SELF-EFFICACY AMONG SPECIAL EDUCATION TEACHERS WHO TEACH STUDENTS DIAGNOSED WITH AUTISM SPECTRUM DISORDER

by

Pamella Tracy Hosley

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this quantitative study is to determine the relationship between perceived self-efficacy and work engagement among teachers of students diagnosed with autism spectrum disorder (ASD). Self-Efficacy data will be gathered using the Ohio version of the Teachers' Sense of Efficacy Scales (TSES-T) and the student engagement, classroom management and the instructional strategies sub-scales. Work engagement will be evaluated using the Utrecht Work Engagement Total Scale. Participants will be 66 special education teachers who teach students diagnosed with ASD. A bivariate correlational design employing a Pearson correlation analysis was used to determine if there is a significant relationship between work engagement and perceived self-efficacy as measured by the TSES-T subscales consisting of; instructional strategies, classroom management, and student engagement, among special education teachers who teach students with ASD. The results revealed that special education teachers believed that they have the ability to cope with teaching ASD students (self-efficacy) and that they have significant influence on the workplace environment (the agentic aspect of social cognitive theory).

Keywords: autism spectrum disorder, self-efficacy, work engagement, Likert scale

Dedication

This work is dedicated to God with him all things are possible, and to my husband Thomas who deserves this as much as I do. Your patience knows no boundaries and your love is infinite. Also, to my children, Thomas Jr., Tramaine Ethan, Jadai, and Janai, without your love and support I would not have been able to accomplish this dream. To my mama Karen, who has always been my cheerleader to the very end, what would I have done without you always cheering in my ear "You Can Do This". To Theodora Banks my sister in love, thank you for the nights of editing what you did not quite understand. To Dr. Ana Carmona my saving grace. To Dr. Mirian Ferrer for your love and support throughout this journey. Finally, to my friend Jennifer Henderson-Rudling, we have weathered the storm together and made it. I could not have done it without those phone calls. God Bless. I love you all and thank you for being a part of my journey.

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List of Abbreviations

Autism Spectrum Disorder (ASD)

Centers for Disease Control and Prevention (CDC)

General adaptation syndrome (GAS)

Individuals with Disabilities Education Act (IDEA)

Instructional Strategies Subscale (TSES-TS)

Oldenburg Burnout Inventory (OLBI)

Statistical Package for the Social Sciences (SPSS)

Teacher Sense of Efficacy Scale: Teacher version (TSES-T)

Teacher Sense of Efficacy Scale: Classroom Management Sub-scale (TSES-CM)

Teacher Sense of Efficacy Scale: Instructional Strategies Sub-scale (TSES-TS)

Teacher Sense of Efficacy Scale: Student Engagement Sub-scale (TSES-SE)

Utrecht Work Engagement Scale (UWES)

CHAPTER ONE: INTRODUCTION

Overview

This chapter begins by presenting a brief background about self-efficacy in the classroom and work engagement among special education teachers of students with ASD. Next is a description of the historical, social, and theoretical contexts. In the final analysis, a discussion will follow about the problem statement along with the study purpose and significance. Following a brief overview of all sections, the research questions and associated hypotheses as well as the definitions of the terms used in this study will also be provided.

Background

Social cognitive theorist Albert Bandura once said, “In order to succeed, people need a sense of self-efficacy, to struggle together with resilience to meet the inevitable obstacles and inequities of life” (1977). Every day, children are born into this world with disabilities, and special education teachers are tasked with educating students with special needs. Autism spectrum disorder (ASD) is a prevalent disorder that is on the rise in the United States. According to the Centers for Disease Control (CDC), 1 in 68 births results in autism, and more than 3.5 million live with ASD (2014). Furthermore, the prevalence of autism among children in the United States increased by 119.4% from 1:150 in 2000 compared to 1:68 in 2010, and the prevalence continues to increase by 6–15% biannually (CDC, 2014).

Perceived self-efficacy is the judgments people make regarding their ability to organize and carry out sets of actions (Bandura 1986). Given the positive relationship between perceived self-efficacy and work engagement, the question arises of whether these relationships exist among special education teachers of students diagnosed with ASD. Furthermore, Kahn (1990) believes engagement in work reflects that organized employees are personally engaged and more productive because of it. To help aid in this process, Bandura

(2000) suggests the use of more pragmatic training aimed at enhancing four sources of information that are thought to contribute to work engagement and to developing teacher efficacy: First, mastery experience is considered the most powerful source of efficacy information. It reflects that people have succeeded in the past and will continue to do so in the future. If people fail, their failures will decrease their self-efficacy and their future work engagement will be low. Second, through vicarious experience, others model the skills in question, and the observer's identification with the performer will moderate the effect of the observer's self-efficacy; the more closely the observer sees an increase in work engagement, the stronger the impact on self-efficacy. In contrast, if the performer is inept, the efficacy expectation declines. Third, social persuasion entails feedback from a supervisor or person of authority. This alone cannot increase self-efficacy and work engagement skills, but it can contribute to successful performance, which increases self-efficacy, which can increase work engagement. However, social persuasion can in some cases cause setbacks that can lead to self-doubt; the key to social persuasion is the credibility, trustworthiness, and expertise of the persuader. Finally, the level of arousal adds to the feeling of mastery versus incompetence, and attribution plays a key role: If success is attributed to internal causes such as ability, self-efficacy is enhanced, whereas if success is attributed to chance, self-efficacy more than likely will not be strengthened (Bandura, 2000, Chu & Garcia, 2014, Kahn,1990)

Background Historical Context

Bandura focuses on four major sources of information: first, performance accomplishments in which the source of efficacy information is especially influential because it is being based on personal mastery experiences. Once strong efficacy is established through repeated successes, the negative impact of failures decreases. After perceived self-efficacy is

enhanced in one or some areas, it begins to migrate to other situations in which it had previously been considered low. Second, vicarious experience in which seeing others perform threatening activities without adverse consequences can generate expectations in observers. Vicarious experience relies on inferences from social comparisons; in most cases it is considered a less dependable source of information pertaining to one's capabilities than direct personal observations. Third, verbal persuasion is used to influence human behavior because of its ready availability (Bandura, 1977; Howlett & Nawas, 1971). Finally, emotional arousal is a source of information because high arousal usually decreases performance; people tend to believe they will succeed if they experience positive arousal rather than tense, visceral agitation. In general, emotional arousal can affect self-efficacy, which in turn affects work engagement (Bandura, 1977).

Bandura (1997) determined that there were also positive relationships between self-efficacy, work engagement, and personal awareness. The understanding is instinctive, and Bandura's social cognitive theory made it clear that people have control over their actions; there are reciprocal relationships between a person's cognition, behavior, and environment (Bandura, 1997). Understanding life and self-efficacy gives rise to a new foundation and fulfillment in learning to believe in oneself to accomplish tasks. Bandura stated:

> Among the mechanisms of human agency, none is more central or pervasive than belief of personal efficacy (Bandura, 1997). This core belief is the foundation of human agency. Unless people believe they can produce desired effects by their actions, they have little incentive to act, or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators; they are rooted in the core belief that one has the power to effect changes by one's actions. (p. 170).

According to Bandura, to be a human agent one must be influential in one's functioning and life circumstances. In other words, people are considered self-organizers, proactive, self-regulating, and self-reflecting, and personal influence is a part of the causal structure. There are four core properties of human agency. First is intentionality, in which people form intentions including actions, plans, and strategies. Second is forethought, which involves people establishing goals and anticipating likely outcomes to help guide and motivate their future efforts. Third is self-reactiveness: People are self-regulators, planners, and forward thinkers, and they also can construct appropriate courses of actions and execute them. Finally, is self- reflectiveness: People are considered agents of action, self-examiners of their own actions who reflect on their own personal efficacy (Bandura, 2001).

Social Context

Individuals with high perceived self-efficacy are known to put high energy into their work; this leads to positive effects, and they display longer engagement in tasks. Along with this comes a self-motivating mechanism that helps mobilize efforts and persists overtime (Ugwu & Onyishi, 2017). Tschannen-Moran and Woolfolk-Hoy, (2001) identified three dimensions of teacher efficacy: instructional strategies, student engagement, and classroom management. Instructional strategies directly influence instructional practices; student engagement centered on the aspect of student achievement that self-efficacy is fundamental for student success. Finally, the relationship between classroom management, self-efficacy and work engagement have been investigated thoroughly. According to Dicke et al., (2014) results are inconsistent, and the authors believe the inconsistences related to how individuals face drawbacks and how they judge their own behavior.

Theoretical Context

The theoretical framework for this study is Bandura's social learning theory, later renamed social cognitive theory (1977). Bandura believed that people process and synthesize feedback information from sequences of events over intervals and circumstances. Bandura also believed that cognitive processes play a prominent part in acquiring and retaining new behavioral patterns. In the theory, detailed observations of people allow for forming conceptions of how behavior patterns develop and become guides for action (Bandura, 1971). In comparison, Ng and Lucianetti (2015) believed that self-efficacy coupled with social cognitive theory determine behavioral intensity and that individuals who exhibit anxiety and fear while performing their work are unlikely to experience any increase in self-efficacy. Decreasing work engagement is mainly related to negative emotions (Ng & Lucianetti, 2015)

Klassen, Tze, Betts, and Gordon (2011) identified six studies that investigated Bandura's (1997) four categories of self-efficacy to determine their influence on teacher efficacy, and the studies show broad gaps regarding literature and the importance of teacher efficacy for teachers (Bandura, 1997; Cheung, 2008). Bandura (1997) has determined many factors that relate to teacher efficacy including content knowledge, gender, and professional experience, and Bruce and Ross (2008) found that teacher self-efficacy included classroom management, student engagement, and instructional strategies.

In conclusion, it is reasonable to assert that self-efficacy and work engagement have a lasting impact on how teachers perform their job. Leaders should evaluate and assess instructional practices and professional development to determine how best to help teachers who have become weary of their work and show less self-efficacy, which ultimately affects work engagement (Alessandri et al., 2015; Líbano et al., 2012).

Problem Statement

Research has shown teacher perceived self-efficacy influences student outcomes (Kelm & McIntosh, 2012; Kilday, Lenser, & Miller, 2016; Zee & Koomen 2016), including learning, and achievement (Chang, 2015; Rashidi & Moghadam, 2014). Adequate preparation of special education teachers involves teaching them to develop and implement interventions and services to meet students' educational needs.

There is limited empirical evidence in the literature regarding perceived self-efficacy in special education teachers, but this aspect of self-efficacy is important when addressing the established correlations between perceived teaching efficacy and student learning outcomes (Chu & Garcia, 2014; O'Neill & Stephenson, 2012; Thomas, 2013). First, studies have shown that special education students' perceptions of instructional efficacy can vary based on disability levels in the classroom (Chu & Garcia, 2014; Thomas, 2013). Second, research in teaching efficacy shows that pre-service teachers' perceptions anticipate their readiness and preparation more so than in active teachers (Chu & Garcia, 2014; Thomas, 2013). Finally, past research has centered on the general education teacher population, with less focus on special education teachers (Chu & Garcia, 2014; Thomas, 2013). These three findings indicate a gap in the current research regarding the special education teacher population (Chu & Garcia, 2014; Thomas, 2013), but the current body of literature provides a foundation for understanding of perceived self-efficacy and some of its influences. According to Reeves, Umbreit, Ferro, and Liaupsin (2013), 31% of students diagnosed with ASD receive academic services in general education settings; although many have cognitive ability, most struggle and are at risk for developing behavioral problems because of their inabilities to socially interact.

These problems cause undue stress for the general education teachers, which may decrease their perceived self-efficacy (Leyser, Zeiger, & Romi, 2011; Reeves et al., 2013).

