was negatively correlated with preservice teachers' teaching performance.

Occupational Stress among Physical Education Teachers

Few studies were found that investigated physical education teachers' stress or the factors that contributed to physical education teachers' stress. Also, few studies were found that investigated the relationship between physical education teachers' stress and their instructional effectiveness.

Morgan and Hansen (2008) found that the major causes of stress for physical education teachers are work conditions, salaries, bonuses and allowances, status of physical education, supervision, school facilities, workload, and career development. Al-Farmawy (1994) found that the sources of stress for the physical education teacher include students' disruptive behavior, problems related to the curriculum, time pressure, role conflict, and the relationship between the physical education teacher and school administration. Interestingly, Wendt and Bain (1989) found that the highest concerns for beginning physical education teachers with less than 10 years' experience were impact concerns, followed by self-concerns and task concerns. Capel (1993) conducted a study to investigate the stressors experienced by beginning physical education teacher in Britain. The stress instrument consisted of 35 items describing different possible stressful teaching events. The results indicated that the most

stressful factors for beginning physical education teachers were: evaluation anxiety, class control anxiety, professional and administrative concerns anxiety, school staff anxiety, and teaching requirements anxiety. In other words, as Capel (1993) stated, “factors that caused the most anxiety were related to being observed, evaluated and assessed” (p.285). Bischoff and Hall (1983) attempted to identify the teaching obstacles encountered by first-year physical education teachers, and they found that the highest degree of difficulty was managing large classes and being flexible in using instructional facilities.

Al-Mohannadi and Capel (2007) sought to identify stressors for physical education teachers in Qatar in the beginning and the end of the school year. There were two rounds of survey delivered to the participants. The first round survey included 240 participants while the second round survey contained 260 participants. All the participants were the physical education teachers in primary and middle schools in Qatar. All the potential stressors were listed in the survey, and participants were asked to choose their stressors for the two different time periods. The results indicated that teachers' stress did not change significantly from the beginning to the end of the school year. The factor that caused the most stress for all teachers in the beginning and the end of the school year was student problems. The factor that caused the least stress for all teachers at the beginning of the school year was work load and at the end of the school year was a lack of appreciation. It should be noted that student behaviors were considered as the most stressful factor for all physical education teachers at both beginning and the end of the school year except for non-Qatar teachers. According to Al-Mohannadi and Capel (2007), different expectations and attitudes might contribute to different perceptions toward stress events among non-Qatar physical education teachers.

Stress level varies between Qatar physical education teachers and non-Qatar physical education teachers due to the factors such as background, teaching experience, role, and teaching responsibilities.

Research has indicated that classroom management is an important factor contributing to physical education teachers' stress (Al-Mohannadi & Capel, 2007; Capel, 1993; Rink & Hall, 2008), especially for teachers in elementary classrooms (Cotter, 2011). According to Rink and Hall (2008), classroom management and discipline are the major concerns for elementary school physical educators, as they need to manage people, equipment, space, and time in order to facilitate student learning. Rink and Hall (2008) also stated that elementary physical educators need extra time to reinforce children's positive behavior and to extinguish negative behaviors. In the meantime, physical educators "must be effective at visual scanning, using physical proximity to control students, moving easily among the students, and providing feedback to individuals or groups while simultaneously monitoring the entire class" (Rink & Hall, 2008, p.213).

Physical education teachers' burnout has been addressed in the literature. A study by Fejgin, Ephraty, and Ben-Sira (1995) assessed burnout levels of physical education teachers and examined the causes of physical education teachers' burnout. The sample consisted of 188 physical education teachers from Israel. Participants were asked to complete a demographic questionnaire, a form that describes specific work conditions, and a burnout inventory. The burnout inventory includes 21 items depicting physical and mental states such as fatigue, depression, optimism, feeling entrapped, feeling hopeless, and feeling energetic. Each item has a numeric scale from 1 (never) to 7 (always). The results revealed that physical

education teachers had a low degree of burnout (mean=2.42). On the other hand, Malach-Pines (1984) used the same inventory to measure physical education teachers in the United States and found a higher mean score for burnout (3.2). Physical education teachers in Israel had more emotional support available, especially in the non-work areas, which acted as a buffering mechanism against burnout (Pines, 1983). Moreover, Pines further explained that Israelis experienced more emotional reciprocity and mutual influence and their family relations were significantly better. All of those characteristics protected them from pressure and supported them in times of stress and failure (Pines, 1983). Smith and Leng (2003) utilized the same instruments to measure burnout levels involving 74 Physical Education (PE) secondary school teachers in Singapore. The results indicated that PE teachers in Singapore exhibit moderate burnout levels with the mean score of 3.01. This conclusion was made based on the criterion judged by Ivancevich and Matteson (1988), who suggested the mean value ranging from 1.0 to 3.0 falls in the low-burnout region while 3.0 to 5.0 falls in the moderate-burnout region, and 5.0 to 7.0 falls in the high-burnout region. In addition, the study indicated that the Bureaucratic Dimension was correlated with burnout, and the Structural-Physical Dimension is the source least correlated with burnout. No significant correlations were found between any of personal demographic characteristics and burnout. Bureaucratic Dimension of burnout included "bureaucratic hassles, administrative characteristics, and the role of the individual in the organization" (p.207). The Structural-Physical Dimension included variables "such as physical surroundings, noise level, and the degree of compatibility between work needs and physical structure" (p.206).

Koustelios (2003) examined burnout levels among Greek physical education teachers. The sample contained 175 physical education teachers from primary schools in the area of Thessaloniki. Job burnout was measured by the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981). The Maslach Burnout Inventory contains three subscales: emotional exhaustion, depersonalization, and personal accomplishment. The results revealed that coaches, full-time physical education faculty members report lower levels of burnout than professions in another human service. The results also indicated that gender was not correlated with physical education teachers' burnout.

Few studies investigated the relationship between physical education teachers' stress and their teaching performance. Green-Reese, Johnson, and Campbell (1991) tried to determine the differences in the levels of teacher job satisfaction and job stress based on the variables such as age, teaching experience and school size. Data were obtained from 229 secondary school physical education teachers in 85 urban schools in North Florida and South Georgia. The Job Satisfaction Scale and the Job-Related Stress Scale were utilized to measure the participants' job satisfaction and stress levels. The results indicated that the job satisfaction was negatively correlated with job stress among physical education teachers in secondary school with an enrollment above 1500. A difference was found between schools with 1,001-1,500 students and schools with 1,501-2,000 students. It appeared that an increase in school size resulted in an increased levels of teachers' job stress (Green-Reese et al., 1991). Interestingly, age was not found to be a significant factor in job satisfaction and job stress.

A study by Hussein (2010) examined the impact of stress on teaching performance among secondary school physical education teachers in Egypt. A scale of stress and scale of

physical education teachers' performance were used to assess participants' stress and their teaching performance. The scale of stress includes 36 statements, each statement has five numeric scales from "a very large degree" to "a degree very few." Statements in the scale of stress included factors related to six areas: "students, school materials, monthly salary, educational supervision, relationship between teacher and administrator, and relations with other teachers." The instrument measuring physical education teachers' performance consisted of 94 statements, covering the following aspects: teacher planning, teaching strategies and classroom management, scientific material, evaluation, and the profession of teacher (Hussein, 2010). The results indicated that the psychological stress faced by the physical education teachers had a negative impact on performance as designated by the National Standards for Education in Egypt.

In summary, studies concerning physical education teachers' stress are limited. Research has indicated that the factors such as workload, supervision, and students' disruptive behaviors were the most frequently reported stressors. Studies have also shown that physical education teachers experienced lower or moderate burnout compared to teachers with other subjects. However, few studies were found that examined how physical education teachers' stress impacted their instructional effectiveness. A study by Hussein (2010) found that physical educators' stress was negatively correlated with teaching performance, yet more research is needed to examine this relationship.

Occupational Stress among Preservice Physical Education Teachers

Little research has been conducted to investigate the preservice physical education teachers' stress. No studies were found to examine the relationship between preservice physical education teachers' stress and their instructional effectiveness.

Chow and Fry (1999) conducted a cross-culture study to examine student teachers' perception toward their teaching practice in two different countries, and they found that the top concern for physical education student teachers was class management (e.g., handle non-compliant behavior). Furthermore, Chow and Fry (1999) found that preservice physical educators attributed their success on practice teaching to personal attributes (e.g., being knowledgeable, and competent in sport skills).

No studies were found that examined the relationship between stress and preservice physical education teachers' instructional effectiveness. However, Paese and Zinkgraf (1991) conducted a study involving 35 physical education major student-teachers to examine stress and efficacy levels in the beginning and the end of student-teaching experience. Participants were asked to complete the instruments twice; the first time was at the beginning of the semester while the second time is at the conclusion of the student-teaching experience.

Pettegrew and Wolf's Teacher Stress Scale (Pettegrew & Wolf, 1982) was modified and used to measure student teachers' stress levels. The 16-item Teacher Efficacy Scale (TES) contains the categories of general teacher efficacy and personal teacher efficacy. The general teacher efficacy is defined as "the degree to which the teacher believes that teachers can have positive impacts on students" (p.310), while the personal teacher efficacy measures are "the degree to which an individual believes he or she can personally elicit positive change in the

students” (p.310). The Teacher Stress Scale (Pettegrew & Wolf, 1982) measures role-related stress (role ambiguity, role overload, role preparedness) and task-based stress (job satisfaction, illness symptoms). The results indicated that student teachers’ stress level decreased as the semester progressed due to the clearer expectations and accumulated teaching experience. Interestingly, teachers’ general efficacy and personal efficacy maintained high levels in both pre-test and post-test, indicating the positive feeling that student teachers possessed when entering the teaching profession. This conclusion raises further questions: does the higher levels of self-efficacy represent higher levels of instructional effectiveness? What is the relationship between preservice physical education teachers’ stress and their instructional effectiveness?

In summary, studies concerning preservice physical educators’ stress and instructional effectiveness are rare. No studies were found that examined if stress impacts preservice physical educators’ instructional effectiveness.

Instructional Effectiveness

The study of instructional effectiveness has been a popular research topic for many years. Researchers have attempted to identify the characteristics of effective teachers and have created a variety of evaluation tools to measure instructional effectiveness. The teacher’s skill of creating an educational environment in which justifiable curriculum goals are most readily attained has been suggested as the primary determinant of instructional effectiveness. This characteristic is frequently described as enhancing “student learning.” With regard to physical education, Academic Learning Time in Physical Education (ALT-PE) is a critical instrument

used to measure student learning in physical education context. Therefore, ALT-PE is an essential factor that should be used to measure physical educators' instructional effectiveness.

According to Anderson (2004), effective teachers are “those who achieve the goals which they set for themselves or which they have set for them by others (e.g., ministries of education, legislators and other government officials, and school administrators)” (p.22). Anderson (2004) further stated that “those who investigate and attempt to understand teacher effectiveness must be able to link teacher competence and teacher performance with the accomplishment of teacher goals” (p.23). Hanif (2004) distinguished between teacher effectiveness, teacher competence and teacher performance. According to Hanif (2004), “Teacher effectiveness is a matter of the degree to which a teacher achieves desired effects upon students. Teacher performance is the way in which a teacher behaves in the process of teaching, while teacher competence is the extent to which the teacher possesses the knowledge and skills (competencies) defined as necessary or desirable qualifications to teach” (p.43). Although there are different definitions, Hanif (2004) suggested that teacher effectiveness is closely associated with performance and competency. On the other hand, Markley (2007) defined an effective teacher as “one who demonstrates knowledge of the curriculum, provides instruction in a variety of approaches to varied students, and measurably increases student measurement.” According to Alliance for Excellent Education (2008), teacher effectiveness also can be defined as “demonstrating contributions to growth in student learning” (p.1).

Goe, Bell, and Little (2008) defined teaching effectiveness from much broader perspectives. They believe that effective teachers have high expectations for all students and

have the ability to assist student' learning. Effective teachers:

- contribute to positive academic, attitudinal, and social outcomes for students;
- utilize diverse resources to plan and structure engaging learning opportunities;
- contribute to the development of classrooms and schools;
- collaborate with other teachers, administrators, parents, and education professionals to ensure student success.

The New Teacher Project (2010) provided six standards for teaching effectiveness: 1) students have a chance to succeed in the classroom, regardless of their socioeconomic status, 2) facilitate student learning is the top priority for teachers' responsibility 3) teaching methods and strategies used in the classroom can be measured and observed, 4) evaluation results can be used for teachers' professional development, 5) evaluations should play a major role in important employment decisions, and 6) no evaluation system can be perfect – in teaching or in any other profession.

According to Hunt (2009), an effective teacher possesses the following characteristics: 1) knowledgeable in both subject content and pedagogical skills; 2) actively engage in professional development, collaborating with school administrators and parents to improve student learning; 3) use a variety of teaching techniques to create a positive learning environment for student learning.

Rubio (2009) suggested that an effective teacher has both excellent professional and personal skills. According to Rubio (2009), an effective teacher not only has professional skills consisting of content knowledge, lesson planning, clear communication, good classroom management, and high expectations for students, but also has excellent personal

skills by showing caring to students, knowing students individually, maintaining a positive teacher-student relationship and classroom environment.

Layne (2012) examined students' and faculty's perceptions toward effective teaching. According to Layne (2012), students considered teachers' social and emotional factors (such as professor's interaction with students) as major predictors for teaching effectiveness, while faculty perceived that how to disseminate subject knowledge to students as a criterion to measure teaching effectiveness. In other words, students' evaluation mainly focused on their learning results (e.g., obtaining a high score in finals), while faculty's perceptions on teaching effectiveness relied on their teaching process (e.g., what methods were used to teach subjects? How to make students learn from class?).

With regard to the methods applied to assess teacher effectiveness, Tyler (2010) suggested that the assessment of teacher effectiveness should meet four requirements. First, the results of the assessment must adequately reflect the quality of a teacher's performance. Second, the scoring rubric must be aligned with what is measured. Third, performance results are a good gauge of the definition of teaching quality. Last, the use of the performance results must be consistent with the original purpose of the assessment.

Danielson (1996) designed a teaching rubric encompassing 22 components of teaching and 66 elements into four domains of teaching responsibilities. Each component is designed to display what is needed to insure competence in each domain. Domain 1, "Planning and preparation," contains 6 components including the knowledge and skills needed to plan an effective lesson. Domain 2, "Classroom environment," encompasses five components including creating physically safe environment to meet students' expectations. Domain 3,

“Instruction,” covers 5 components that assess teachers’ ability to engage students in learning by using a variety of instruction strategies. Domain 4, “Professional responsibilities,” includes 6 components to assess if teachers demonstrate high levels of professionalism in interacting with students, parents, colleagues, and community.

Ammons and Lane (2012) suggested that teaching effectiveness can be evaluated from three aspects. The first aspect is the teaching portfolio, which contains the teaching philosophy, syllabi, content selection criteria, and the goals, objectives, and results of courses. The second aspect is the student evaluations of teaching. The third aspect is a peer review of classroom implementation of the plans and processes. Markley (2007) argued that most teacher evaluation tools were fraught with problems (e.g., inflated evaluation, highly subjective, and lack of objective measures), and Markley (2007) indicated that observations combined with data-driven assessment could be the best approach to measure teacher effectiveness.

Tigelaar, Dolmans, Wolfhagen, and Vleuten (2004) surveyed 74 university teachers to examine the elements for teaching effectiveness. The survey respondents identified three aspects as criteria to measure effective teaching: 1) person as teacher (positive attitude and respect for students), 2) familiar with content knowledge, and 3) capable of facilitating students’ learning.

Goe et al. (2008) illustrated five evaluation methods to assess teaching effectiveness. They are classroom observation, principal evaluation, instruction artifact, portfolio, teacher self-report measure, and student survey. According to Goe et al. (2008), classroom observation can be used in supervising specific teacher practice and the interaction between

teachers and students. Principal evaluation is an assessment tool that is usually used for summative purposes (e.g., tenure decision, dismissal decision for beginning teachers).

Instructional artifact is an assessment method that evaluates teachers from instruction-related aspects, such as lesson plans, teacher assignments, scoring rubrics, and student work.

Goe et al. (2008) also suggested that teachers can be evaluated from three different categories, namely inputs, processes, and outputs. Inputs refer to teachers' attributes, such as teacher beliefs, expectations, experience, pedagogical and content knowledge, and educational attainment. Processes can be described as the interaction between students and the teacher within the classroom. With regard to outputs, they represent the results of the classroom processes. For example, students' achievement, graduation rates, student behavior, engagement, attitudes, and social-emotional well-being. According to Goe et al. (2008), outputs are strong indications of teacher effectiveness.

Preservice teachers' instructional effectiveness. One of a few studies regarding preservice teachers' instructional effectiveness was conducted by Oluwatayo and Adebule (2012). This study examined student teachers' teaching performance in secondary schools and found that gender and teaching experience were not correlated with teaching performance. Teaching performance assessment in this study encompassed the following aspects: plan of the lesson, teaching aids/devices, conduct of the lesson, knowledge of the subject matter, class management, and teacher's personality.

Song (2006) argued that besides examining teacher candidates' content knowledge and pedagogy, the intellectual and ethical aspects should also be considered in evaluation tools.

Therefore, Song (2006) conducted a study to assess preservice teachers' instructional

performance by combining the traditional teacher performance assessment method with an intellectual development tool. Intellectual and ethical development can be measured based on teachers' internal hierarchy of values for making decisions (Song, 2006). Three professional cohorts of preservice teachers from an urban teacher education program attended in Song's study. The results indicated that a higher level cohort in teacher education program, the more proficient their teaching performance tended to be, and the higher their intellectual and ethical development became.

Physical educators' teaching effectiveness. Physical education has been proved as an effective program to address children's obesity (Burgeson, 2004; Goran, Reynolds, & Lindquist, 1999). The National Association for Sport and Physical Education (NASPE, 2003), and the Centers for Disease Control and Prevention [CDC] (2001) all recommend daily physical education in order to assist children to fight against obesity. According to NASPE (2003), a quality physical education contains four components: opportunity to learn, meaningful content, appropriate instruction, and student and program assessment.

Qualified physical education teachers are essential parts in a quality physical education program as they are responsible for creating appropriate content and utilizing different teaching strategies to promote student learning (NASPE, 2007). According to NASPE (2007), a qualified physical education teacher possesses the skills, knowledge, and values outlined in the NASPE National Standards for Beginning Physical Education Teachers (NASPE, 2003). Other attributes for qualified physical education teachers include: be able to create and implement developmentally appropriate content to meet different types of learners; set realistic expectations and assign appropriate practice for students to facilitate their learning;

utilize different assessment methods; demonstrate professionalism and ethical behavior; and engage in reflective practices. According to Rink and Hall (2008), an effective physical educator should be a good manager who can appropriately distribute equipment, create space, and manage time efficiently during the class. Rink and Hall (2008) also noted that an effective physical educator must be capable of dealing with multiple events simultaneously, such as monitoring a student's progress, providing feedback, and observing the whole class. Other characteristics of effective physical education teaching include: creating appropriate content to engage students at a high level rate of success; utilizing verbal instruction coupled with demonstration and modeling to enhance teaching effectiveness; providing a variety of feedback after students completed assigned tasks. Zeng, Leung, and Hispcher (2010) summarized the characteristics of effective physical education instruction: 1) clear objectives and congruent content; 2) classes are well-organized and have appropriate expectations for students; 3) developmentally appropriate tasks and high success rate; 4) smooth transition and low in management time; 5) appropriate guidance and active supervision; 6) high percentage of students-engaged time and low percentage of student-waiting time; and 7) teacher support.

Harrison (1987) also identified several characteristics of effective physical education teaching: 1) high expectations for students, 2) excellent classroom management and organization skills, 3) a supportive learning environment, 4) active teaching, 5) tasks with an appropriate level of difficulty engaging students at a high success rate, 6) opportunity to learn for students, 7) teaching proficiency, and 8) ability to teach students with diversity backgrounds.

Research has already indicated that effective teaching has positive effects on student learning (Delaney, Johnson, Johnson, & Treslan, 2010; Grayson, 2011; Hickson & Fishburne, 2005; Rink & Hall, 2008). Hickson and Fishburne (2005), Parker (1995), and Gusthart, Kelly, and Rink (1997) suggested that student learning is the primary goal for physical educators' teaching. Therefore, student learning is a critical factor that should be considered to measure teaching effectiveness. As Siedentop and Tannehill (2000) stated, "if you want to learn about or evaluate the effectiveness of physical education teachers, you have to watch the students, not the teacher" (p.27). Hickson and Fishburne (2005) utilized behavioral methods to investigate if effective physical education teaching contributes to increased student learning. Student behavioral data were collected by applying teaching methods that emphasize student learning. The results coupled with interview responses indicated that intervention teaching had positive effects on student learning as students' engagement rates increased, and students' non-engaged time decreased. Gusthart, Kelly, and Rink (1997) also found that effective teaching performance positively affected students in learning volleyball forearm passing and serving.