Purpose Statement

The primary purpose of this study is to investigate the relationship between perceived self-efficacy and work engagement in special education teachers who teach students with ASD. There will be additional investigations of any connections between this relationship and teachers' instructional strategies and classroom management and between this relationship and student engagement. A bivariate correlational research survey design will be used to study the relationship (Gall et al., 2007). Survey data will be collected utilizing the Teachers' Sense of Efficacy Scale (TSES-T), a 12-question survey on which items are rated on a 9-point Likert-type scale (Tshannen-Moran & Hoy, 2001), and the Utrecht Work Engagement Scale (UWES), a 17-questionaire with items rated on a 7-point scale (Schaufeli & Bakker, 2003). The variables for this study include teacher perceived self-efficacy, "which carries out the judgments people make regarding their ability to organize and carry out sets of actions required in order to achieve expected types of performances has been repeatedly associated with positive teaching behaviors and student outcomes" (Bandura 1986, p. 391) and work engagement, referring to the voluntary allocation of personal resources to complete vocational tasks (Sulaiman & Zahoni, 2016). In participate in the study special education teachers will be both licensed and currently employed serving students in elementary, middle, or high schools in southeastern Tennessee.

Significance of the Study

Teachers' perceived self-efficacy has long been linked to student behavior and outcomes (Tschannen-Moran & Woolfok Hoy, 2001). Teachers with high self-efficacy are

open to new ideas and are willing to experiment with new methods in relation to work (Leyser et al., 2011, Paraskeva, Bouta, & Papagianni, 2008). This study will add to the growing body of knowledge regarding self-efficacy and work engagement in special education teachers. Through bivariate correlational research, this study will empirically address the hypothesis that teachers' self-efficacy is significantly related to work engagement. The findings of this study may also lay the groundwork for further research on work engagement and perceived self-efficacy with a focus on special education teachers who work with students diagnosed with ASD, a population that is often neglected (Carnahan et al., 2011; Ricketts, 2011; Whalon & Hart, 2011). Further, findings of this study may provide ideas for other researchers to explore the relationship between work engagement and perceived self-efficacy in special education teachers of students with other conditions such as Down's syndrome and Learning Impairment (Dolva, Gustavsson, Borell, & Hemmingsson, 2011), attention deficit hyperactivity disorder (Martin et al., 2014), or blindness (Hartmann, 2012).

Lastly, this study may assist education administrators in two ways: (a) by offering a better understanding of how the different constructs of perceived self-efficacy, such as classroom management, instructional strategies, and student engagement, relate to work engagement and (b) by providing insights for developing guidelines and protocols to help teachers achieve sufficient self-efficacy to maintain high work engagement.

Research Questions

The research questions for this study are:

RQ1: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived self-efficacy as measured by

Teachers' Sense of Efficacy Total Scale (TSES-T) among special education teachers who teach students diagnosed with ASD.

RQ2: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived instructional strategies self-efficacy as measured by Teachers' Sense of Efficacy Instructional Strategy Subscale (TSES-IS) among special education teachers who teach students diagnosed with ASD?

RQ3: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived classroom management self-efficacy as measured by Teachers' Sense of Efficacy Classroom Management Subscale (TSES-CM) among special education teachers who teach students diagnosed with ASD?

RQ4: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived student engagement self-efficacy as measured by Teachers' Sense of Efficacy Student Engagement Subscale (TSES-SE) among special education teachers who teach students diagnosed with ASD?

Definitions

1. **Autism spectrum disorder (ASD)** – "A neurodevelopmental condition characterized by early-onset difficulties in social communication and unusually restricted, repetitive behavior and interests." (Thompson, 2013, p. 1).
2. **Classroom management** – The wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during class (Tschannen-Moran & Hoy, 2001).

3. **Instructional strategies** – The range of techniques that teachers can adopt to meet their own learning objectives and those of education institutions and students (Tschannen-Moran & Hoy, 2001).
4. **Perceived self-efficacy** – to the judgments people make regarding their ability to organize and carry out sets of actions required in order to achieve expected types of performances" (Bandura 1986, p. 391).
5. **Special education** – A form of learning provided to students with exceptional needs such as learning disabilities or mental challenges (Farrell, 2009)
6. **Student engagement** –The degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to their motivation for learning and progressing in their education (Tschannen-Moran & Hoy, 2001)
7. **Work engagement** – A positive state of being that occurs when performing work tasks that are interesting, achievable, and meaningful; results in feelings of vitality, focus, and significance (Demerouti, Bakker & Fried 2013) and comprises three constructs: vigor, dedication, and absorption (Sulaiman & Zahoni, 2016).

CHAPTER TWO: LITERATURE REVIEW

This chapter contains a comprehensive overview of the literature related to the study topic and purpose. That purpose is to investigate the relationship between perceived self-efficacy and work engagement in special education teachers who teach students with ASD. The literature reviewed was published during the period 2014-2018, except for seminal works related to this study's theoretical framework. That framework is explored in the literature, then the discussion moves to ASD students, work engagement and burnout among teachers, then more specifically, how those factors affect teachers who teach students with ASD.

Theoretical Framework

Social Cognitive Theory

The theoretical framework that underpins the present study is social cognitive theory, as articulated by Bandura (1986). That theory posits that a significant portion of an individual's knowledge acquisition comes from his/her direct observation of other individuals in social settings and interactions. Bandura further expanded his perspective to that of agentic social cognitive theory (2001), in which the individual exerts control over his/her life by acting within social systems and when possible, actively engaging in the construction of those social systems.

The relevance of the theory to the current study is that work engagement, which is a phenomenon central to the present study, is primarily a social construct. The workplace is a social environment with its own rules and structured interactions, and the phenomenon of work engagement depends on both external factors (i.e. the workplace environment, the actions and attitudes of peers and leaders) and internal factors (i.e. a person's psychological makeup, attitudes, prior experiences) (Lorente, Salanova, Martínez, & Vera, 2014; Martin et al., 2014).

The attitudes and perceptions of teachers of students with ASD can be viewed through the perspective of social cognitive theory in that teachers experience job satisfaction, job engagement, and job burnout based on their social/workplace environment (Skaalvik & Skaalvik, 2007; 2014; 2017). How they react to that environment is a function of their social attitudes and perspectives; also, their sense of agency is a factor (Bandura, 2001). Those with a greater sense of agency in each social environment—in this case, the school workplace—will tend to suffer less burnout and have a greater sense of job satisfaction and engagement (Skaalvik & Skaalvik, 2007; 2014; 2017). This perspective informs the current study, in that the education of students with ASD is a nuanced and complicated endeavor and how effective teachers of such students are depending as much on their psychological makeup and attitudes as their talents and training (Accardo et al., 2017; Carnahan et al., 2011; Lee et al., 2011).

Self-efficacy in the context of social cognitive theory. Perceived **s**elf-efficacy, according to Bandura (1986), is an individual's belief in his/her ability to accomplish a task, perform a function, or achieve a goal. Perceived self-efficacy can increase an individual's likelihood of success in that regard (Bandura, 1986). It is an important element of the concept that self-efficacy operates independently of actual ability. A person who is otherwise quite capable of performing a task but has low self-efficacy may fail, while another person who is ostensibly not qualified to perform that task but has high perceived self-efficacy may succeed (Bandura, 1986). This is a critical concept for the present study, as ASD teachers' workplace engagement and job satisfaction are directly related to how well they fulfill their teaching roles, as well as how well they perceive their own abilities to do so (Accardo et al., 2017; Carnahan et al., 2011; Lee et al., 2011).

The agentic perspective of social cognitive theory also influences self-efficacy. If a teacher believes he/she has a significant influence on the social environment of the workplace, that belief can foster additional self-efficacy (Tseng & Kuo, 2014). For teachers of students with ASD, autonomy, or at least perceived autonomy, is a major element of workplace engagement (Lee et al., 2011). The challenges and stresses of teaching ASD students are best dealt with when the teacher believes that he/she has the ability to cope with them (self-efficacy), has learned those coping skills via interactions with others in the workplace, whether formal or informal (social cognitive theory), and believes he/she has an influence on the workplace environment (the agentic aspect of social cognitive theory) (Accardo et al., 2017; Carnahan et al., 2011).

Related Literature

General Education in Self-Efficacy

Kissau and Algozzine (2014) used mixed methods to determine teachers perceived self-efficacy while delivering teaching instruction using three teaching methods: face to face, online, and hybrid. The effect size consisted of one hundred seventeen participants who were given the Teachers' Sense of Efficacy Scale at the beginning of the semester and at the end to measure changes, and the authors found that all three modes of instructional delivery were effective. The significance of the study focused on course content, use of various teaching strategies, and classroom management. The results demonstrated that instructional delivery can be equally effective at increasing teacher candidate perceived self-efficacy, and most teachers were confident in their ability to teach. Results similarly showed that most teachers found face-to-face teaching to be more advantageous and it appeared to increase their perceived self-efficacy when working with the students (Kissau & Algozzine, 2015; Mahasneh, 2016). The relevance to

the current study is that teachers perceived self-efficacy may be increased by maximizing face-to-face interactions with students. Also, that factor may be particularly critical in ASD student education (Accardo et al., 2017; Carnahan et al., 2011; Lee et al., 2011).

Student engagement and teacher perceived self-efficacy. Research has found that perceived teacher efficacy impacts students' learning (Bandura, 1986, 1997; Moolenaar, Sleegers, & Daly, 2012). In academic settings, many researchers have documented the significant impact of teacher perceived efficacy on student involvement (Hopkins & Jackson, 2002; Kapoor & Tomas, 2016; Osterman, 2000). Perry and Steck (2015) determined the higher the level of perceived self-efficacy the more likely students are to be engaged in the learning process. This is thought to be the case due to cognitive strategies in a self-regulated learning environment (Perry & Steck, 2015). The significance for the present study is the implied premise that a teacher who sees better achievement on the part of his/her students will likely be better engaged with his/her work, as student achievement is a measure of teachers' success.

Perceived self-efficacy has well been represented in the field of educational research with the acknowledgement of its influence on teachers' and students' actions (Klassen & Tze, 2014). The emphasis being on an autonomy supportive classroom which centers lessons around opportunities that allow students the freedom to ask questions, share opinions and the choice of tasks of interests. According the researchers Ucar and Sungar (2017) it is during this process when students begin to show engagement. In fact, the causal effect of teacher perceived self-efficacy on student engagement is among one of the most important issues raised in research (Boz, Yerdelen-Damar, Aydemir, & Aydemir, 2016; Kapoor & Tomar, 2016; Khan, 2012; Ucar & Sungar, 2017; Yusuf, 2011).

Although not many studies have examined the classroom atmosphere as a driver of, student engagement schools' influence on academic perceived self-efficacy has shown significant connections. Shoulders and Krei (2015) determined the effectiveness of the teacher helps determine student engagement to achieve academically within the classroom. McMahon, Wernsman, and Rose (2009) believed that a greater sense of school belonging with an emphasis on effort showed that all students can learn through academic self-efficacy.

For teachers with a strong sense of perceived self-efficacy, being persistent when working with challenging students has been shown to influence behavioral outcomes (Skaalvik & Skaalvik, 2007). High levels of perceived self-efficacy enhance the rates of change in school environments, making them more conducive to learning. Teachers with high perceived self-efficacy tend to establish learning methods and instructional avenues that focus on students' individual growth and knowledge (Hinton, Flores, Burton, & Curtis, 2015). Research has shown that perceived self-efficacy can influence student achievement (Hines, 2008; Khan, 2012; Rashidi, & Moghadam, 2014), and thus, teacher perceived self-efficacy has an important role in students' education. However, it remains to be seen if perceived self-efficacy directly affects the classroom environment, and thus, this research line is the next area of focus.

Classroom environment and teacher perceived self-efficacy. Researchers believe that teachers with high perceived self-efficacy set the tone for high-quality classroom environments (Chacon, 2005; Zee & Koomen, 2016) by using new and inventive ideas in the classroom coupled with planning lessons that advance students' abilities. Also, researchers believe that teacher perceived self-efficacy influences not only pedagogical choices but the educational environment as well (Hinton et al., 2015).

According to Boz et al. (2016), the learning environment is an influencing factor on student achievement as well as student engagement. Learning is improved when teaching takes place amid positive perceptions of the learning environment learning improves (Kapoor & Tomar, 2016; Khan, 2012; Yusuf, 2011). Understanding the relationship between students' perceptions of classrooms, teachers' roles, and teacher perceived self-efficacy is imperative. Specifically, perceived self-efficacy mediates the relationship between students' learning environments and their academic achievement (Khan, 2012; Yusuf, 2011). Many researchers suggest a positive correlation between students' perceptions of how the classroom environment is structured and academic achievement is gained (Boz et al.; Cheung, 2015; Partin & Haney, 2012).

In elementary school settings, the classroom environment is particularly important because students of elementary age spend most of their days in one classroom. Well-defined, organized, and positive self-concepts help promote student engagement within the classroom environment (McMahon et al., 2009). McMahon et al. considered five dimensions essential to the classroom environment: satisfaction, cohesiveness, difficulty of academic tasks, competition with other students, and friction. In positive classroom environments, promoting academic achievement is the primary goal, but cohesiveness and low friction follow. Researchers believe that the schools that have used these dimensions to assess classroom environments have demonstrated that the environment is related to student engagement which leads to academic achievement (McMahon et al., 2009). As the present study examines teachers perceived self-efficacy and consequent work engagement, the intervening variable of student achievement is worth considering. The studies examined above show that teacher perceived self-efficacy leads to better student outcomes. In turn, it is worth considering if better student outcomes lead to

better work engagement on the part of teachers. That is suggested by the literature but has not been thoroughly examined: one of the reasons for the present study.

Instructional strategies within the classroom and teacher perceived self-efficacy. Shoulders and Krei (2015) determined perceived self-efficacy is directly linked to the influence teachers have on instructional practices. The level of perceived self-efficacy in a teacher determines the type of practice used to implement instruction. Teachers with high perceived self-efficacy tend to use more innovative instructional practices to achieve success (Shoulders & Krei, 2015). According to Allinder (1994) the attitude the teacher has about their own professional competence impact how instruction is taught within the classroom. Research determined teachers' sense of perceived self-efficacy is comprised of two factors: (a) general teaching efficacy which relates to the teacher's belief that the influence of the teacher enhances student learning, and (b) personal self-efficacy in which teachers believe in their own ability to affect student learning (Allinder, 1994).

Gibson and Dembo (1984) determined teachers who have a greater sense of perceived self-efficacy are more pragmatic about teaching students. Among these teacher variables are: (a) enthusiasm, (b) organization, (c) various strategies in materials and activities, (d) business like orientation when dealing with students, and (e) and developing high levels of clarity when teaching students. The use of these variables in daily instruction have an impact on academics within the classroom (Allinder, 1994). The relationship between perceived self-efficacy and instructional strategies is identified as being positively correlated in the academic process with student's achievement. Allinder (1994) determined the sense of perceived self-efficacy and instructional strategies are also beneficial when working with students with special needs in an inclusive setting.

Factors that affect general education teachers perceived self-efficacy. Hussein and Al-Qaryouti (2015) believe that teachers perceived self-efficacy has a positive impact on the education process because of the significant relationship between perceived self-efficacy and education outcomes within the classroom setting. General education teachers have taken on new roles in their classrooms because of the influx of students with disabilities. Furthermore, if general education teachers lack the skills and strategies necessary to help students, this decreased perceived self-efficacy could create negative attitudes toward inclusion (Glazzard, 2011). According to Worrell (2008),

> A general educator cannot be expected to be successful at teaching in an inclusive classroom without a solid foundation of knowledge about the students' disabilities, educational needs, accommodations, modifications, and the laws that affect both the children with disabilities and the teacher. (p. 45)

A high degree of planning and organization while working with special education students helps demonstrate high self-efficacy and shows teachers' willingness to try innovative methods to meet the students' needs (Hussien & Al-Qaryouti, 2015; Stein & Wang, 1988). Many authors concluded that teachers perceived self-efficacy in teaching students with special needs significantly impacted the education process within inclusive classrooms (Ahsan, Sharma & Deppeler, 2012; Hussien & Al-Quaryouti, 2015). It helps make the inclusion process more positive for both general and special education teachers (Hussien & Al-Quaryouti, 2015).

The effect of teachers perceived self-efficacy, as well as the need for it to be effective in the classroom, is well documented in the literature (Hussien & Al-Quaryouti, 2015). Teachers' perceived self-efficacy positively influences student outcomes, can help to create a more functional classroom environment, and can help them to create a more inclusive classroom. This

last concept, of an inclusive environment that accommodates special education students, is discussed in the next section.

Special Education

Special education and teacher perceived self-efficacy. Teaching involves complex, dynamic, and nonlinear problems, and teacher effectiveness largely depends on how teachers perceive themselves, their tasks, and their strategies for and possibilities of solving challenging problems. Teachers' capacity to teach depends on their abilities to self-organize, self-reflect, and self-regulate their behavior while teaching (Bray-Clark & Bates, 2003). Many studies have been produced evidence that shows perceived self-efficacy can contribute to teacher effectiveness in many ways (Bandura, 1991; Bray-Clark & Bates, 2003; Gibbs, 2002). First, positive perceived self-efficacy beliefs can increase with teachers' willingness to implement new skills learned during in-service training. Secondly, teachers with high perceived self-efficacy tend to explore higher-level thinking skills and alternate teaching methods and to experiment with different teaching materials to benefit students (Bandura, 1991; Bray-Clark & Bates, 2003; Gibbs, 2002). The findings of these studies inform the present study's purpose, which is to examine special education teachers perceived self-efficacy and how it affects their work engagement.

Allinder (1995) studied special educators and the role of perceived self-efficacy in teaching. He learned instructional practices using curriculum-based measurements identified high perceived self-efficacy which led to improved academic performance. Special educators with more perceived self-efficacy persist longer with challenging students and can teach more effective lessons (Ashton & Webb, 1986). Also, according to research, students are more receptive to warm, inviting environments that are conducive to learning (Ashton & Webb, 1986,

Gibson & Dembo, 1984). However, special education teachers with low perceived self-efficacy typically sabotage the learning environment with negativity, thus hindering learning. The effect size is .55 which indicates a medium range (Woolfolk, Rosoff & Hoy, 1990). Furthermore, in a study of 206 participants who took part in a study on relationships between special education and general education teachers' content knowledge, Flores, Patterson, Shippen, Hinton, and Franklin (2010) determined that both groups of teachers began with the same confidence levels and knowledge proficiency but that with higher grade levels, special education teachers showed less confidence and lower perceived self-efficacy. The effect size is .58 which indicates medium range. These studies suggest that while special education teachers are as competent and qualified as any others, their perceived self-efficacy may vary according to their assignments by grade level. The present study will examine teachers at the elementary, middle, and secondary school levels; a potential interesting finding will be the differences among those three participant cohorts.

Teachers' perceptions of their teaching skills can influence their perceived self-efficacy, which affects their effectiveness as teachers (Ruppar, Lancem Neeper, & Dalsen, 2016). Researchers determined when teachers set high standards for themselves and foster learning, learning is maximized (Baltaoglu, 2015). Teacher perceived self-efficacy includes the capacity to give positive verbal judgments (Baltaoglu, 2015; Bray-Clark & Bates, 2003: Gibbs, 2002).

Special education teaching is as much art as science. The research suggests that psychological factors such as perceived self-efficacy are significant determinants of how effective a special education teacher will be. This is particularly important for teachers of students with ASD, which is the topic of the next section.

ASD and perceived self-efficacy. According to a study conducted by the Centers for Disease Control and Prevention (CDC, 2014), 1 out of every 68 children is identified in the United States as having an autism spectrum disorder, a 29% increase over the findings from a 2012 CDC study. This increase has resulted in significant attention diverted towards the educational system in the United States to handle the prevalence of ASD and recommend strategies for addressing it.

According to the CDC (2014), ASD refers to developmental disorders that are reflected in deficits in social interaction and communication as well as repetitive and restricted activities, interests, and behaviors. Some symptoms and signs can typically be identified in children during their early development, but social skills deficits and atypical behavior patterns may not be recognizable until a child finds it difficult to meet life demands such as social interactions and education. It is important to note that at present, a diagnosis of ASD does not specifically mention cognitive deficits; findings from this literature review were that researchers identified cognitive deficits in terms of deficits related to executive and social thinking.

Although there is significant research on perceived self-efficacy among general education teachers, only three studies addressed perceived self-efficacy in the context of teachers working with students with ASD (Jennett et al., 2003; Ruble et al. 2011, 2013). Jennett et al. (2003) examined the relationship between teacher burnout and perceived self-efficacy in the context of special education involving ASD and found a relationship between higher teacher commitment to a teaching program and higher teacher perceived self-efficacy. The effect size was medium accounting for 13.1% of the variance. The researchers concluded that “teachers with a stronger commitment to or understanding of the underlying theoretical orientation of

their teaching approach have a greater sense of efficacy, particularly with respect to their own effect on students" (p. 590).

Ruble et al. (2011) focused on examining the sources of self-efficacy among 44 participating teacher who worked with students with ASD and found a relationship between teacher burnout and classroom management. The effect size is 0.4 which indicates it is medium size. In a different by study, Ruble et al. (2013) studied 47 teachers who participated using a newly developed instrument, the Autism Self-Efficacy Scale for Teachers, for measuring perceived self-efficacy among teachers of students with ASD, although their primary outcome was confirming the reliability of the instrument. The effect size was large between-groups (d = 1.5). The study provides an important background for understanding the need to conduct the study. A greater understanding of perceived self-efficacy among teachers and its relationship to teacher engagement resulted in recognizing factors that are essential for supporting teachers who work with students with ASD. The present study's results aided professional teacher training and development in addition to improving teachers' work engagement and perceived self-efficacy. A lack of research on this relationship would have resulted in less knowledge and possibly contributed to less perceived self-efficacy and work engagement among teachers of students with ASD (Ruble et al., 2013).

Many researchers (Gutstein & Whitney, 2002; Jennett et al., 2003; Ruble et al., 2011; Ruble et al., 2013) have noted social thinking deficits among individuals identified with ASD, including in emotional and social coordination, understanding the theory of mind, social referencing, co-regulation, and joint attention—components that can be classified in terms of relationships based on sharing experiences (Accardo, Finnegan, Gulkins, & Papay, 2017; Gutstein & Whitney, 2002; Jennett et al., 2003). Educating students identified with ASD is

affected not only by social thinking but also executive thinking, with the latter especially affecting these students' reading comprehension (Corona & Christodulu, 2017; Ricketts, 2011). Researchers Williamson, Carnahan, and Jacobs (2012) noted that students with ASD have problems combining existing experience and knowledge with new experiences and knowledge as well as retrieving stored information, both of which result from difficulties in executive functioning.