As research on teaching effectiveness advanced, numerous studies have proved that certain student and teacher behaviors were closely associated with student achievement. These findings were synthesized as direct instruction in the classroom setting (Rosenshine & Stevens, 1986). According to Sweeting and Rink (1999), direct instruction involves "the selection of clear instruction goals, step by step hierarchical sequenced chunks of content, high teacher centered structure, and immediate specific feedback on performance" (p.217). Chen, Housner, and Wayda (2011) summarized the characteristics of the direct instruction

model: a) clear lesson objectives, b) demonstrating skills during class, c) utilizing instructional cues to assist students' learning, and d) checking students' understanding.

The effectiveness of the direct instruction model has been well documented (Chen et al., 2011). Zeng et al. (2010) videotaped physical education lessons and analyzed teachers' behaviors by using Direct Instruction Behavior Analysis. They recommended "direct instruction model should be taught and reinforced in PETE programs because this model is crucial for the preservice teachers to obtain the essential knowledge and skills to meet the needs of diverse learners" (p.26). Research also indicated that student learning can be facilitated by using direct instruction (Ayers et al., 2005; Dean & Kuhn, 2006; Rink & Hall, 2008, Sweeting & Rink, 1999). Sweeting and Rink (1999) utilized direct instruction as intervention to assess elementary school students' standing long jump performance and they found that student learning was enhanced during the learning process period as well as during the product performance. Ayers et al. (2005) also used direct instruction to teach elementary school student standing long jump, and they found that student learning was increased as the number of elements of direct instruction was increased.

Measuring student learning is not an easy task since the environment of physical education class is vastly different from the regular classroom. For example, the space that physical education class occupies is much wider than a regular class because students are moving the majority of time. In addition, student safety is a concern as a variety of equipment and facilities are used in the physical education class, while the regular classroom usually does not have such issue. Early research has indicated that more practice resulted in more student learning in the physical education class. Therefore, the time that students spend in

practicing is labeled as the most critical variable that contributes to student learning. However, Silverman (1991) found that there was a weak positive relationship between time-on-task and student motor skills learning while researching Academic Learning Time- Physical Education (ALT-PE). Later, Silverman (1993) refined the ALT-PE research and found that the time that students engaged in content coupled with variables such as “practice with high rate of success” and “practice with sufficient levels of feedback” may better explain student learning.

Research has indicated that ALT-PE was developed from the direct instruction model (Gusthart, Kelly, & Rink, 1997; Rink, 2001; Zeng et al., 2010). According to Wright and Walkuski (1995), ALT-PE is “an observation system that utilizes a unit of time which measures whether a student is engaged in relevant physical education content in such a way that he or she has an opportunity to experience success and therefore learn” (p.68). This system requires observers watching one student and coding his/her behavior for the entire lesson (Wright & Walkuski, 1995). Behaviors in ALT-PE contain management, transition, activity, knowledge, waiting, and off task. ALT-PE is a systematic approach for examining teaching effectiveness and student participation patterns in the gymnasium (Shute, Dodds, Placek, Rife, & Silverman, 1982). Shute et al. (1982) also suggested that the increased ALT-PE would potentially improve student achievement in the cognitive, psychomotor, and affective domains.

Studies have been conducted to examine the interaction between students and the teacher by using ALT-PE observation instruments. For example, Ahmet (2003) utilized the ALT-PE observation instrument to examine teaching effectiveness of preservice teachers and in-service teachers in terms of student behaviors, course content activities, and ALT-PE score.

Although the results indicated that in-service teachers yielded better teaching performance than preservice teachers due to the less time spent in managing class and more time spent for students' practice, Ahmet (2003) concluded that both preservice and in-service teachers should decrease the time spent on management, transition, waiting, and explanations and increase the time spent on students' practice.

Kanan and Gzagzah (2007) conducted a study involving 10 PE teachers in Jordan to examine the relationship between physical educators' behavior and students' academic learning time. Teachers' behaviors were recorded in the following categories: explanation, watching student practice the skills, organize the activities and lesson skills, class management, and management behavior. Also, the duration of students' engaging in practicing skills was recorded. The findings showed that physical education teachers spent too much time on explaining and managing. Therefore, Kannan and Gzagzah (2007) suggested that physical educators should decrease the time spent in management and verbal instruction, while increasing the time spent on students' skill practicing, they also concluded that students with higher skill levels tended to spend more time practicing. Lamaster and Lacy (1993) analyzed the relationship between teachers' behavior and ALT-PE in junior high physical education classes and found students spent under 15% of time engaged in ALT-PE in physical education classes. The most frequent behaviors displayed by physical educators were silence, management, and concurrent instruction. Hastie (1994) utilized ALT-PE to investigate the relationship between teachers' behavior and students' involvement in physical education classes. He found that effective physical education teachers spent more time in

providing feedback and active instruction while less effective physical education teachers spent more time in observing and managing the entire class.

There are some limitations regarding ALT-PE that need to be addressed. First, researchers utilize ALT-PE to record duration and frequency of target behaviors in an attempt to estimate student learning during PE classes. However, whether this estimation reflects student learning is questionable because “ALT-PE uses interval recording the events that are documented are only sampled from actions occurring in real time” (Shelton & Hawkins, 2012, p.5). Second, ALT-PE is not sensitive to lesson goals and does not describe correctly what students are doing during various activities (Parker, 1989). Although it has limitations, ALT-PE is still an effective instrument to measure student learning (Rink & Hall, 2008).

Besides ALT-PE instruments, other tools were created by researchers to examine teaching performance. For example, Cheffers, Mancini, and Martinek (1980) created Cheffers’ Adaptation to Flander’s Interaction Analysis System (CAFIAS). According to Wright and Walkuski (1995), CAFIAS is a “system that requires the observer to be trained in the use of certain codes that signify particular teacher and/or student behaviors. The observer sits within the classroom or field environment and codes behaviors every three seconds, or as often as they change” (p.66). In CAFIAS, teacher behaviors include praise and encouragement, acceptance of students’ ideas or actions, questions, information giving, direction giving, and criticism. Student behaviors include predictable responses, interpretive responses, unpredictable responses, and confusion (Cheffers et al., 1980).

CAFIAS has been shown as a valid and reliable tool to record teacher and student interaction during the class. However, this observation system primarily focuses on teachers’

behaviors, which might cause bias results. The other instrument was created by Rink and Werner (1989) to measure physical education teacher performance, namely Qualitative Measures of Teaching Performance Scale (QMTPS). QMTPS is a comprehensive instrument that encompasses seven components: 1) Clarity of task presentation. This component is determined based on student movement response to the presentation. 2) Demonstration. Demonstration refers to the specific skills demonstrated by teachers or student aids. 3) Appropriate number of cues. 4) Accuracy of cues. 5) Qualitative cues provided. This component reflects the numbers of teachers' verbal cues. 6) Appropriateness of student response. 7) Specific congruent feedback. This item reflects the degree to which teachers' feedback was matched to the task. However, QMTPS was designed primarily to describe the quality of the teacher's task presentations instead of emphasizing the student learning.

Preservice physical educators' instructional effectiveness. Preservice physical educators' perspective on teaching was significantly impacted by occupational socialization (Graber, 1989). Lawson (1986) defined occupational socialization as "all of the kinds of socialization that initially influence persons to enter the field of PE and that later are responsible for their perceptions and actions as teacher educators and teachers" (p.107). According to Lawson and Stroot (1993), PE teachers are socialized in three phases. The first phase is what Lortie (1975) called apprenticeship-of-observation. During this phase, potential PE teachers had a basic understanding about PE when they were students. The second stage, namely professional socialization, happens when these people enroll in teacher preparation program where they have a chance to engage in a variety of professional activities and practice teaching. The third stage, called "organization socialization," occurs after student

teachers graduate, and continues to shape teachers' perceptions toward PE as well as PE teaching. Research has indicated that PETE programs had little effect on preservice physical educators (Graber, 1989), and preservice physical educators' perceptions toward physical education teaching are heavily influenced by "apprenticeship of observation." Research has also indicated that preservice physical educators enter a teacher education program with well-established beliefs about what constitutes teaching (Doolittle, Dodds, & Placek, 1993).

Preservice teachers' perspectives were often custodial, authoritarian, or showed little regard to student learning (Locke, 1984). Placek (1983) conducted a study to examine student teachers' perceptions on physical education teaching, and found that keeping students happy (student enjoyment), busy (student engagement), and good (no disruptive behavior) are the criteria for effective teaching. These findings were also supported by Curtner-Smith (1996), who found the factors regarding class management, student participation, and student enjoyment were the most reported concerns for preservice teachers. A study by Chow and Fry (1999) examined student teachers' perceptions toward teaching practice in two different countries. They found the similar findings with Placek's and Curtner-Smith's.

Thanks to the ALT-PE, more and more researchers believe that student learning is the most important aspect to measure physical educators' instructional effectiveness (Ahmet, 2003; Hastie, 1994; Kanan & Gzaghah, 2007; Lamaster & Lacy, 1993; Rink & Hall, 2008; Silverman, 1993). However, little research investigated preservice physical educators' instructional effectiveness by using the data in terms of student learning. Moreover, no studies examined the impact of stress on preservice physical educators' instructional effectiveness.

In summary, researchers have developed many definitions of effective teaching. A variety of teaching evaluation tools were created to quantitatively explain what effective instruction looks like. However, considering the education's ultimate purpose, student learning is an important variable that must be considered in studies measuring instructional effectiveness. In terms of the physical education aspect, ALT-PE has been created by researchers to estimate student learning in the gymnasium, and ultimately measure instructional effectiveness in physical education setting. Although many other instruments have been created to measure physical education teaching effectiveness, most of these instruments unfortunately ignore student learning.

Summary

Stress can be described as an imbalance between the demands of the environment and individuals' capabilities to cope with these demands. Although literature has documented the positive outcomes related to stress, multiple studies have indicated that stress could negatively impact individuals' health, and ultimately lead to illness.

Research regarding occupational stress has been well examined. According to the data from a variety of work organizations, the cost of occupational stress has escalated. However, the relationship between occupational stress and working performance has not been firmly established as research yielded different conclusions. Research has indicated that stress was not directly associated with working performance, and future studies are needed to investigate if certain demographic variables can mediate this relationship.

The study of teacher's stress has been a popular research topic for decades. A major portion of existing studies have examined the sources that contribute to teachers' stress in the

educational workplace. Research has indicated that teachers' stressors encompass three areas: role-related, task-based, and teaching events (Pettegrew & Wolf, 1982). With regard to the relationship between teachers' stress and their instructional effectiveness, research yielded different results as some studies reported that stress was negatively related to instructional effectiveness, while other studies had the opposite conclusion.

Preservice teachers may experience high levels of stress due to their different roles assumed in the university. Practice teaching is regarded as the most stressful event during teacher education programs. Studies have indicated that student behavior, workload, role conflict and ambiguity, social problem-solving, and professional evaluation were the most frequently reported stressors. With regard to the relationship between preservice teachers' stress and instructional effectiveness, most studies have indicated that stress was negatively related to preservice teachers' instructional effectiveness.