These challenges are important factors that affect students with ASD in the classroom. Teachers must devise and execute special strategies for educating students with ASD to develop appropriate learning goals for them, particularly during reading (Accardo et al., 2017; Carnahan et al., 2011); other researchers have noted this as well, finding that students with ASD have lower reading comprehension as well as challenges in information retrieval when they are guided to read quietly without the support of visual or auditory media (Accardo et al., 2017; Whalon & Hart, 2011). These findings highlight the need for special strategies on the part of teachers, which requires greater teacher perceived self-efficacy and work engagement. This is one of the reasons this study is relevant: students' special needs can affect teachers' work engagement, and the relationship between teacher engagement and teacher perceived self-efficacy has been largely unexamined in the existing literature on teachers of students with ASD (Accardo et al., 2017).

The implementation of No Child Left Behind and the Individuals with Education Disability Act, led to more special education teachers working alongside general education teachers in classrooms (Garderen, Scheuermann, Jackson, & Hampton, 2009), and perceived self-efficacy plays an influential role in helping special education teachers guide student achievement in collaborative settings. Both special and general education teachers' attitudes set

the tone for classrooms and help determine the outcomes of learning (Lee et al., 2011). Positive teacher attitudes are an important predictor of the successful education of children with disabilities, including students with ASD. Special education teachers' attitudes about teaching students with ASD have evolved positively over the years. Teachers are no longer considering these students unteachable but instead have introduced new worlds of opportunities for children with disabilities (Kanner, 1968). Rodriguez et al. (2012) conducted a study with 69 special education teachers to determine how teachers' attitudes have changed by collecting their perceptions and demands to plan for future support and training schemes. The results showed that teachers had predominantly positive expectations regarding educating students with ASD, their own abilities to influence their students' development, and positive relationships with students' families (Rodriguez et al., 2012). However, results also indicated that these findings had been possible because the necessary supports were in place to help special education teachers (Rodriguez et al., 2012). These factors are elements of work engagement, the outcome focus of the present study.

Engstrand and Roll-Pettersson (2014) found in a study that examined the relationship between preschool teachers' attitudes toward including students diagnosed with ASD and perceived self-efficacy that teachers showed positive attitudes toward these students; the authors studied a total of 21 teacher participants who mostly had favorable attitudes about including students with ASD in their classrooms (Engstrand & Roll-Pettersson 2014).

In another study, researchers Brock, Huber, Carter, Juarez, and Warren (2014) studied 456 participants who worked with ASD students with the goal of providing input to help practitioners with much needed data to help treat students diagnosed with ASD. Participants were asked to complete a 129-question web-based survey with four main topics: demographics,

evidence-based practices, training on these practices, and professional development (Brocket al., 2014), found that the participants were not highly confident in their ability to implement evidence-based practices. General and special education teachers also had different levels of interest in teaching students with ASD, and teachers and administrators viewed professional development and its benefits differently as well. Separately, geographic region was associated with teacher interest in professional development in different ways (Brock et al., 2014). In general, there are a lack of studies on qualitative concepts relating to the mindset and attitudes of special education teachers who work with ASD students (Engstrand & Roll-Pettersson, 2014). The literature suggests that teachers of ASD students may face unique challenges, different not only from general education teachers but also other special education teachers Rodriguez, Saldana & Moreno, 2011). There is strong evidence that perceived self-efficacy works differently for those teachers and may be less overall than that of other teachers (Artino, 2012). The present study attempts to determine if this is so, and whether their work engagement is affected as a result.

The lack of necessary knowledge and skills derived from preservice training can hinder teachers' attitudes about teaching students diagnosed with ASD in their classrooms (Engstrand & Roll-Pettersson, 2014). However, because limited perceived self-efficacy research pertains to special education teachers specifically, the subject of teaching students with ASD needs more studies with more participants (Engstrand & Roll-Pettersson, 2014).

Factors that Affect Special Education Teachers' Perceived Self-Efficacy

Special education teachers' training and beliefs about teaching students with disabilities are often questioned when teachers' perceived self-efficacy and experience are factored into the equation. Extenuating circumstances allow special education teachers to have different attitudes

toward inclusive education (Woolfson & Brady, 2009). Attitudes are conceptualized as stable constructs that comprise cognitive, affective, and behavioral components (Vaz et al., 2015), and special education teachers' attitudes about inclusion vary depending on the severity of students' disabilities; in the past, researchers believed that teaching disabled students increased positive attitudes (Brady & Woolfson, 2008). However, now it is determined that teaching students with disabilities can also bring about negative attitudes (Brady & Woolfson, 2008; Vaz et al., 2015; Woolfson & Brady, 2009), and perceived self-efficacy in special education teachers determines how comfortable these teachers are around students with disabilities and how willing they are to teach these students. Teacher perceived self-efficacy relates to teachers' feelings about their capacity to teach in a manner to facilitate learning. Moreover, special education teachers with high perceived self-efficacy are found to be more willing to take responsibility to meet the needs of students with special needs (Brady & Woolfson, 2008; Woolfson & Brady, 2009).

This review of literature has revealed that perceived self-efficacy has many roles in the field of education that pertain to students' academic success (Bandura, 1986, 1997, 2001; Duyar et al., 2013; Klassen, & Chiu, 2010; Tschannen-Moran & Woolfolk Hoy, 2001). In fact, many studies discussed suggest that perceived self-efficacy is a major influence on student engagement which leads to academic success (Bandura, 1997, 1986; Moolenaar, Sleegers, & Daly, 2012). Because of how perceived self-efficacy effects student achievement, programs to enhance teachers' self-efficacy have become widespread across many countries (Tompkins, 2013). The next part of the literature review will focus on another major theme, work engagement.

Work Engagement

Work engagement is defined as a concept of motivation related to voluntary resource allocation to expected tasks in the contexts of specific occupational roles (Christian, Garza, & Slaughter, 2011; Kirkpatrick & Johnson, 2014; Park & Gursoy, 2012), and when work engagement is high among educators, both educators and students benefit (Kirkpatrick & Johnson, 2014). Work engagement consists of two fundamental conceptual constructs, involvement and energy (Bakker et al., 2011; Tim et al., 2011) and three constructs of engagement: cognitive, emotional, and physical.

According to Runhaar, Sanders, and Konermann (2013), work engagement is a positive fulfilling work-related state of mind with three main characteristics: vigor, dedication, and absorption. Vigor is characterized by high energy and mental resilience while working and a willingness to work in the face of difficulties. Dedication is characterized by a sense of significance, enthusiasm, pride, inspiration, and challenge. Finally, absorption is characterized by being fully concentrated and happily engrossed in one's work to the point of having difficulty stopping (Park & Gursoy, 2012; Runhaar et al., 2013).

It is important to note that the measures for work engagement have been devised in order to examine engagement in general rather than specific settings. As such, it is important to conduct studies in specific settings, such as among teachers, especially when the setting is more specialized, such as in special education.

Current literature shows work engagement as being related to energy that results in behaviors that reflect engagement (Hoigaard, Giske, & Sundsli, 2012; Shuck et al., 2013). Engagement is the manifestation of forces related to motivation, but it is different from these forces in terms of the subsequent behaviors, such as the difference between work engagement

and work commitment; whereas work engagement is understood as the absorption in and attention shown to work-related activities, commitment is closer to an attitude toward work (Park & Gursoy, 2012; Shuck et al., 2013).

Also, work engagement represents positive work experience and attitudes (Park & Gursoy, 2012), and with the combination of work engagement and perceived self-efficacy, work productivity increases (Park & Gursoy, 2012; Yakin & Erdil, 2012). There are two theoretical accounts for work engagement: job demands and self-determination theory. Understanding the two together has proven successful in previous research (Timms & Brough, 2013; Yakin & Erdil, 2012). Previous studies determined that perceived self-efficacy is positively related to work engagement and to personal resources (Bakker, 2009; Xanthopoulou et al., 2007). In a study of 312 teachers, Timms and Brough (2013) administered two work environment surveys to determine teachers' work engagement and found compatibility between personal job resources and self-determination theory; the association also had a strong correlation with work engagement.

To be proactive in the workforce, work engagement coupled with perceived self-efficacy is essential (Park & Gursoy, 2012; Yakin & Erdil, 2012). Work engagement is significant, and teachers who are highly engaged in their jobs are more enthusiastic (Macey & Schneider 2008; May, Chan, Hodges & Avolio 2003). According to Khan (2016), it is very important for teachers to find their work pleasant, fulfilling, and challenging rather than stressful and demanding for them to remain engaged. Previous studies identified enthusiasm for the job as an attribute of both teachers and role models (Scheepers, Arah, Heineman, & Lombarts, 2015; Sutkin, Wagner, & Schiffer, 2008). However, despite the assumption that work engagement is

related to job performance in school systems, there is minimal empirical evidence in academic literature (Khan, 2016; Kim, Kolb, & Kim, 2012; Schaufeli, 2002).

Therefore, a need exists to study work engagement in school systems: Performance improvement depends on work engagement, which increases with perceived self-efficacy. According to Kim et al. (2012) and Robertson, Birch and Cooper (2012), there is a direct relationship between work engagement and performance. The two sets of authors collected data from 587 employees in the United States and conducted confirmatory factor analysis on the data, and the results showed that work engagement correlated significantly with job performance (Kim et al., 2012; Robertson et al., 2012). Engagement at work requires individuals not only to be present physically and completing mandatory tasks but also to be affectively and cognitively engaged, utilizing all their energies for the successful completion of those tasks (Hallberg & Schaufeli, 2006; Khan, 2016; Kim et al., 2012).

According to Xu and Thomas (2011), greater work engagement depends on many factors, and one is rewarding relationships at work that allow individuals to be authentic and experimental. Positive work relationships also decrease the amount of time wasted on interpersonal conflicts (Kahn, 1990; Khan, 2016), help individuals satisfy their needs for relatedness, and generate environments of support, which in turn buffers against burnout and stress (May et al., 2004; Raufelder et al., 2014). Similarly, greater work engagement is facilitated by a balance between work and personal life, which can reduce negative strains and stress resulting from emotional exhaustion and work overload (Halberg et al., 2007; Viotti et al., 2016). Another factor in the literature that is associated with high work engagement is alignment between personal and organizational values; this alignment allows employees to

work toward achieving organizational goals through identifying with shared values (Viotti et al., 2016).

Work engagement also takes place in environments of psychological safety (Bakker & Demerouti, 2007; Bakker, Demerouti, & Brummelhuis, 2012), which facilitate personal freedom of expression and authenticity without the fear of unwanted consequences; it is important that individuals be satisfied, enthusiastic, and involved with their work for work engagement to take place (Bakker & Demerouti, 2007; Park & Gursoy, 2012). Researchers have also discovered that the feeling of being useful and valuable in the work environment also affects personal satisfaction and a feeling of reward (Albrecht, 2010; Bakker & Demerouti, 2007; Xu & Thomas, 2011). If individuals believe there is alignment between their personal values and those of their organizations in environments of trust, there is a higher likelihood of work engagement (Chalofsky, 2003; Xu & Thomas, 2011).

Relevance to the present study. The reason to review studies on work engagement is that it is necessary to understand how it is defined in the literature and what factors affect it. The present study mandates that understanding to conduct the research properly. Work engagement takes place when the employee feels a sense of purpose, has a goal and feels that the work is helping to achieve it, is satisfied and enthusiastic, and perceives a positive environment. The present study considers these factors as they mediate the relationship between perceived self-efficacy and work engagement. The following section narrows the discussion of work engagement to that of teachers.

General and Special Education Teacher Work Engagement

There are many factors that contribute to special general education teachers' work engagement, including workload, student misbehavior, lack of professional recognition, lack of

resources, and poor colleague relations (Hoigaard et al., 2012; Raufelder, 2014; Skaalvik & Skaalvik, 2017; Viotti, 2016). Special and general education teachers' work engagement is significant for two reasons. First, research shows that the more engaged teachers are in their work, the better students perform, thus making them better prepared for the future. Secondly, the more teachers are engaged, the less likely they are to quit their jobs (Eldor & Shoshani, 2016; Menona & Athanasoula-Reppab, 2011); this is important because teacher retention is reaching an all-time low because of high workloads, stress, and poor working environments. Special and general education teachers are normally intrinsically motivated by their interactions with their students (Runhaar et al., 2013), but the job demands can place physical, psychological, social, and/or organizational pressure on teachers. These demands can cause problems with work engagement and hinder teachers' ability to work with students (Eldor & Shoshani, 2016; Runhaar et al., 2013).

Special and general education teachers can attain high work engagement with the availability of job resources such as job control, access to information, and support from supervisors (Eldor & Shoshani, 2016; Iyer, 2016; Runhaar et al., 2013, whereas the lack of positive and effective interpersonal relationships and resources can result in lower teacher engagement. In a study of 342 teachers, Runhaar et al. (2013) found support for lack of positive and effective interpersonal relationships assertion in teachers perceived that human resources were not being implemented well and therefore did not contribute to strengthening the relationships and interactions between the students and the teachers. This finding clearly suggests significant relationships between workplace resources, interpersonal relationships, and work engagement among teachers.

According to Li, Wang, Gao, and You (2015), a connection between administrators and teachers brings forth positive outcomes related to performance, intentions, and attitudes, which increases teachers' work engagement. Li et al. (2015) studied 352 middle school teachers in mainland China and suggested that if teachers are satisfied with their jobs, their work engagement increases; high teacher work engagement should then be positively related to job satisfaction. Li et al. (2015) also found that teachers with high perceived self-efficacy invested more energy, time, and motivation in their work. Also, teacher work engagement is affected by individual physical characteristics; Eldor and Shoshani (2016) and Runhaar et al. (2013) found that work engagement sometimes decreased among older teachers. Furthermore, proactive personalities are strong predictors of work engagement. Li et al. (2015) found that perceived self-efficacy and work engagement partially facilitated the relationship between proactive personalities and teachers' satisfaction.

In a comparison study by Van Den Berg, Bakker, and Cate, (2013), 600 teachers were surveyed. The authors measured job motivation and how it affected work engagement and found that participants scored favorably on overall work engagement when they received feedback on their teaching performance. In another study, (De Simone, Cicotto, Pinna, & Giustiniano, 2016) found that most teachers felt that being allowed to interact with students increased their job motivation and thus their work engagement (Runhaar et al., 2013; Van Den Berg & Bakker, 2013). Positive work-related well-being can be considered fulfilling to the extent that it defuses the job stress that can decrease work engagement and perceived self-efficacy (De Simone, Cicotto, Pinna, & Giustiniano, 2016; Runhaar et al., 2013).

The relationship between teacher work engagement and perceived self-efficacy was also explored by Yakin and Erdil (2012); Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007).

Xanthopoulou et al. (2007) who found that factors such as self-efficacy, self-esteem, and optimism served as individual resources at work that predicted engagement. In the context of teaching, research on perceived self-efficacy suggests it as a motivator in the relationship between teachers' commitment to work and intention to quit as well as their resilience (Klassen & Chiu, 2011; Xanthopoulou et al., 2007; Yakin & Erdil, 2012). Although the research on engagement suggests a relationship between motivation in the workplace and engagement, there is a lack of literature that explores the relationship between teachers perceived self-efficacy and work engagement, especially in the context of special education.

The occupation of teaching requires a tremendous amount of social engagement compared with other vocations, which is important to consider when evaluating general tools developed for measuring work engagement (Eldor & Shoshani, 2016; Pianta et al., 2012; Runhaar et al., 2013). Although social engagement is important in many professions, teaching requires a special focus on meaningful social interaction and engagement over long periods of time with students. The relationship between students and teachers is one of the most significant influences on students' engagement and positive education outcomes (Klassen, Perry, & Frenzel, 2012; Klassen, Yerdelen & Durksen, 2013). Teachers' work engagement, especially their stress levels and well-being, depends on the amount of energy they devote to building warm, nurturing relationships with their students. There are three areas that affect teacher work engagement: burnout, stress, and collaboration.

The above studies suggest that teachers' work engagement, or lack thereof, is caused by both external/environmental and internal/intrinsic factors. For the present study, this can be compared with the construct of perceived self-efficacy, which is almost entirely internal/intrinsic. The literature in general suggests that teachers' effectiveness on the job is

dependent as much on psychological factors (of which perceived self-efficacy is only one) as on training and ability. One significant such psychological factor is burnout: the opposite of work engagement, which could also be called work disengagement.

General Education Teacher Burnout During Work Engagement

Burnout in teaching is when teachers' stress overcomes their available resources and their abilities to cope adequately (Brunsting, Sreckovic, & Lane 2014; Mojsa-Kaja et al., 2015; Roslan, Ho, Ng, & Sambasivan, 2015). Some symptoms that can indicate burnout are loss of enthusiasm, loss of interest, erosion of work motivation, disappointment, boredom, and demoralization (De Simone et al., 2016; Rajak & Chandra, 2017); many teachers learn how to manage long-term stress, but others fail and burn out. Over time, the teachers' role has evolved to not only include teaching but administrative duties as well. Because teachers play a crucial role in students' academic development, work engagement is imperative, and teachers continue to be susceptible to burnout (Iyer, 2016; Rajak & Chandra, 2017).

Although the problems such as; excessive paperwork and large caseloads, are associated with teacher burnout, many researchers theorize that environmental and role stressors can also be perceived as teacher burnout (Dixon, Yssel, McConnell, & Hardin, 2014; Eldor & Shoshani, 2016). According to Dixon et al. (2014), the number of professional development hours and perceived self-efficacy are correlated because through professional development, teachers learn how to differentiate instruction, learn to facilitate students' development of foundational learning, and learn instructional competencies. Professional development indicates that teachers who had more professional development experience felt more efficacious in instruction in their classes (Dixon et al., 2014; Eldor & Shoshani, 2016). Therefore, stress is decreased, and burnout is minimized (Eldor & Shoshani, 2016).

Special Education Teacher Burnout During Work Engagement

Burnout is defined as "a syndrome of emotional exhaustion, depersonalization, and a reduced sense of personal accomplishments" (Leiter & Maslach, 1988, p. 297). Many factors contribute to burnout in special education, for instance, large caseloads, increased paperwork, and disruptive students (Brunsting et al., 2014; Gong, Zimmerli, & Hoffer, 2013; Mojsa-Kaja et al., 2015; Roslan et al., 2015). Special education teachers are also tasked with teaching students with a broad range of disabilities and grade levels. Therefore, the resources that are available to most general education teachers are not easily accessible to special education teachers (Gong et al., 2013; Leiter & Maslach, 1988; Maslach & Jackson, 1981). Furthermore, special education teachers generally use non-instructional time conducting meetings and completing paperwork, which often does not leave sufficient time in the day to accomplish everything else. According to researchers Eldor and Shoshani, (2016), the primary stressor for special education teachers is student behavior and discipline issues that lead to decreased positive emotions and teaching efficacy. To alleviate stress, which can cause burnout research findings suggest that compassion for students aids teachers in recovering from demanding circumstances such as the following: to be appreciated by others, teacher connectedness, and a sense of being valued. Increased school commitment and job satisfaction can minimize teacher burnout (Convey, 2014; Eldor & Shoshani, 2016; Reilly, Dhingra, & Boduszek, 2013).

Several researchers (Roslan et al., 2015; Shen et al. 2015; Yakin & Erdil, 2012) believe that teacher burnout is dramatically reducing quality of life and leading to decreased teaching efficacy. Maslach et al. (2001) investigated the relationship between teacher burnout and students' autonomous motivation and found that teacher burnout is negatively related to teacher

autonomy; in fact, teachers' burnout showed a negative relationship between their feelings of depersonalization and students' autonomous motivation development.

Other research suggests that student age, disability category, classroom composition and setting, conflict with parents, and conflict in the classroom all contribute to teacher burnout (Brunsting et al., 2014; Rajak & Chandra, 2017). Additionally, Aloe, Amo, and Shanahan (2014) found moderate positive relationships between classroom management, perceived self-efficacy, and the three dimensions of burnout. The first dimension, emotional exhaustion, is when a special education teacher feels drained, and teachers who feel this way often feel dread and want to distance themselves from others. The second dimension, depersonalization, is when a special education teacher is indifferent, unfeeling, and in some cases, callous towards others. Finally, the third dimension of burnout reduced personal accomplishment, is when special education teachers have negative appraisals of themselves and work (Gong et al., 2013; Leiter & Maslach, 1988; Maslach & Jackson, 1981).

Faced with stressful demands, most special education teachers have difficulty adjusting, and burnout occurs. Problem-focused coping strategies are considered beneficial that allow teachers to confront situations directly such as creating action plans or developing emotion-focused strategies that give teachers social support to work through their problems. If coping strategies are not implemented in stressful situations, burnout can occur (Boujut, Popa-Roch, Palomares, Dean, & Cappe, 2017; Jennett et al., 2003). Burnout during work engagement may be different for general and special education teachers. For the latter, the work is often particularly challenging and stressful and requires skills—both psychological and pedagogical—that are unique. The above findings demonstrate the need to study special education teachers regarding the effects and incidence of work disengagement (burnout).

General and Special Education Teacher Stress During Work Engagement

According to research, teaching is one of the most stressful occupations in the world (Raufelder et al., 2014; Viotti et al., 2016; Wang et al., 2015), and stress has been found to be strongly associated with teacher burnout (Raufelder et al., 2014). Saricam and Sakiz (2014) believe job stress and attrition cause many special education teachers to leave the field, which decreases the quality of special education. Many special education teachers find themselves with major health problems that are associated with the high demands of work and the high levels of stress placed upon them such as hypertension, depression, and headaches, leading to decreased work engagement (Raufelder et al., 2014; Viotti et al., 2016; Wang et al., 2015).

Stress is an indicator of poor well-being. It is experienced mostly in a professional capacity (Sneyers, Jacobs, & Struyf, 2016; Viotti et al., 2016). Educators report 5.2 stressful work events per week, and the arduous nature of the teaching profession plays a pertinent part in increased stress. High stress levels lead to decreased perceived self-efficacy (Federici & Skaalvik, 2011; Yakin & Erdil, 2012), and it is not uncommon for work-related stress to lead to negative emotions about the job (Jennett, Harris, & Mesibov, 2003; Saricam & Sakiz, 2014).

Paquette and Rieg (2016) found that work overload, communication, and classroom management and discipline contribute to teachers' stress. Lavian (2015), meanwhile, believes that special education teachers work under more difficult and demanding conditions than general education teachers because of the complex nature of the relationships between parents, students, and teachers. Special education teachers' work is complex and exhausting because of self-sacrifice, vulnerability, and commitment to their students and parents (Lavian, 2015). These difficulties related to teaching students with disabilities result in high stress and significant adverse consequences for the teaching profession and for special education teachers. Special

education teachers must face paradoxes and contradictions while teaching students with special needs. Moreover, failure and performing actions without guarantee of success are distinctive characteristics of the occupational reality of teaching students with special needs (Kiel, Hiemlich, Markowetz, Braun, & Weib, 2016).

Research has also established relationships between stress, burnout, and perceived self-efficacy among teachers. In addition to the relationship between work engagement and perceived self-efficacy discussed previously, Abenavoli, Jennings, Greenberg, Harris, and Katz (2013) and Yu, Wang, Zhai, Dai, & Yang (2015) also found a positive correlation between stress and job burnout as well as a negative correlation between stress and perceived self-efficacy. Yu et al. (2015) conducted a study with 387 teachers using instruments that measured perceived self-efficacy, work engagement, stress, and burnout and concluded that perceived self-efficacy and job burnout were negatively correlated. The study findings were consistent with other findings that teachers who face great pressure at work develop low perceived self-efficacy. When work-related pressure is not minimized, perceived self-efficacy decreases, stress increases, and teachers burn out (Yakin & Erdil, 2012; Yu et al., 2015).