Little research investigated physical education teachers' stress, and existing studies examined the sources that contribute to their stress. Results indicated that class management and student discipline issues were the two stressors that were mostly reported by physical educators. Few studies examined the relationship between stress and physical education instructional effectiveness. A study by Hussein (2010) found that stress negatively impacted physical education teaching performance in Egypt. More studies will be needed to confirm if stress is negatively related to physical educators' instructional effectiveness.

The studies concerning preservice physical education teachers' stress are limited. No studies examined the relationship between stress and their instructional effectiveness.

Instructional effectiveness has been a popular research topic in published articles. The characteristics of effective teaching have been illustrated by many researchers. Among these characteristics, student learning is considered as the most important factor that measures instructional effectiveness. With regard to physical education teaching, ALT-PE is regarded as an effective tool to measure student learning in physical education contexts, and it should be used in future studies to measure physical education teachers' instructional effectiveness.

Chapter 3

Methods

The purpose of this chapter was to describe the procedures employed to answer the research questions. To accomplish this goal, the chapter is divided into the following sections: 1) selection of the subjects; 2) instrumentation; 3) procedures; 4) research hypotheses; and 5) data analysis.

Selection of Subjects

Preservice physical educators from a PETE program at a major Mid-Atlantic university were asked to participate in this study. There are five Professional Blocks of classes (Curriculum & Instruction Block, Elementary School Block, Middle School Block, Secondary School Block, and Student Teaching Block) currently existing in this PETE program. Preservice physical educators are required to take these blocks in the order listed above. For this study, the students in the Curriculum & Instruction Block were not chosen to participate because they did not have full practice teaching requirements. In addition, preservice teachers in the Elementary School Block and the Student Teaching Block also were not selected because they taught physical education lessons in public schools during practice teaching. On the other hand, preservice physical educators in the Middle School and the Secondary School Blocks taught physical education lessons in a highly structured teaching environment, teaching college students physical education classes during practice teaching. Therefore, the participants were selected purposefully from Secondary and Middle School Blocks in the current study due to the similarly controlled nature of the practice teaching context.

At the participating institution, preservice physical educators in the Middle School Block and the Secondary School Block take 10-week Pedagogical Content Knowledge (PCK) courses followed by 5 weeks of practice teaching in order to advance within the curriculum. PCK courses are designed to assist preservice physical educators to become effective physical education instructors within specific areas. The PCK courses for the Middle School Block include Teaching Volleyball, Teaching Soccer, Teaching Basketball, Teaching Flag Football, Teaching Hockey, and Teaching Softball. The PCK courses for the Secondary School Block include Teaching Archery/Bowling, Teaching Golf, Secondary Fitness Laboratory, Teaching Outdoor Leisure Pursuits, Teaching Dance Physical Education, Teaching Tennis/Badminton, and Special PE Practicum.

After the 10-week PCK courses, the preservice physical educators are assigned to teach 5 weeks of physical education lessons (15 classes) in the Basic Instruction Program (BIP) as their practice teaching. While BIP provides a variety of team, individual, and leisure sports and recreational activity classes for college students, preservice physical educators teach only the areas in which they have been prepared. For the Middle School Block, preservice physical educators are assigned to teach physical education lessons based on their preference for a specific activity. In addition, they are divided into small teaching teams (each team usually has two or three people), and the members in each teaching team need to collaboratively create a unit plan prior to practice teaching. A unit plan is a series of lesson plans designed around a specific activity. During the practice teaching, Middle School Block preservice physical educators are required to teach a portion of the classes independently. The amount of classes that they need to teach depends on the numbers of people in the teaching team. For

the Secondary School Block, preservice physical educators are randomly assigned to teach BIP classes, and they are required to create a unit plan independently prior to practice teaching. Furthermore, they teach classes independently during practice teaching. Teaching class independently requires preservice physical educators to create lesson plans and to teach the whole course by themselves.

Instrumentation

Three instruments were used in this study; they were a demographic questionnaire (Appendix A), the Teacher Stress Scale (Appendix B), interview questions, and the West Virginia University Teaching Evaluation System.

Demographic questionnaire. The data acquired from a demographic questionnaire included gender, teaching block levels, experience of teaching/coaching children, and sports history.

Teacher Stress Scale (TSS). Teacher Stress Scale was originally developed by Pettegrew and Wolf (1982), and demonstrates a good internal consistency for all stress constructs and meets the normal standards for predictive and construct validity. Paese and Zinkgraf (1991) utilized the selected categories from (TSS) to investigate the stress levels of preservice physical education teachers during practice teaching. Therefore, the stress instrument for the current study used the same categories selected by Paese and Zinkgraf (1991) combining with two questions and three research statements in order to better test participants' stress levels. These categories measured two general areas of teacher stress: role related stress (role ambiguity, role overload, role preparedness) and task-based stress (job satisfaction, illness symptoms). There are several statements pertaining to each category, and participants were

asked to rate the intensity of their feelings for each item in five numeric scales from “not at all” to “very much so.” Stress score could be obtained by summing up the selected numerical scales from all items in TSS. According to Paese and Zinkgraf (1991), “high scores on the Likert-type scales are better for role ambiguity, role preparedness, and job satisfaction. Low scores are better for role overload and illness symptoms” (p.310). In other words, the higher score that an individual obtained in categories of role ambiguity, role preparedness, and job satisfaction, the lower stress level that he or she experienced. Therefore, the obtained value of each item in categories of role ambiguity, role preparedness, and job satisfaction would be inverted. (If participant selects “1”, “2”, “4”, or “5” as his or her response, then researcher needs to convert the value to “5”, “4”, “2”, or “1” respectively. The value would be maintained if participant chooses “3.”) While the higher score on the role overload and illness symptoms represents the higher stress level that an individual experiences. Therefore, the higher score that the individual obtained on TTS, the higher stress level that he or she experienced. Other questions included time spent in preparing and reviewing the upcoming lesson. In addition, the participants were asked to rate their feelings for three statements in five numeric scales from “very low” to “very high”. Those three statements included the level of readiness to teaching the lesson; belief about how well I will be evaluated on the teaching; level of anxiety about teaching the lesson.

Interview questions. The interview questions were originally developed by Rieg, Paquette, and Chen (2007) and modified by the researcher in order to investigate preservice teachers’ stressors in the physical education class. Interview question included informal, open-ended prompts as follows: How would you describe your thoughts and emotions before

you start teaching and during teaching? What stressors have you experienced during your practice teaching? What strategies have you used to cope with stress experienced during the practice teaching? How will the teaching style (small group teaching and independent teaching) affect your stress levels?

West Virginia University Teaching Evaluation System (WVUTES). WVUTES (Hawkins, Wiegand, & Bahneman, 1983) is an instrument that “[enables] researchers and practitioners to evaluate the teaching-learning environment by studying the actual behavior of students and teachers” (Shelton & Hawkins, 2012, p.5). WVUTES is also an instrument that can assess effective teaching by observing teacher and student behaviors (Hawkins & Wiegand, 1989). Instead of using traditional teaching evaluation rating scale, which have no reference to actual behavioral events, researchers utilizing WVUTES can record the target behaviors in real time events (Shelton & Hawkins, 2012).

WVUTES is reported to possess content validity (Nolan, 1995), and it is a comprehensive system with each behavior being mutually exclusive (Shelton & Hawkins, 2012). Comprehensive means that all the possible behaviors occurring in real time can be found in either the student or teacher behavior system. Mutually exclusive means that “each behavior can only be coded into one category, and that there is no overlap between categories” (Shelton & Hawkins, 2012, p.6).

WVUTES contains a student behavior system and a teacher behavior system. The student behavior system includes 8 student behaviors (Appendix C) while the teacher behavior system contains 11 teacher behaviors. The student behavior system was created as an ALT-PE based observation system. ALT-PE has been found to be a reliable estimate of student

learning in physical education context (Silverman, 1993), and other research has indicated that student learning is an essential variable in measuring instructional effectiveness (Rink & Hall, 2008).

There are two behaviors in the student behavior system of WVUTES that are found to estimate student learning: motor appropriate (ALT-PE) and cognitive (ALT). Therefore, “Total Learning Time” (TLT), which reflects both psychomotor and cognitive student learning, can be calculated by tallying the time that students engage in motor appropriate and cognitive behaviors during a physical education class.

Procedures

The researcher created permission forms (Appendix D) for videotaping students in selected physical education lessons as well as consent forms for preservice teachers. The researcher also randomly assigned the date for videotaping each preservice teacher’s practice teaching. Institutional Review Board (IRB) for the Protection of Human Subjects’ approval was obtained prior to collecting data.

Before collecting the data, two observers coded student behaviors in order to determine Inter-observer Agreement (IOA). The formula that was used for determining reliability was based on the following mathematical equation: $R = (\text{agreements} / [\text{agreements} + \text{disagreements}]) \times 100$. For this study, the lead researcher was required to achieve a reliability value of 85% or more (Mohr, 2000). According to Mohr (2000), WVUTES is a reliable indicator of instructional effectiveness in physical education settings as long as observer reliability is established and maintained.

For this study, university supervisors were trained to assist in collecting data. In the second week of the fall semester, the researcher held a meeting with university supervisors to introduce the background and the purpose of the study, and to explain the procedures for videotaping a selected physical education lesson. The procedures consisted of recording from an angle that allows the researcher to view every part of the gymnasium or all the students. Videotaping began when the first student entered the instructional facility and end when the last student exited the instructional facility. These procedures ensured the videotaping process was standardized (Mohr, 2000). In addition, university supervisors received a list of dates when each preservice teacher was to be videotaped. All of these video recordings occurred in the first two-week of the BIP classes. The researcher also handed out permission forms for videotaping to university supervisors. The number of copies that individual university supervisor received depended on the number of preservice teachers that the university supervisor supervised during the BIP placement. Last, researcher gave university supervisors a key to the locked cabinet, university supervisors were advised to deliver the videotape equipment and completed TSS to a locked cabinet after data collection.

Approximately in the fifth week of the semester, preservice teachers in Middle School Block and Secondary School Block had a mandatory meeting with university supervisors. At this meeting, the researcher introduced the background and the purpose of the study (Appendix E). For those individuals who were willing to participate, they were asked to sign a consent form (Appendix F) and completed a short demographic questionnaire. In addition, they were told that one of the classes during their first two-weeks of practice teaching would be videotaped by their university supervisor, and they also would be asked to complete the

TSS prior to videotaping. Then the researcher selected 10 individuals to interview after the data collection.