In another study, conducted by Feltoe, Beamish, and Davies (2016), 535 teachers completed an online survey on stress in the workplace, and the researchers concluded that stress impacted teachers' ability to cope. This finding was consistent with findings of teachers who found themselves frequently exhausted or developing serious health problems due to occupational stress (Feltoe et al., 2016; Yu et al., 2015). Hans Seyle, a renowned researcher in human stress, developed a theory of general adaptation syndrome as a means of conceptualizing stress (Federici & Skaalvik, 2011). Seyle considered stress to be the body's response to threatening situations (Feltoe et al., 2016; Yu et al., 2015). Stress can affect the two constructs

examined in the present study, perceived self-efficacy and work engagement. Teachers, especially special education teachers, often experience high levels of stress, and such stress negatively impacts both perceived self-efficacy and work engagement. In particular, high levels of stress lead to job disengagement, or burnout. The present study will consider the effects of stress as reported by participants.

Teacher collaboration and its effect on work engagement. Collaboration is a form of lateral coordination that can improve organizational performance by fostering creativity and integration around specific problems (Duyar et al., 2013; Pellegrino, Weiss, & Regan, 2015). The classroom is a place of engagement and an environment of learning. In most cases, it is a place of collaboration for special education and general education teachers to work with students with disabilities in inclusive settings (Mastropieri & Scraggs, 2014; Pellegrino et al., 2015). Collaboration in school settings can be complex, and teachers need to find the time to work together in groups to improve educational processes and outcomes. Both general and special education teachers are called upon to effectively communicate with various individuals and develop problem-solving competencies (Mcleskey & Westling, 2013; Pellegrino et al., 2015). Collaboration was brought to the front when the Individuals with Education Disability Act was established in 2004, and general and special education teachers needed to work together to meet the needs of students with disabilities.

Numerous factors can facilitate or hinder collaborative practices. For instance, middle school teachers found it difficult to schedule time to plan individual lessons and align special needs students' individual education plans with the lessons they were teaching (Gebhardt, Schwab, Krammer, & Gegenfurtner, 2015; Mastropieri & Scraggs, 2014; Pellegrino et al., 2015). General education teachers wanted more daily guidance, advice, and training to ensure

successful collaboration (Gebhart et al., 2015). These were valid points as key factors determined that effective collaboration created many opportunities for students with disabilities. Calling for closer collaboration between special and general education teachers encourages both groups to translate, teach, and transfuse ideas, which can make teaching mutually beneficial to all parties (Kyle, Atherton, Kesby, Sothern & Andrews, 2016).

Job satisfaction and its effect on work engagement. Job satisfaction is characterized as an attitude which reflects how much a person likes or dislikes their job (Yalabik, Rayton & Rapti, 2015). The link between job satisfaction and work engagement has been explored through various studies (Garg, Dar & Mishra, 2017; Lu, Lu, Gursoy & Neale, 2015; Yalabik, Rayton & Rapti, 2016). In a study comprised of 148 bank managers in India; a Schaufeli's Satisfaction questionnaire and job satisfaction data were collected on how it impacted work engagement. To meet the objective descriptive, statistics and regression analysis was used. Results indicated the bank managers who worked in private sectors versus large corporate banks showed more job satisfaction. Therefore, work engagement was considered high. In another study by Yalabik, Rayton, and Rapti, 2016, 538 bankers from the United Kingdom participated in a nine facets job satisfaction survey: nature of work, operation conditions, pay, benefits, rewards, promotion, supervisor, co-workers and communication. Data was collected using a paper-based questionnaire. Results indicated that job satisfaction with "the nature of work" would be positively related to work engagement.

Garg et al., 2017 believed a large emphasis had been placed on job satisfaction due to the positive relationship it has with work engagement. Work is comprised of many challenges that can cause employees to view their job positively or negatively. Teachers who are positively engaged in their work demonstrate more job satisfaction with sincere dedication and

determination to help their students become academically successful. However, teachers who are affected by daily stressors often have problems with work engagement such as; large caseloads and behavior problems within the classroom (Bakker et al., 2007). Lu et al., believe highly engaged employees have a high rate of job satisfaction when compared to disengaged employees.

Summary

This review of literature has explored the relationship between perceived self-efficacy and work engagement of special education teachers of students diagnosed with ASD. Education research has shown that teacher perceived self-efficacy plays an important role in students' academic development (Khan, 2016; Mintzes et al. 2013). The review began with an exploration of Bandura's social learning theory (1971), later renamed social cognitive theory (1977), self–efficacy, and work engagement. In social cognitive theory, goal-directed behavior is influenced by perceived self-efficacy, environmental resources, and outcome-related expectations (Bandura, 1977, 1986). Teacher perceived self-efficacy is defined as the teacher's "judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 783).

This literature review further investigated how special education teachers perceived self-efficacy and work engagement relate to better understand the effects of the relationship on the teaching profession. Perceived self-efficacy allows teachers to be sure of their fundamental abilities, and work engagement gives them the opportunity to actively engage with students diagnosed with ASD (Khan, 2017). Although there is significant research on perceived self-efficacy among teachers in general education, for this literature review, only three studies were

found on perceived self-efficacy in the context of teaching students with autism spectrum disorder: Jennett et al., 2003; Ruble et al. 2011; Ruble et al., 2013. While conducting research on work engagement, Federici and Skaalvik (2011) and Khan (2016) concluded that three dimensions constitute work engagement: vigor, dedication, and absorption, and all three dimensions involve work and experience. According to Federici and Skaalvik (2011), a positive relationship between perceived self-efficacy and work engagement has positive implications for workforces. Therefore, a greater understanding of teacher perceived self-efficacy is prominent in the context of teacher work engagement and understanding the relationship between the two will result in recognizing essential factors for supporting teachers who work with students with ASD.

This literature review confirms the need for the present study. While the constructs of perceived self-efficacy and work engagement have been well explored in the literature, the relationships between the two have not been well explored. The present study may help to address the gap in scholarly research.

CHAPTER THREE: METHODS

The purpose of this correlational design was to identify, discuss and align with the study purpose. First, the study's design addressed the research questions and hypotheses. Next, the study addressed the special education teachers and how self-efficacy affected them in the workplace; while working with students with ASD. Additionally, the sample and the sampling method was described. The instruments section also discussed the reliability and validity statistics for the Teachers' Sense of Efficacy Scale and the Utrecht Work Engagement Scale.

Design

This study used a bivariate correlational design. A bivariate correlational design was appropriate to explore the relationships between the variables work engagement and teacher perceived self-efficacy among special education teachers of students diagnosed with autism spectrum disorder. A correlational design seeks to identify the significance and magnitude of relationships between and among variables, which enables correlation and regression analysis (Bosco, Aguinis, Singh, Field, & Pierce, 2015; Christensen, Johnson, & Turner, 2011). A correlational design for this study was best suited to determine which variables were connected by addressing the study research questions and hypotheses (Babbie, 2013); other quantitative research designs were considered but deemed inappropriate to answer the research questions. In a true experimental design, variables can be controlled and randomly selected, although assignment is also possible. However, in the case of this study, as is typical with most research in the field of education, randomization is not possible (Cash, Stanković, & Štorga, 2016). A causal-comparative design was not appropriate because it compares two or more groups defined by categorical variables in terms of one or more quantified dependent variables to assess causation, which this study does not (Morgan, 2013).

Moreover, this study employed a cross-sectional survey method. Cross-sectional study data collection allows for making inferences about research populations at specific points in time (Lavrakas, 2008). The cross-sectional survey method was best suited for this study rather than a longitudinal survey because it reduced common method bias and enhanced causal inference under study conditions (Pinsonneault & Kraemer, 1993; Rindfleisch, Malter, Ganesan, & Moorman, 2008).

This research sought to fill a gap in the literature by investigating the relationships between teacher perceived self-efficacy and work engagement. The researcher assessed the connections between the relationship between teacher perceived self-efficacy and work engagement with both teachers' instructional strategies and classroom management and special needs students' participation in the classroom when instructing students with ASD. The data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 25 (IBM Corp., Armonk, NY, USA) was used. The study took a total of four weeks to complete.

A power analysis was conducted using G*Power 3.1.9.2 to calculate the minimum required sample size for this study (51). The analysis considered four factors: (a) the level of significance ($p < .05$), (b) the effect size (.03), (c) the power of the test (.80), and (d) the statistical technique (Faul, Erdfelder, Buchner, & Lang, 2013). Power analysis for a Pearson correlation was conducted in G*Power to determine a sufficient sample size with an alpha of 0.05, a power of 0.80, a medium effect size ($\rho = .3$), and two tails (Faul et al., 2013). Based on the assumptions mentioned above, the desired sample size was 51.

Research Questions

This research was guided by the following questions:

RQ1: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived self-efficacy as measured by Teachers' Sense of Efficacy Total Scale (TSES-T) among special education teachers who teach students diagnosed with ASD.

RQ2: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived instructional strategies self-efficacy as measured by Teachers' Sense of Efficacy Instructional Strategy Subscale (TSES-IS) among special education teachers who teach students diagnosed with ASD?

RQ3: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived classroom management self-efficacy as measured by Teachers' Sense of Efficacy Classroom Management Subscale (TSES-CM) among special education teachers who teach students diagnosed with ASD?

RQ4: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived student engagement self-efficacy as measured by Teachers' Sense of Efficacy Student Engagement Subscale (TSES-SE) among special education teachers who teach students diagnosed with ASD?

Hypotheses

The null hypotheses for this study are:

$H_0$1: There is no statistically significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived self-efficacy as measured by Teachers' Sense of Efficacy Total Scale (TSES-T) among special education

teachers who teach students diagnosed with ASD.

$H_0$2: There is no statistically significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived instructional strategies self-efficacy as measured by Teachers' Sense of Efficacy Instructional Strategy Subscale (TSES-IS) among special education teachers who teach students diagnosed with ASD?

$H_0$3: There is no statistically significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived classroom management self-efficacy as measured by Teachers' Sense of Efficacy Classroom Management Subscale (TSES-CM) among special education teachers who teach students diagnosed with ASD?

$H_0$4: There is no statistically significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and perceived student engagement self-efficacy as measured by Teachers' Sense of Efficacy Student Engagement Subscale (TSES-SE) among special education teachers who teach students diagnosed with ASD?

Participants and Setting

The participants for the study were recruited from a convenience sample of special education teachers who were certified to teach students with ASD located in Tennessee; specifically, the participants were from one district of five elementary schools, three middle schools, and two high schools. The special education teachers were qualified to teach students in the special education classroom kindergarten to 12th grade including students with ASD.

A total of 51 special education teachers were employed in the target school district. Ten

of the teachers held a Bachelor's degrees, 23 with Master's degrees, 13 with an Education Specialist degree, and two with a Doctorate. The population of special education teacher consisted of, 9.8% males, and 88.2% females. The participants taught a combination of resource 46% of the day, cotaught 62% of the day, or received instruction in a life skills classroom 33% of the day. The ratio of resource students was 1:12, with three students with ASD, in a co-teaching classroom. The ratio of non-disabled students was 1:22 with two students with ASD. In the life skills classroom, the ratio was 1:14 with five students with ASD (with paraeducator support). The population sample consisted of 45 females and five males from the special education teacher population and one unknown gender. The ages of special education teachers who teach students with ASD ranged from 26-60 years. Teaching grade level ranges from K-12th grade and ethnicity, 34 of the participants were White, 66.7%, 11 participants were African Americans, 21.6%, three participants were Hispanics, 5.9%and three had no responses, 5.9%.

Instrumentation

Two survey instruments along with demographic information was used to measure the variables for this study. The Teachers' Sense of Efficacy Scale was used to measure perceived self-efficacy, and the Utrecht Work Engagement Scale was used to measure work engagement. This study employed the three TSES-T subscales to assess a special education teacher's perceived self-efficacy in the areas of instructional strategies, classroom management, and students' engagement in class. SurveyMonkey was used to administer the two surveys electronically to collect the study data. Demographic information was collected through the electronic survey. The details of each survey instrument are discussed below:

The electronic survey collected demographic data before presenting the participant with the TSES-T and the UWES-T. As found in Appendix A, the primary demographic questions

were (a) how many years the teacher has been teaching, (b) what degree the teacher has, and (c) has the teacher worked with children with ASD before and (d) are you currently working with students diagnosed with ASD? If so, how many? This necessary demographic information was required to ensure each participant met the study criteria, and to describe the population sample. This information obtained was essential for study replication purposes adequately. SurveyMonkey was used to collect demographic data for the study. Drop-down menus were utilized for the gender, race, age, and years teaching questions to ensure that participant responses remained consistent and reliable for disaggregation.

Teacher Sense of Efficacy Scale (TSES-T)

The TSES-T assesses teacher perceived self-efficacy using 12 items rated on Likert scales (Tschannen-Moran & Woolfolk Hoy, 2001). Tschannen-Moran and Woolfolk Hoy developed the TSES-T to focus on teachers' sense of efficacy related to student outcomes and the effort teachers invest in teaching. The scale is used for assessing perceived self-efficacy because of its reliability and validity.

There are no reverse worded questions on the TSES-T. The TSES-T is available in both long and short form, and for this study, the researcher utilized the short version of the assessment, consisting of 12 questions that could be completed in five to ten minutes (Appendix B). The instrument consisted of three subscales: classroom management, instructional strategies, and student engagement. Each subscale comprised of four questions rated on a nine-point Likert-type scale with responses such as nothing = 1, very little = 3, some influence = 5, quite a bit = 7, and a great deal = 9 (Tschannen-Moran & Woolfolk Hoy 2001). The researcher separated and analyzed the scores for each subscale and subsequently tallied them in keeping with the methods used by previous researchers. In which case, they latterly gathered data

through a series of observations and interviews as data collection techniques (Milner & Woolfolk Hoy, 2003; Tschannen-Moran & Woolfolk Hoy, 2001). Permission to use the TSES-T was given by the instrument's coauthor, Dr. Anita Woolfolk Hoy, a professor at Ohio State University (see Appendix C).

Reliability. The TSES-S was appropriate for use to assess teachers' efficacy within educational settings. Nie, Lau, and Liau (2012) revised the TSES and further tested its reliability, factorial validity, and predictive validity and suggested the valid use of the scale with Singaporean teachers. Additionally, the TSES-T has been utilized by researchers including Gibson and Dembo (1984), whose study consisted of two factors; factor one represented the teacher's sense of overall teaching efficacy. It reflected the teacher's belief that their ability brings about desired outcomes is limited by external factors such as the home environment and family background. The second factor represented the teacher's sense of personal teaching efficacy. It reflected a teacher's belief in their ability to bring about a positive change in the student's environment. Zee et al., (2016) in conducting their research they examined the multilevel factor structure of the adapted TSES instrument. The focus was to find a four-factor multilevel model depiction representing the TSES domains. The test subsequently tested for invariance over clusters, cluster bias and violations of measurement. Findings from the study suggest self-efficacy measures that are altered to specific teaching domains may enhance the power of the self-efficacy constructs and explain why teacher's behavior is more supportive to students within the classroom (Bandura, 1986, 1997). Furthermore, in a study of consisting of 489 teachers from three East Asian countries, including China, Korea, and Japan, TSES, developed by Tschannen-Moran and Woolfolk Hoy (2001), was used to collect data to measure the perceived self-efficacy of teachers in the three countries. Results indicated that the

TSES-S short-form model was reliable and valid for all three countries (Ruan et al., 2015).

Validity. The validity of the TSES-T has also been found to be adequate in numerous research studies (Hoy & Woolfolk, 1993; Kerlinger, 1986; Zee et al., 2016). In a factor analysis, there is a smaller set of latent variables commonly used to assess the validity. Exploratory factor analysis is directed at the understanding of the relationship among variable by understanding the constructs that underlie them. Pecháčková, Drahokoupilová, and Krámová, (2015) conducted a factor analysis assessing the validity of the TSES-T to determine whether the questions on the assessment measure the constructs of self-efficacy, and the study consistently showed three factors: efficacy in student engagement, efficacy in instructional practices, and efficacy in classroom management. These factors accounted for 54% of the variance of self-efficacy with the 24-item long form. Using the 24 items, principal-axis factoring with varimax rotation yielded the same three factors with loading 0.86 for instructional strategies; 0.86 for classroom management and 0.81 for student engagement. An efficacy scale was computed for each subscale by calculating the mean for each of the eight responses to the items loading highest to the factor (Tschannen-Moran & Hoy, 2001).

To determine the efficacy in student engagement, efficacy in instructional practices, and efficacy in classroom management subscale scores, Tschannen-Moran and Hoy (2001) computed the unweighted means of the items that loaded on each factor. An analysis of the results indicated that both the long and short forms showed sufficient reliability with a positive intercorrelation of 0.95 to 0.98 (Tschannen-Moran & Woolfolk Hoy, 2001).

TSES-T Subscales. Classroom management subscale (TSES-CM). The TSES classroom management subscale measured teachers' efficacy related to both preventive and reactive attempts to control student behavior (Tschannen-Moran & Hoy, 2001). Teachers

taking part in the survey answered questions such as “How much can you do to control disruptive behavior in the classroom?” (Tschannen-Moran & Hoy, 2001). The classroom management subscale items are rated on a Likert scale ranging from 1 = nothing to 9 = a great deal. This subscale was comprised of four elements, to determine the efficacy in classroom management utilizing the short form, items 1, 6, 7 and 8 are computed by calculating the mean of the responses to the items retained in each factor; the subscale’s score can range from a low of 8 to a high score of 72. The lowest score suggests low efficacy in managing student behavior, and the highest score indicates teachers’ confidence in their ability to manage students (Tschannen-Moran & Hoy, 2001). The subscale was designed to help gain a better understanding of the factors that create difficulties with classroom management during school activities. The mean for the norm group of pre-service teachers was 6.7 with a standard deviation of 1.2, and a Cronbach’s alpha of .86 (Tschannen-Moran & Hoy, 2001).

Instructional Strategies Subscale (TSES-IS). The purpose of the TSES instructional strategies subscale was to address teachers’ perceived ability to tailor instruction to meet student needs and include aspects such as gauging learning using instructional approaches and questioning techniques; this subscale included questions such as “How well can you implement alternative strategies in your classroom?” (Tschannen-Moran & Hoy, 2001). The subscale was comprised of four items from the 12-item survey: 5, 9, 10, and 12; the items were scored on a Likert scale ranging from 1 = nothing to 9 = a great deal. The total score for the four instructional strategies items ranges from 7 to 63, with the low score indicating teachers’ limited opinions of their abilities to plan and implement instruction to address specific students’ needs (Tschannen-Moran & Hoy, 2001). The mean for the norm group of preservice teachers was 7.3, with a standard deviation of 1.2; and a Cronbach’s alpha of .86 (Tschannen-Moran & Hoy,

2001).

Student Engagement Subscale (TSES-SE). The TSES student engagement subscale measures teachers' perceived efficacy in supporting student learning and motivation, including for difficult and struggling learners using short-form items 2, 3, 4, and, 11. The subscale included questions such as "How much can you do to help your students value learning?" scored on a Likert scale ranging from 1 = nothing to 9 = a great deal. The lowest possible total score of seven indicated teachers' limited beliefs in their abilities to foster student learning and motivate student engagement. The mean score for the pre-service norm group was 7.2 with a standard deviation of 1.2, and a Cronbach's alpha of .81 (Tschannen-Moran & Hoy, 2001).

Utrecht Work Engagement Scale (UWES-T). The UWES-T is a self-report scale, with 17-item and 9-item versions widely used in independent national research studies all over the world. It was developed by Schaufeli and Bakker in 1999 to assess work engagement. The authors (2003) characterized work engagement as a high level of energy combined with strong identification. Originally, the UWES-T comprised 24 questions; based on the intensity of work engagement; however, after two psychometric evaluations, it was condensed to a 17-item version because other items were deemed unreliable and did not possess construct validity. The instrument has been used throughout current research with the population of teachers (Hakanen et al., 2006), salespeople (Seppala et al. 2009), paramedics and Army officers (Schaufeli, Bakker & Salanova, 2006).

The 17-question scale measures work engagement on three subscales: vigor, dedication, and absorption, and the survey items use a seven-point Likert scale ranging from 1 = never to 7 = always. However, to be consistent with the TSES-T, the researcher reassigned the value of 0

to 1, 1 reassigned to 2, and so forth. The final Likert scale for the UWES-T is 0 = never to 6 = always (Appendix F); the questions on the Likert scale are not reversed scored. The UWES-T can be completed in 5 to 10 minutes. The total work engagement score is calculated by adding the scores for each scale and dividing the sum by the number of subscale items (Schaufeli & Bakker, 2003).

Reliability. The UWES-T has shown adequate reliability, with Cronbach's alphas ranging from 0.85 to 0.91 (De Bruin, Hill, Henn, & Muller, 2013). Two longitudinal studies have evaluated the reliability of the UWES-17; it was administered twice within one year, among 293 Australian Salvation Army officers and 563 Norwegian paramedics. The stability coefficients, the correlations between the three subscales vigor, dedication, and absorption, for the two administrations were .63 for the Salvation Army officers and .72 for the Norwegian paramedics (Van Dierendonck, Schaufeli, & Buunk, 2001). The conclusion being all three subscales are highly internally consistent with correlations being between .86 to .93 (Schaufeli & Bakker, 2004). Thus, the relationship shows a three-dimensional structure, and the three dimensions are closely related.

Validity. Nunnally and Bernstein (1994), through common factor analysis, asserted that factor loadings above 0.50 are adequate to establish validity. In a study of 2038 elementary school teacher, a questionnaire was delivered to all teachers of the Education Department of Helsinki, Finland. Work engagement was assessed with the Utrecht Work Engagement Scale (UWES; (Schaufeli et al., 2002). The factorial validity of the Finnish version of the UWES was demonstrated in previous research (Hakanen, 2002). Factor loadings were invariant across two groups, and the Utrecht Work Engagement Scale showed the validity of 0.90 (Hakanen et al., 2006).

UWES-T Subscales. Vigor subscale. The UWES-T measures several dimensions of work engagement, one of which is vigor. The items are rated using a Likert scale ranging from 1 = never to 7 = always. A low score of 7 on the subscale indicates that a participant feels inactive, inflexible, and unwilling to invest effort in one's work, whereas the high score of 42 means that a participant feels energetic, mentally resilient, and willing to invest effort in work.

Dedication subscale. A low score of 7 indicates that a participant feels insignificant, lonely, bored, and uninspired at work, and the high score of 35 denotes that a participant feels a sense of significance, enthusiasm, inspiration, pride and challenge in work.

Absorption subscale. A low score of 7 indicates that a participant can quickly detach from work, whereas a high score of 42 implies deep engrossment in work.