The TSS and videotaping equipment was delivered to university supervisors at least 24 hours prior to the practice teaching scheduled to be videotaped. On the day of the scheduled practice teach, university supervisors distributed the TSS to the preservice teachers at least 15 minutes prior to teach. When TSS was being completed, university supervisor set up the videotape equipment and handed out permission form to preservice teacher. At the beginning of class, preservice teacher read the content on the permission form to students in order to obtain everyone's signature on this form. At the end of the class, university supervisors delivered videotape equipment and completed TSS to the designated cabinet.

After day 1 of data collection, the researcher had 24 hours to record and to store the videotaped event on a compact disc. After the format conversion, videotaping equipment and new TSS forms were delivered to university supervisors for the day 2 data collection. The same procedures were repeated until all data was collected.

After the data collection, the researcher calculated each individual's score on TSS and selected 10 preservice teachers who had the highest scores. The researcher sent an email requesting a follow-up interview to discuss their teaching. Researcher met individually with those participants, and the conversation lasted approximately 10 minutes.

Approximately in the fourth week of the semester, the researcher started to analyze student behaviors by watching those CDs. The students being observed in the physical education lesson were randomly selected. Each student was observed for two minutes before switching to the next randomly selected student. The researcher observed as many students as

possible from each physical education lesson. The duration that the average student in the class engaged in motor appropriate and cognitive would be determined. Therefore, a teacher's instructional effectiveness can be determined by viewing the TLT generated in each physical education class. Finally, the data regarding participants' instructional effectiveness and stress scores were analyzed in order to address the research questions.

Research Hypotheses

The following hypotheses are based on the literature review and the intuition of the researcher:

- 1) Preservice physical educators' stress levels are negatively correlated with instruction effectiveness.
- 2) Secondary School Block preservice physical educators' stress is not significantly different from the Middle School Block preservice physical educators' stress.
- 3) Male preservice physical educators' stress is not significantly different from female preservice physical educators' stress.
- 4) Familiarity with specific sport is negatively correlated with stress levels for preservice physical educators.
- 5) Confidence to teach specific sport is negatively correlated with stress levels for preservice physical educators.
- 6) Readiness to teach this lesson is negatively correlated with stress levels for preservice physical educators.
- 7) Self-efficacy is negatively correlated with stress levels for preservice physical educators.

Research Design

To meet the purpose of this dissertation, a demographic questionnaire, the Teacher Stress Scale (TSS), interview questions, and the WVUTES were utilized to collect the data required to test the hypotheses. This study attempted to determine if stress experienced by preservice physical educators was related to their instructional effectiveness. This study also examined if certain demographic variables could mediate the relationship between stress and instructional effectiveness. Therefore, a demographic questionnaire was distributed to preservice physical educators prior to their practice teaching, and the preservice physical educators were asked to complete the Teacher Stress Scale before videotaping one lesson that preservice physical educators teach during the first two-week of their practice teaching. Then, ten preservice teachers who experienced the highest stress levels would be interviewed. Last, the relationship between stress and preservice physical educators' instructional effectiveness was analyzed. In addition, the correlations between selected demographic variables and stress were examined.

Data Analysis

In order to address these research questions, the collected data were analyzed by Statistical Package for the Social Sciences (SPSS) version 18.0. The analysis began with descriptive measures. For Hypothesis 1, a Pearson product-moment correlation analysis was run to determine the relationship between preservice physical educators' stress (the total score of TTS) and their instructional effectiveness (students' TLT).

For Hypothesis 2, the T-test was run to compare the means of preservice physical educators' stress in the Secondary School Block and the Middle School Block.

For Hypothesis 3, the T-test was run to test if male preservice physical educators' stress levels are significantly different from female preservice physical educators' stress levels.

For Hypothesis 4, Pearson product-moment correlation analysis was run to test if familiarity with specific sport is negatively correlated with stress levels for preservice physical educators.

For Hypothesis 5, Pearson product-moment correlation analysis was run to test if confidence to teach specific sport is negatively correlated with stress levels for preservice physical educators.

For Hypothesis 6, Pearson product-moment correlation analysis was run to test if readiness to teach a lesson is negatively correlated with stress levels for preservice physical educators.

For Hypothesis 7, Pearson product-moment correlation analysis was run to test if self-efficacy is negatively correlated with stress levels for preservice physical educators.

Chapter 4

Results

The results chapter is divided into three sections. Section one describes the characteristics of preservice physical educators. Section two describes the data analysis. Section three describes the results from interviews.

Characteristics of Preservice Physical Educators

Twenty-five preservice physical educators voluntarily participated in this research. The Middle School Block was comprised of 12 male and 2 female participants, while the Secondary School Block was comprised of 9 male and 2 female participants.

Teaching experience. Three preservice physical educators in the Middle School Block reported that they had teaching experience beyond that required in the Elementary School Block. One served as a part-time teacher in elementary school, coaching at a local elementary school one time per week. One served as a volunteer, teaching swimming lessons for a local elementary school two times a week. One served as a tutor, teaching elementary level physical education lessons 50 minutes per week. Eight preservice physical educators in the Secondary School Block reported that they had additional teaching experience besides teaching practice required in Middle School Block and Elementary School Block. Four served as camp counselors, teaching a variety of activity classes and supervising children in one summer. Two coached football and basketball for one summer. Two taught physical education classes for two semesters at a local school.

Work outside of and in school. Thirty-six percent of participants in the Middle School Block and 9% of participants in the Second School Block reported that they had a job

in addition to going to college. The average number of hours worked each week for preservice physical educators in the Middle School Block was 14 ($SD = 15.28$) with a range of 0 to 50 hours, while the average number of hours worked each week for preservice physical educators in the Secondary School Block was 14.6 ($SD = 7.23$) with a range of 0 to 25 hours. The average number of credit hours that participants in the Middle School Block took was 16.6 ($SD = 2.58$) with a range of 12 to 21, while the average number of credit hours that participants in the Secondary School Block took was 16.6 ($SD = 1.7$) with a range of 14 to 19.

Lesson planning. The average time preparing for the upcoming lesson for participants in the Middle School Block was 111.07 minutes ($SD = 69.59$) with a range of 45 to 300 minutes. The average time that was used for reviewing the upcoming lesson for participants in the Middle School Block was 47.5 minutes ($SD = 40.28$) with a range of 15 to 180 minutes. The average time that was used preparing for the upcoming lesson for participants in the Secondary School Block was 82.73 minutes ($SD = 38.82$) with a range of 45 to 180 minutes. The average time that used for reviewing the upcoming lesson for participants in the Secondary School Block was 28.18 minutes ($SD = 14.71$) with a range of 10 to 60 minutes.

Stress score. TSS was utilized in this study to evaluate preservice physical educators' stress. Preservice physical educators were asked to complete the TSS prior to videotaping one of the classes during their practice teaching. The average stress score for participants in the Middle School Block was 58.55 ($SD = 9.49$) with a range of 37 to 79, while the average

stress score for participants in the Secondary School Block was 56.8 ($SD = 5$) with a range of 53 to 69. An exploratory data analysis was conducted to determine if the stress score distribution was normally distributed. Results for the Kolmogorov-Smirnov (K-S) test for normality (Field, 2007) suggested that the score distribution did not deviate significantly from a normal distribution ($D = 0.072$, $p = 0.3$).

Teaching effectiveness. In this study, TLT represents the time that students engaged in motor appropriate and cognitive in a videotaped physical education class. A teacher's instructional effectiveness was determined by viewing the TLT generated in each physical education class. The average percentage of TLT for participants in the Middle School Block was 33.48 ($SD = 6.73$), while the average percentage of TLT for participants in the Secondary School Block was 39.83 ($SD = 5.97$). The K-S test was conducted to determine if teaching effectiveness score was normally distributed, the results indicated that teaching effectiveness distribution did not deviate significantly from a normal distribution ($D = 0.0924$, $p = 0.58$).

Data Analysis

Pearson product-moment correlation coefficients were computed to assess the relationships between preservice physical educators' stress and their teaching effectiveness, preservice physical educators' stress and familiarity with the sport that they taught during practice teaching, preservice physical educators' stress and confidence, preservice physical educators' stress and readiness, preservice physical educators' stress and self-efficacy. In addition, independent samples t-tests were computed to analyze stress levels across gender and professional blocks. A p value of 0.05 was set for all hypothesis.

Stress and teaching effectiveness. To analyze Research Hypothesis 1 preservice physical educators' stress levels were negatively correlated with instructional effectiveness, a Pearson product-moment correlation was utilized. A strong, negative correlation between preservice physical educators' stress and their teaching effectiveness was observed ($r = -0.512, p < 0.01$). Stress levels were strongly correlated with teaching effectiveness.

Middle School Block and Secondary School Block. To analyze Research Hypothesis 2 Secondary School Block preservice physical educators' stress was not significantly different from the Middle School Block preservice physical educators' stress. An independent t-test was computed. A non-significant difference in the stress scores for the Middle School Block ($M = 55.43, SD = 9.49$) and the Secondary School Block ($M = 58.55, SD = 5$) with a small to moderate effect was calculated; $t(23) = -0.98, p = 0.36, d = 0.41$. For the d value, an effect size of 0.2 to 0.3 might be a "small" effect, around 0.5 a "medium" effect and 0.8 to infinity, a "large" effect (Cohen, 1988).

Male and female. To analyze Research Hypothesis 3 male preservice physical educators' stress was not significantly different from female preservice physical educators' stress, an independent t-test was utilized to analyze this relationship. A non-significant in the stress scores for male participants ($M = 55.90, SD = 6.74$) and female participants ($M = 61.50, SD = 12.50$) with a moderate effect was computed; $t(23) = -1.33, p = 0.2, d = 0.56$.

Stress and familiarity with sport. To analyze Research Hypothesis 4 familiarity with specific sport is negatively correlated with stress levels for preservice physical educators. A Pearson product-moment correlation was computed to analyze this relationship. Stress levels were not correlated with familiarity with specific sport ($r = -0.107, p = 0.6$).

Stress and confidence. To analyze Research Hypothesis 5 confidence to teach specific sport is negatively correlated with stress levels for preservice physical educators. A Pearson product-moment correlation was used. A non-significant correlation between stress and confidence was calculated ($r = -0.34, p = 0.09$). Stress levels were not negatively correlated with levels of confidence.

Stress and readiness. To analyze Research Hypothesis 6 readiness to teach the lesson is negatively correlated with stress levels for preservice physical educators. A Pearson product-moment correlation was computed. A strong, negative correlation between preservice physical educators' stress and readiness was tested ($r = -0.66, p < 0.01$). Stress levels were negatively correlated with levels of readiness.

Stress and self-efficacy. To analyze Research Hypothesis 7 self-efficacy is negatively correlated with stress levels for preservice physical educators. A Pearson product-moment correlation was utilized to analyze the relationship. A strong, negative correlation between preservice physical educators' stress and self-efficacy was observed ($r = -0.7, p < 0.01$). Stress levels were negatively correlated with levels of self-efficacy.

Interview Responses

Ten participants were interviewed after completing TSS. When asked to describe emotions before teaching, seven preservice physical educators responded that they felt nervous, worried, and stressed right before teaching the class. Two responded that he/she felt excited. The last one said he/she felt confident before teaching. When asked "what stressors have you experienced during teaching," eight preservice physical educators indicated that

curriculum model, student attendance, and 6 preservice physical educators reported that students' disruptive behavior, noise, students' off task, and management were the potential stressors during practice teaching. When asked if a small group teaching format is more stressful than independent teaching format, eight preservice physical educators responded "yes," and they attributed high stress levels to the larger amount of teaching load during practice teaching. However, two participants indicated that independent teaching format was less stressful than small group teaching format because teachers have more freedom when teaching independently (e.g., control the pace during teaching, more freedom to work with students). When asked "what strategies have been used to alleviate stress," participants indicated that performing activities, listening music, sleeping, planning things ahead" were the potential strategies to alleviate high stress.

Chapter 5

Discussion

The research project was designed to investigate the relationship between stress and preservice physical educators' instructional effectiveness. This study was also intended to explore if certain demographic variables could mediate this relationship. Another objective of this study was to determine the factors that contribute to preservice physical educators' stress.

Stress and Teaching Effectiveness

The first hypothesis of the study was that higher stress would be related to lower teaching effectiveness. The significant negative correlation coefficient supports this hypothesis. This finding is consistent with previous studies (Hanif, 2004; Hussein, 2010; Khan, Shah, Khan, & Gul, 2012; Sadowski et al., 1986). According to Hussein (2010), the psychological stress faced by physical education teachers had a negative impact on their teaching performance. Sadowski et al. (1986) also found that perceived stress and preservice teachers' teaching performance were negatively correlated at a significant level.

Teaching is an occupation with a high degree of stress (Hanif, 2004). Greer and Greer (1992) stated that the highest risk for stress may come at the beginning of an educator's career during preservice field experience. In a traditional teacher-education program, preservice teachers enter a semester of practice teaching with a fair amount of trepidation (Pellegrind, 2010). Many research studies have been conducted to uncover the stressors during teaching. In the current study, 10 preservice physical educators were interviewed after teaching one class during the teaching practicum. When asked "what stressors have you experienced during teaching," preservice physical educators indicated that curriculum model,

student attendance, students' disruptive behavior, noise, students off task, management were stressors during practice teaching. These results were partially consistent with previous studies, as research has indicated that classroom management and student discipline issues were the most stressful factors among preservice teachers (Abebe, 2011; Brackenreed & Barnett, 2006; Clement, 1999; Hart, 1987; Lewis et al., 2005; Male, 2003; McCormack, 2001; Rancifer, 1992; Sanderson, 2004). However, curriculum model and noise are new stressors reported in this study.

In the current study, preservice physical educators in the Middle School Block and Secondary School Block were required to use the "Sport Education" curriculum model to instruct physical education classes during practice teaching. Sport Education is a curriculum and instructional model created to offer an authentic experience for students in the context of school physical education (Siedentop, 1994). There are several characteristics associated with this curriculum model. In sport education, students are assigned to different teams and participate in seasons that are usually longer than regular physical education units. Students in the same team have chance to develop team affiliation. A schedule of competition can be organized at the beginning of the season and a culminating event can be provided at the end of the season to assist students in experiencing authentic sport events. Records are kept frequently in order to evaluate individual student's performance as well as team's performance. The entire season is festive with continuous efforts made to celebrate success. Three aspects of the curriculum model can explain why it may be stressful. In Sport Education, students' attendance rate is essential for the class to operate effectively. Without enough students' involvement, it is hard for the instructor to implement the planned lesson

because students with different groups need to practice skills and complete tasks as a team. For example, in a basketball class, the instructor requires four different teams to compete each by playing 5 vs 5 games. Teams who have less than five people may force the instructor to change the planned lesson. This uncertainty may have contributed to the preservice physical educators' stress. This may be why preservice physical educators reported "students' attendance" as one of the stressors during practice teaching.

Second, in Sport Education students are affiliated with their team by their membership and role ownership (Stockly, 2008). The most common roles that an instructor can use include coach, fitness trainer, statistician, equipment manager, scorekeeper, and publicist (Stockly, 2008). Different roles assigned by the instructor will assist students in learning the subject from different perspectives. Therefore, classroom management skills are essential as the instructor needs to monitor different students performing their roles in the class. For instance, as fitness trainers leading their groups to perform warm-up activities, the teacher needs to monitor each fitness trainer with different teams to see if they utilize appropriate activities; or when students are assigned to be coaches leading their groups to perform the selected practice, the instructor needs to monitor each coach to see if they implement the planned content. Therefore, supervising students with different roles in acting responsibilities requires the instructor to have capabilities regarding effectively managing the class. This may be why most preservice physical educators also reported classroom management as one stressor during practice teaching.

Third, Sport Education is a student-centered curriculum model (Dyson, Griffin & Hastie, 2004; Wallhead & Ntoumanis, 2004). As Wallhead and Ntoumanis (2004) stated "the teacher,

after moving off center stage, often acts as facilitator to student social knowledge and skill learning through a range of student-centered learning strategies” (p.6). In other words, the teacher empowers the students to guarantee the class is successfully implemented. However, most preservice physical educators expressed their concerns about whether students acting in different roles could successfully lead their team to practice.

Noise is another new stressor reported by the participating preservice physical educators. In the current study, most physical education classes were held in an indoor gymnasium. There were at most three different physical education classes that were held at the same time during the day, and the instructor for one specific class could be affected by other classes due to the different content being delivered (e.g., when the instructor explained the critical elements of skills to students in the volleyball class, students in the Frisbee class were playing games). In addition, there are no obvious boundary lines marked on the ground to assist students with different classes in distinguishing their territory. Students in one class could be easily distracted by other classes, which is a potential factor contributing to students’ off-task behavior. In the current study, a teacher’s effectiveness is estimated by calculating the time that students engaged in cognitive and motor appropriate behavior during the class. The stressors reported by preservice physical educators could negatively impact the time that students engaged in cognitive and motor appropriate behavior in the class, which also supports the negative correlation between stress and teaching effectiveness.

Professional Block

The second hypothesis was that preservice physical educators’ stress in the Middle School Block would not differ significantly from preservice physical educators’ stress in the

Secondary School Block. A non-significant difference in the stress levels with these two groups supports this hypothesis. Several aspects can explain the findings. First, preservice physical educators in the Middle School and the Secondary School Blocks teach physical education lessons in the same highly structured teaching environment. The characteristics of this teaching environment include: a) classes were supervised by university supervisors; b) preservice physical educators were required to utilize the same curriculum model to teach classes; c) preservice physical educators were required to take PCK classes prior to practice teaching. Second, preservice physical educators from two different professional blocks have some similar demographic variables. For example, preservice physical educators from two professional blocks spent almost the same amount of time in working off-campus in addition to going to the school; preservice physical educator also took the same amount of courses during the semester. Third, when asked if a small group teaching format is more stressful than independent teaching format during the interview, the results varied as some participants reported that teaching in the Secondary School Block experienced more stress due to the heavier teaching load, while others reported that teaching in the Middle School Block experienced more stress due to the less freedom that an individual could have when teaching a lesson because they need to design lesson plans and teach classes collaboratively.

Interesting, the preservice physical educators in the Secondary School Block spent slightly less time in preparing and reviewing the upcoming lesson than preservice physical educators in the Middle School Block. In addition, preservice physical educators in the Secondary School Block experienced slightly more stress than preservice physical educators in the Middle School Block when comparing the mean value of stress. These differences may

be explained due to two different teaching formats required by the PETE program. For the Middle School Block, preservice physical educators were divided into small teaching teams (each team usually has two or three people), and the members in each teaching team need to collaboratively teach a lesson. The amount of classes that they need to teach depends on the number of people in the teaching team. For the Secondary School Block, preservice physical educators were required to teach a class independently. Therefore, preservice physical educators in the Secondary School Block spent less time in preparing and reviewing the lesson due to the accumulated teaching experience. While preservice physical educators in the Secondary School Block experienced more stress than preservice physical educators in the Middle School Block due to the larger amount of teaching load. Previous studies have indicated that working load is a potential factor contributing to teachers' stress (Chan et al. 2010; Marsh, 2005; Paulse, 2005; Shernoff et al., 2011; Sprenger, 2011).

On the other hand, preservice physical educators' teaching effectiveness in the Secondary School Block is greater than preservice physical educators' teaching effectiveness in the Middle School Block as the average value of TLT in the Secondary School Block is greater than TLT in the Middle School Block. Differences in teaching experience could explain this as many research studies have indicated that the more teaching experience that a teacher possessed, the lower the level of stress he/she experienced (Abirami, 2012; Fisher, 2011; Wang & Zhang, 2007). In the current study, professional blocks are arranged hierarchically; preservice physical educators have to complete the Middle School Block courses in order to advance to the Secondary School Block. In addition, both professional blocks have a practice teaching requirement, which means that preservice physical educators in the Secondary

School Block have more teaching experience than preservice physical educators in the Middle School Block within the PETE program. Furthermore, eight out of 11 preservice physical educators in the Secondary School Block reported that they have additional teaching experience outside the campus, while only 3 out of 14 preservice physical educators in the Middle School Block indicated that they had teaching duties other than teaching load required by PETE program.

Gender

The third hypothesis was that male preservice physical educators' stress would not differ significantly from female preservice physical educators' stress. A non-significant difference in the stress levels with gender supports this hypothesis. This result is consistent with previous studies (Fisher, 2011; Wang & Zhang, 2007). However, research findings on stress by gender have been inconsistent, as some studies have indicated that male teachers experienced more stress than female teachers (Aftab & Khatoon, 2012) while other studies recorded female teachers experienced more stress than male teachers (Abirami, 2012; Greiner & Smith, 2009; Ravichandran & Rajendran, 2007).

Interesting, female preservice physical educators experienced more stress than male preservice physical educators when comparing the mean value of stress score. This difference can be explained due to the unique characteristic that female teachers possess in the work setting. Everaert and Wolf (2007) found that female teachers may experience more stress than their male counterparts when dealing with students' disruptive behavior. It is possible that those female preservice physical educators experienced relatively higher levels of stress than male preservice physical educators in the physical education class where management has

been considered as an important factor contributing to stress and anxiety. Furthermore, research has indicated that women are more socialized from birth to utilize emotion-focused coping strategies (Hammermeister & Burton, 2004). Female preservice physical educators may tend to use emotion-focused coping strategies when dealing with stress in the classroom setting. Zeidner (1995) found that emotion-focused coping strategies has been consistently related to high levels of anxiety and low levels of stress adaptation.

There is a limitation that needs to be addressed in the current study as there were only two female preservice physical educators in the Middle School Block and two female preservice physical educators in the Secondary School Block. Therefore, generalizations of this result are limited.

Familiarity with Sport

The fourth hypothesis was that the familiarity with specific sport is negatively correlated with stress levels for preservice physical educators. However, a non-significant correlation between stress and familiarity with specific sport does not support the hypothesis.

The content knowledge domain for physical education is not easily identified (Siedentop, 2002). Hoffman (1988) suggested that physical educators should have capabilities to teach a broad range of motor skills at an introductory level. However, preservice physical educators now are required to be equipped with knowledge in exercise science (i.e., motor learning, motor control, sport psychology, sport history, sport philosophy, exercise physiology, and biomechanics) in order to become an effective physical educator (Siedentop, 2002). There has been a debate concerning the content knowledge in physical education. As Hoffman (1988) stated

physical education professors almost instinctively assume that the logical undergraduate major for physical education students in a five-year model is the body of knowledge as manifested in an exercise science major. However, the subject matter taught in school physical education programs is not exercise physiology, biomechanics and sport history, but volleyball, gymnastics, swimming and diving. (pp.61-62)

National Association for Sport and Physical Education (NASPE, 2008) established a series of guidelines for initial physical education teachers, and Standard 2 states that “Physical education teacher candidates are physically educated individuals with the knowledge and skills necessary to demonstrate competent movement performance and health-enhancing fitness as delineated in NASPE’s K-12 Standards” (p. 1).

Solmon, Lee, and Hill (1991) conducted a study to investigate if the content knowledge possessed by physical education teachers could impact students’ learning. The results indicated that the low content knowledge teacher tended to use general observation and general positive reinforcement during the class. Low content knowledge teachers also lacked the expertise to analyze students’ performance and provide specific corrective feedback. On the other hand, the high content knowledge teacher actively interacted with students during practice and provided specific feedback to students when they were performing skills.

Solmon et al. (1991) concluded that teachers who had more content knowledge tended to teach more efficiently. However, the current study yielded different results. There are two plausible explanations for this non-significant correlation. First, preservice physical educators may lack experience in translating their expertise to students’ learning. Subject matter is an essential component of physical educators’ knowledge. After all, an effective instructor needs

to understand what is to be taught if he/she wants to help others to learn. The myriad tasks of teaching, such as selecting appropriate warm-up activities, offering general and specific feedback, providing skill demonstration, and checking students' understanding, all depend on the teachers' understanding of what it is that students are to learn. For a long time, researchers acknowledged subject matter and pedagogical knowledge as essential to effective teaching (Doyle, 1986). Then, Shulman's concept of PCK has been a powerful heuristic in understanding how teachers translate their understanding of the subject matter into classroom practice (Shempp, Manross, Tan, & Fincher, 1998).

According to Shulman (1987), PCK represents "the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction. Pedagogical content knowledge is the category most likely to distinguish the understanding of the content specialist from that of the pedagogue" (p.8). PCK is also defined as one's knowledge of how to teach specific content in specific contexts (Ward, 2012). According to Grossman (1990), PCK is very comprehensive, including four factors: 1) knowledge of students' perceptions of the content, 2) curriculum, 3) teaching strategies, and 4) purposes for teaching. Therefore, subject matter knowledge and PCK are two crucial components for effective teaching.

In the current study, although preservice physical educators took several PCK classes prior to practice teaching, whether they could successfully translate their expertise to assist students in learning is questionable. Research has indicated that preservice teachers might transfer their own misconceptions to their students, owing to having inaccurate and

inadequate knowledge (Hashweh, 1987). Research has also indicated that subject matter content knowledge had no effect on PCK (Mapolelo, 1999). In other words, an individual who is good at a specific sport is not necessary to guarantee he/she to become an effective physical educator. After all, teaching physical education does not draw heavily on the kinesthetic appreciation of motor skills (Dodds, 1994).

Another possible explanation for the non-significant correlation between familiarity with sport and stress could be the curriculum model that preservice physical educators used during practice teaching. According to the responses from the interviews, most participants reported that Sport Education is a potential factor contributing to their high levels of stress. For the current study, videotaping occurred at the beginning of the semester, and it was a time when most preservice physical educators started getting used to the curriculum model. (i.e., explaining class rules, assigning different roles to students, assessing students' skills for different teams, monitoring students in acting different roles). Therefore, management plays a predominant role at the beginning of the semester to guarantee that the Sport Education curriculum model will run smoothly for the rest of the classes. Research has already indicated that classroom management is a predominating factor that contributes to preservice teachers' stress (Clement, 1999; Hart, 1987; McCormack, 2001; Sanderson, 2004).

Stress and Confidence

The fifth hypothesis was that confidence to teach specific sport is negatively correlated with stress for preservice physical educators. A non-significant correlation between confidence and stress levels in the present investigation does not support the previous hypothesis. According to Stevens (2005), self-confidence refers to an individual's expectation

of his or her ability to achieve a goal in a given situation, and is a very influential factor in ensuring that this individual's potential is realized. Self-confidence also refers to the strength of the belief or conviction but does not specify the level of perceived competence (Bandura, 1986). Multiple research studies have indicated a positive correlation between confidence and working performance (Alias & Hafir, 2009; Burton, 2004; Compie & Postlewaite, 1994; Feltz, 1988). However, the current study yielded a different result. One plausible explanation is the timing when preservice physical educators were asked to indicate their levels of confidence. In the current study, preservice physical educators were required to complete the demographic questionnaire six weeks prior to practice teaching. However, preservice physical educators' confidence levels may change after taking a series of PCK classes. As mentioned before, PCK classes are designed to assist preservice physical educators in gaining the knowledge regarding how to teach physical education classes. Preservice physical educators' perceived competence may potentially increase as they gain the knowledge from PCK classes. As the results shown from interview responses, two preservice physical educators felt "confident" before the teaching. Therefore, preservice physical educators may have high levels of confidence even though many research studies have indicated that preservice teaching is a stressful event.

Stress and Readiness

The sixth hypothesis was that teach this lesson is negatively correlated with stress levels for preservice physical educators. A significant, negative correlation between readiness and stress levels supports the previous hypothesis. Research has indicated that negative correlation between readiness and stress levels (Fatkin & Patton, 2008), and the results of the

current study were consistent with previous research. Teachers have several responsibilities in the classroom as they are supposed to be competent in planning lesson, managing classroom, and fostering professional and personal qualities (Mehmetlioglu, 2010). Research has indicated that classroom management is a predominant factor contributing to preservice teachers' high stress levels. In the current study, students who obtained a high score on TSS indicated that classroom management was the stressor during practice teaching. In other words, preservice physical educators lack classroom management skills to effectively manage the class, which could be one of the explanations of preservice physical educators' low readiness prior to teaching. On the other hand, preservice teachers lack PCK to translate their expertise to the specific context because they do not have much real teaching experience (Smithey, 2008). According to Smithey (2008), preservice teachers need to go through three steps in forming PCK. Initially, the knowledge regarding connecting subject matter and pedagogy might be in pieces, this is what Smithey (2008) called PCK readiness. Then, PCK readiness gradually becomes more well-developed PCK. Finally, teachers are able to use integrated PCK as they teach in the class. It is possible that those high-stress preservice physical educators have low levels of PCK readiness because they do not have many opportunities to practice skills by connecting subject matter and pedagogy.

Stress and Self-Efficacy

The seventh hypothesis was that the self-efficacy is negatively correlated with preservice physical educators' stress levels. A significant, negative correlation between self-efficacy and stress levels supports this previous hypothesis. Self-efficacy refers to individuals' beliefs about their capabilities to perform a particular course of action successfully (Bandura, 1997).

In the current study, self-efficacy refers to preservice teachers' beliefs about their capabilities to teach physical education lessons during practice teaching. According to the results presented by the current study, preservice physical educators who had higher levels of self-efficacy experienced lower levels of stress, whereas teachers with greater stress levels had lower self-efficacy. This result was consistent with previous studies (Betoret, 2006; Hanif, 2004; Klassen & Chiu, 2010; Schwarzer, 1999). Klassen and Chiu (2010) conducted a study to investigate the relationships among teachers' perceived self-efficacy, job stress, and job satisfaction. The results indicated that teachers with greater classroom stress had lower self-efficacy and lower job satisfaction. Hanif (2004) also found that stress may affect teachers' belief system. It is concluded that teacher stress has negative significant correlation with job performance and self-efficacy. In the current study, high-stress preservice physical educators expressed their concerns during practice teaching as they reported several stressors during the interview, which may potentially undermine their belief about their capabilities to successfully teach a physical education lesson.

Conclusion

This study showed that there was a significant negative correlation between preservice physical educators' stress and teaching effectiveness. According to responses from the interview, curriculum model, classroom management, and noise were frequently reported stressors during practice teaching.

Research has shown that preservice physical educators' stress in the Middle School Block was not significantly different with preservice physical educators' stress in the Secondary School Block. Three plausible explanations could be: 1) preservice physical

educators teach physical education classes in the same highly structured environment; 2) preservice physical educators from two professional blocks have some similar demographic variables; 3) the results mixed when participants were asked which teaching format is more stressful.

Research has also indicated that familiarity with specific sport was not correlated with preservice physical educators' stress. Two plausible explanations were present: a) preservice physical educators may lack PCK knowledge in translating their expertise into the specific context; b) videotaping occurred at the beginning of the semester when preservice physical educators were adapting to curriculum model. Management plays a predominant role at the beginning of the semester.

The present research has indicated a non-significant correlation between confidence and preservice physical educators' stress. One plausible explanation could be the time when preservice physical educators were asked to indicate their confidence levels. Participants' confidence levels may change prior to practice teaching.

Other findings from the current study were: 1) male preservice physical educators' stress was not significantly different with female preservice physical educators' stress. 2) There was a negative significant difference between readiness and preservice physical educators' stress. 3) There was a negative significant difference between self-efficacy and preservice physical educators' stress.

Implications

The primary purpose of the current study was to investigate the relationship between preservice physical educators' stress and teaching effectiveness. The results indicated that

preservice physical educators' stress was negatively correlated with teaching effectiveness. In addition, a variety of stressors were reported by preservice physical educators. In order to improve teaching effectiveness, preservice physical educators should be trained how to deal with potential stressors prior to practice teaching. For instance, PETE programs should emphasize the importance of PCK. PCK is an essential component for effective teaching. The development of PCK was viewed as a complex interplay between subject matter knowledge, teaching and learning, and context (Van Driel & Berry, 2010). According to Van Driel and Berry (2010), "PCK can be promoted by addressing both preservice teachers' subject matter knowledge and their educational beliefs, in combination with providing them with opportunities to gain teaching experience, and in particular, to reflect on these experiences" (p.659). Justi and Van Driel (2005) also found that reflective activities (i.e., writing reports and sharing experience in collective meetings) could promote PCK development.

Classroom management is also an issue that needs to be addressed. After all, the ability of teachers to manage classrooms and cope with students' behavior is critical to positive educational outcomes. Oliver and Reschly (2007) suggested three scenarios to assist preservice teachers in improving their classroom management skills. First, teacher preparation program should provide preservice teachers with coursework and guided practice with feedback on instructional approaches to classroom management. Second, teacher preparation program also should create a positive classroom context to assist preservice teachers in facing a variety of challenges. "Effective classroom management requires a comprehensive approach, including structuring the school and classroom environment, employing active supervision of student engagement, implementing classroom rules and

routines, enacting procedures to encourage appropriate behavior, using behavior reduction strategies, and collecting and using data to monitor student behavior and modifying classroom management procedures as needed” (p.13). Third, ongoing professional development should be established to assist preservice teachers with creating school-wide behavior systems. These approaches will ensure that preservice physical educators acquire the knowledge and skills necessary to an effective classroom, thus reducing students’ off-task behavior, preventing disruptive behavior, and maximizing teaching effectiveness.

Assisting preservice teachers in understanding curriculum model is also an important process prior to practice teaching. A series of workshops or modified teaching opportunities (i.e., peer teaching) should be given to preservice physical educators to grasp a basic understanding toward the curriculum model that they need to use in a real context. In addition, since attendance is a critical component when implementing curriculum models, it is essential for preservice physical educators to create alternative lesson plans in case low enrollment at the beginning of the semester. Also, enough space or appropriate timeframe for each physical education class should be established to avoid potentially excessive students’ off-task behavior.

A variety of stress relieving techniques should be introduced in the PETE program to assist preservice teachers if they experiencing high levels of stress during practice teaching. For example, Robinson, Segal, Segal, and Smith (2013) offered several stress relieving techniques that can be used on teachers: 1) Breathing Meditation: this technique primarily focuses on full and deep breathing. 2) Progressive Muscle Relaxation: this technique requires individual systematically tense and relax different muscle groups in the body. 3) Guided

Imagery: this method requires individual to employ senses in the area of visual, taste, touch, smell, and sound. 4) Yoga and Taichi: these two activities can effectively relieve individuals' high levels of stress. Unfortunately, only three preservice physical educators who experienced high level of stress reported that they would perform physical activity to alleviate their stress. Future studies are needed to investigate if those techniques are useful in relieving preservice physical educators' high stress, thus improving teaching effectiveness during practice teaching.

It should be noted that the PETE program in the participating institution has several teaching requirements. There are five Professional Blocks of classes (Curriculum & Instruction Block, Elementary School Block, Middle School Block, Secondary School Block, and Student Teaching Block) currently in this PETE program, and only the Curriculum & Instruction Block does not have teaching requirements. Due to the heavy teaching load, it is possible that preservice physical educators in this PETE program experience high levels of stress than other PETE programs. Future studies are needed to investigate the following areas in order to better examine the relationship between preservice physical educators' stress and their teaching effectiveness: 1) Is preservice physical educators' stress associated with the structure of the PETE program? 2) Do preservice physical educators in PETE programs with heavy teaching requirements experience less stress when they teaching in the real world? 3) Do preservice physical educators in the PETE program with relatively light teaching requirements experience more stress when they teaching in the real world?

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Background Information

4) Please fill out the form below:

Teach/Coach Experience (e.g., boy soccer, girl basketball, Kaleidoscope, etc.)	Age of Student Populations	Length of Time (e.g., days, weeks, semester, etc.)	Role (e.g., Camp counselor, Youth Athletic Coach, Teacher Aide, Sport Lessons, Community Service, etc.)
1			
2			
3			
4			

A) 1 B) 2 C) 3 D) 4 E) 5
Very low very high

Teacher Stress Scale

Direction: Please complete the following questions prior to your BIP teaching.

- Please circle the most appropriate number for each item. 1. Not at all, 5. Very much so
Please treat your BIP placement as your “job” when answering the following questions.

1. I can predict what will be expected of me in my work tomorrow.
1 2 3 4 5
2. I am unclear what the scope and responsibilities of my job are.
1 2 3 4 5
3. I am uncertain what the criteria for evaluating my performance actually are.
1 2 3 4 5
4. I received enough information to carry out my job effectively.
1 2 3 4 5
5. When asked, I am able to tell someone exactly what the demands of my job are.
1 2 3 4 5
6. I feel that my job interferes with my family life.
1 2 3 4 5
7. I feel constant pressure from others to improve the quality of my work.
1 2 3 4 5
8. I find that I have extra work beyond what should normally be expected of me.
1 2 3 4 5
9. The criteria of performance for my job are too high.
1 2 3 4 5
10. I am given too much responsibility without adequate authority to carry it out.
1 2 3 4 5
11. The teacher training I received was inadequate to enable me to perform my job effectively.
1 2 3 4 5

12. I'm prepared to carry out all the school assignments I receive.
1 2 3 4 5
13. I often feel that others have to help me if I am to get the job done properly.
1 2 3 4 5
14. I'm able to quickly adapt to the changing pressures and situations at work.
1 2 3 4 5
15. My fellow faculty members feel that I am capable of performing my job well.
1 2 3 4 5
16. All in all, I would say that I am extremely satisfied with my job.
1 2 3 4 5
17. My job is extremely important in comparison to other interests in my life.
1 2 3 4 5
18. Knowing what I know now, if I had to decide all over again whether to take this job, I would definitely do so.
1 2 3 4 5
19. In general, my job measures up extremely well with the sort of job I wanted before I took it.
1 2 3 4 5
20. If a good friend told me that (s)he was interested in taking a job here, I would have serious reservations about recommending it.
1 2 3 4 5
21. I have trouble getting to sleep or staying asleep.
1 2 3 4 5
22. I worry a great deal about work.
1 2 3 4 5
23. I am troubled by headaches at work.
1 2 3 4 5
24. I experience stomach upsets.
1 2 3 4 5

Appendix C

West Virginia University Teaching Evaluation System

Student behavior	Definition	examples
Motor Appropriate	The student is engaged in a subject matter motor activity in such a way as to produce to a high degree of success.	Students are performing dribbling correctly in basketball class.
Cognitive	The student is appropriately involved in a cognitive, subject matter task.	Students are listening teacher's instruction during the class, or watching teacher's demonstration of specific skill.
Motor Supporting	The student is engaged in a subject matter motor activity the purpose of which is to assist others to learn or perform the activity.	Spotting in weight training class, or feeding the ball to peers who is practicing shooting.
On Task Management	The student is appropriately engaged in carrying out an assigned non-subject-matter task.	Moving to the next task under the instruction, helping to place equipment, etc.
Interim	The student is engaged in a non-instructional aspect of an ongoing activity.	Retrieving balls, fixing equipment, or changing the side of court.
Motor Inappropriate	The student is engaged in a subject matter motor activity but the task is either too difficult for the individual's capabilities or is so easy that practicing it could not contribute to lesson goals.	Student shooting the basketball with elbows not tucked in.
Off Task	The student is either not engaged in an activity in which he or she should be engaged, or is engaged in an activity other than the one in which he or she should be engaged	Student is talking with others when teacher giving students demonstration.
Waiting	The student has completed a task and is awaiting the next instruction or to respond.	Waiting for the next practice or waiting for the teacher's next instruction.

Appendix D

Videotape Recording Consent Form

Dear Students:

You are taking physical education class in our 5-week BIP program. Your instructor agreed to participate in a research project on preservice physical educators' stress and instructional effectiveness. One of physical education classes during first two-weeks of BIP classes will be videotaped in order to determine your teacher's instructional effectiveness.

The data collected in this project will be kept as confidential as legally possible as the recorded event will be reviewed by investigator for research purposes only. All data will be coded and will not be associated with your name. Your participation in the research component of this project is completely voluntary and there is no penalty if you choose not to participate. Also, it will not affect your class standing. However, we would like to encourage your participation and assistance in conducting this important research on preservice teacher stress.

Please sign below if you consent for videotape recording

Name

Date

Cover Letter

Dear participants:

You are invited to participate in a research project on preservice physical educators' stress and instructional effectiveness. This project is primarily being conducted by Jingyang Huang, a graduate student at West Virginia University in the College of Physical Activity and Sport Sciences. For my dissertation, I am interested in the stress levels and instructional effectiveness of pre-service physical education majors at West Virginia University.

If you choose to participate, your first task will be to complete a consent form and then a short demographic questionnaire about your background. This will take approximately 10 minutes. Then, you will need to complete a Teacher Stress Scale (approximately 8 minutes) prior to the videotaping of one of the classes that you teach during the first two weeks of your BIP placement. I will be selecting approximately 10 students to see if they would be willing to participate in a follow-up interview following the videotaped teach.

The data collected in this project will be kept as confidential as legally possible. All data will be coded and will not be associated with your name. You must be 18 years of age or older to participate. I will not ask any information that should lead back to your identity as a participant.

Your participation in the research component of this project is completely voluntary and there is no penalty if you choose not to participate. Also, it will not affect your class standing. However, we would like to encourage your participation and assistance in conducting this important research on pre-service teacher stress.

West Virginia University's Institutional Review Board acknowledgement of this project is on file.

We hope that you will participate in this research project. The principal investigator of this study is Dr. Housner, he is a professor of college of Physical Activity and Sport Sciences at West Virginia University. If you have any questions regarding the research, please contact with Jingyang Huang or Dr. Housner by e-mail at Jhuang4@mix.wvu.edu or lynn.housner@mail.wvu.edu

Thank you for your time and help with this project.

Sincerely,

Jingyang Huang

College of Physical Activity & Sport Sciences

Appendix F

CONSENT FORM

I, _____, agree to participate in the project called “Preservice Physical Educators’ Stress and Instructional Effectiveness,” and consent to the videotape recording of a class during my practice teaching. I grant permission to Jingyang Huang, the investigator of Preservice Physical Educators’ Stress and Instructional Effectiveness, to analyze various students’ behaviors in the videotaped class. The videotape will be the property of the Preservice Physical Educators’ Stress and Instructional Effectiveness program. I understand that I will not receive compensation for the videotaping. I understand that the videotape is not intended to be used in any way that would be slanderous or detrimental to anyone and only used for research purposes.

Signature _____

Date _____