Procedures

Prior to implementing the study, the researcher obtained permission from Liberty's institutional review board (IRB, Appendix A). Additionally, the researcher secured approval to conduct the study and collect data from the southeastern school district administrator. The researcher contacted the district researcher evaluator and obtained preapproval to conduct the study in the school district (Appendix B-E). Once the study had received IRB approval, the researcher sent a copy of the approval to the school district pending formal approval.

IRB permission to conduct the study and formal request to the school district was provided (See appendices B-E). A meeting with the school district administrator will be scheduled. After district approval, an email will be sent to the schools' principals notifying them of district superintendent approval (Appendix F. The letter will serve as an introduction of the researcher, explain the study, what questions are going to be asked, how long the study will

take, and who will be participating in the research. This is to ensure that the administrators are aware of that special education teachers in their school are being asked to participate in the research study, the purpose and requirements of the study.

After communication and explanation to building administration, the researcher will obtain special education teachers' email addresses from the district website and send a participant recruitment letter via email (Appendix G). This letter will inform potential participants that the study is voluntary and the information they provide will be kept confidential to the extent allowable by law. Steps taken to keep identity confidential will include electronic forms of data will be securely stored with McAfee Total Protection firewalls, virus detection programs and the SurveyMonkey's use of the anonymous data collection feature. The researcher will make sure databases and file systems are loaded and secure on a thumb drive in a locked file cabinet to prevent unauthorized or disruptive access to the stored data. Data will be kept for 3 years then all data will be destroyed.

SurveyMonkey has an anonymous response feature that can be used to make email information anonymous. The researcher will be utilizing this anonymous option to ensure all surveys are kept nameless. An electronic link to the survey will direct participants to the informed consent page, where they can read further information about the study (Appendix I). Consenting participants will be expected to complete the demographic questionnaire to adequately describe the sample for replication purposes (Appendix J), the TSES-T (Appendix K), and the UWES-T (Appendix L) via SurveyMonkey. After two weeks of no response, a follow-up email will be sent to all teachers. With the help of the anonymous response system, the researcher can access who participated in the study independent of the recipients' responses (Appendix H).

Data Collection

The researcher began by converting both the TSES-T and UWES-T assessments into electronic versions to ensure compatibility with the SurveyMonkey data collection format to collect responses, along with answers to the demographic questions. Prospective participants received a recruitment letter via email with an electronic link to the survey. The first page of the survey consisted of informed consent information for the participants to review and determine if they wanted to continue in the study. Study participants completed the demographic questionnaire and the TSES-T and UWES-T in SurveyMonkey.

The special education teachers were provided with a two-week window in which to respond to the survey. A reminder email was sent to all participants after two weeks (Appendix I). All SurveyMonkey was deleted upon the completion of the study using SurveyMonkey deleting procedures. The researcher determined that if only a limited number of surveys were returned, she would ask the principals of each school to announce during staff meetings. The researcher emailed all special education teachers using SurveyMonkey, stressing that participants' responses would remain anonymous using the anonymous response procedures of SurveyMonkey. The importance of gathering information on perceived self-efficacy, work engagement, instructional strategies, classroom management, and student engagement while working with students with ASD was also explained.

Data Analysis

A bivariate correlational design employing a Pearson correlation coefficient analysis was used to determine if a significant relationship existed between work engagement and perceived self-efficacy total scales and subscales or instructional strategies, classroom management, and student engagement, among special education teachers who teach students

with ASD. Tabachnick & Fidell, (2007) stated: “The evidence of multiple correlations emphasizes the degree of relationship between the dependent variable and the independent variables” (p.18).

Additionally, the assumptions for Pearson’s correlation analysis were tested first before the statistical procedure was used. The four assumptions that were tested were: (a) normality, (b) bivariate normal distribution, (c) linearity, and (d) independence (Sedgwick, 2015). The first assumption of bivariate outliers used a scatter plot between the predictor variables (x) and the criterion variable (y) to examine if there were extreme bivariate outliers. The second, assumption of linearity utilized a scatter plot between the predictor variables (x) and the criterion variable (y) to assess if the hypothesis was tenable. The third, assumption of bivariate normal distribution used a scatter plot between the predictor variables (x) and a criterion variable (y) to investigate if a classic “cigar shape” was evident. A “cigar shape” indicates homoscedasticity (Bertsekas & Tsitsiklis (2008). Furthermore, a test for outliers was conducted through visual inspection of histograms and box plots to determine the assumption of independence (Huber & Melly, 2015). In retrospect, if an outlier is identified, the outlier can be removed, and the data analysis can run either with or without the outlier. Once the data analysis is completed, the data were compared with and without the outlier.

Cronbach’s alpha was used to determine the statistical significance of the study. The dependent and independent variables determined the approximate magnitude of a given relationship (Cohen, 1988). Significance refers to the probability of rejecting a null hypothesis given that it is true, which is commonly referred to as a Type I error (Haas, 2012). After reviewing the correlations and alpha levels, effect sizes were calculated and discussed. Berger, Bayarri, and Pericchi (2013) determined that effect sizes in quantitative studies may be

categorized as small (.1), medium (.3), or large (.5) where medium usually denotes a balance between being too strict (small) and too lenient (large) (Walker, 2008).

In addition to effect size, the correlation between two variables and power were reviewed. The power of a test refers to the probability that it correctly rejects a false null hypothesis; therefore, accepting the alternative hypothesis (Haas, 2012). Within quantitative studies, 80% of power is used. Study data was downloaded from SurveyMonkey and uploaded to SPSS version 25 for analysis of the data.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this quantitative study was to determine the relationship between perceived self-efficacy and work engagement among special education teachers of students diagnosed with autism spectrum disorder (ASD). Self-Efficacy data were gathered using the Teachers' Sense of Efficacy Scales (TSES-T) and the student engagement, classroom management, and the instructional strategies sub-scales. Work engagement was evaluated using the Utrecht Work Engagement Total Scale. Study participants were to include only certified special education teachers, as described in chapter three. However, due to limited special education teacher participation special education aides who were certified to assist and support the teaching of students with ASD were also included. The participants were drawn from one district of five elementary schools, three middle schools, and two high school. Chapter 4 provides a summary of the results of the present study. Chapter 4 will consist of the following sections: a restatement of the research questions and null hypotheses, descriptive statistics, results, and hypotheses.

Research Questions

The following research questions guided the analyses for this study:

RQ1: Is there a positive relationship between work engagement, as measured by Utrecht Work Engagement Total Scale (UWES-T), and perceived self-efficacy, measured by the Teachers' Sense of Efficacy Total Scale (TSES-T), among special education teachers who teach students diagnosed with ASD.

RQ2: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and instructional strategies perceived self-

efficacy as measured by Teachers' Sense of Efficacy Instructional Strategy Subscale (TSES-IS) among special education teachers who teach students diagnosed with ASD?

RQ3: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and classroom management perceived self-efficacy as measured by Teachers' Sense of Efficacy Classroom Management Subscale (TSES-CM) among special education teachers who teach students diagnosed with ASD?

RQ4: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and student engagement perceived self-efficacy as measured by Teachers' Sense of Efficacy Student Engagement Subscale (TSES-SE) among special education teachers who teach students diagnosed with ASD?

Null Hypotheses

The null hypotheses for this study are:

$H_0$1: There is no statistically significant positive relationship between work engagement and perceived self-efficacy among special education teachers with students diagnosed in ASD. There is no significant correlation between participants' work engagement scores (UWES-T) and their self-efficacy scores (TSES-T).

$H_0$2: There is no statistically significant positive relationship between work engagement and perceived instructional strategies self-efficacy among special education teachers with students diagnosed in ASD. There is no significant correlation between participants' work engagement scores (UWES-T) and their scores on the instructional self-efficacy sub-scale (TSES-IS).

$H_0$3: There is no statistically significant positive relationship between work engagement and perceived self-efficacy in classroom management among special education teachers with

students diagnosed in ASD. There is no significant correlation between participants' work engagement scores (UWES-T) and their scores on the classroom management self-efficacy sub-scale (TSES-CM).

$H_0$4: There is no statistically significant relationship between work engagement and perceived self-efficacy in student engagement among special education teachers with students diagnosed in ASD. There is no significant correlation between participants' work engagement scores (UWES-T) and their scores on the student engagement self-efficacy sub-scale (TSES-SE).

Demographics and Descriptive Statistics

The participants recruited for the study were tasked to complete three sets of questions, namely demographics, the UWES-T, and the TSES-Short Form. The district gave the researcher 90 email addresses to contact special education teachers. Of the 90 emails sent, 71 individuals responded to the survey. Hence reviewing the 71 completed responses, 20 respondents indicated that he or she did not hold a valid teaching license. Therefore, analyses in this chapter will consist of 51, certified special education teachers. Participants' demographic information are presented in Table 1.

The majority of the participants are also female (n = 60, 84.5%). Based on the data collected, 44 of the participants were Whites (62.0%), 20 participants were African Americans (28.2%), and only four participants were Hispanics (5.6%). In terms of educational degrees, 33 participants have master's degrees (46.5%), 14 participants have bachelor's degrees (19.7%), 17 participants were education specialists (23.9%) and 4.2% participants held doctorate degrees.

Table 1

Frequencies and Percentages of Demographic Characteristics (N = 51)

		Frequency	Percent
Gender	Female	45	88.2
	Male	5	9.8
	Missing/No Response	1	2.0
	Total	51	100.0
Race	Black or African American	11	21.6
	Hispanic/Latino	3	5.9
	White	34	66.7
	Missing/No Response	3	5.9
	Total	51	100.0
Degree	Bachelor's	10	19.6
	Master's	23	45.1
	Education Specialist	13	25.3
	Doctorate	2	3.9
	Missing/No Response	3	5.9
	Total	51	100.0

Participants' years of experience, as well as age, were also collected. Participants ages ranged from 26 to 60 years old with a mean age of 44.86 years (*SD* = 8.90). The years of experience as a certified teacher ranged from 0 to 31 years with a mean of 12.57 years (*SD* = 7.72). Teachers experience working with students with autism ranged from 2 years to 35 years with a mean of 12.62 years (*SD* = 7.24) (See Table 2).

Table 2

Descriptive Statistics of Age and Years of Experience (N = 51)

	N	*Min*	*Max*	*Mean*	*SD*
Age	51	26	60	44.86	8.90
Certified Teaching experience (years)	48	0	31	12.57	7.72
Experience working with Autism (years)	49	2	35	12.62	7.24

Participants' self-efficacy in teaching was measured by the TSES-T scale and student engagement, classroom management, and instructional strategies subscales of the TSES-short

version. Teachers' work engagement was measured by the UWES-T scale and vigor, dedication, and absorption sub-scales of the UWES. Inter-item reliability for the TSES and its sub-scales, as well as the UWES and its subscales was assessed using Cronbach's alpha. All scales and sub-scales in the present study had an inter-item reliability of at least .729, indicating that the TSES and UWES (and all sub-scales) had high internal reliability. See Table 3 for descriptive and reliability statistics on the TSES and UWES scales.

Certified teachers' overall sense of self efficacy (TSES-T scores) ranged from 5.33 to 9.00, with a mean of 7.55 (*SD* = 1.02). Participants' average sense of self-efficacy was significantly higher than the normed teacher self-efficacy responses in the construction of the TSES-T scale (*M* = 7.1, *SD* = 0.98; Tschannen-Moran & Hoy, 2001), t (456) = 3.00, p = .003. This indicates that teachers in the present sample may have higher self-efficacy than teachers in the general population.

The TSES classroom management (TSES-CM) subscale measured teachers' efficacy related to both preventive and reactive attempts to control student behavior (Tschannen-Moran & Hoy, 2001). Certified teachers' TSES-CM scores ranged from 5.25 to 9.00 with a mean of 7.65 (*SD* = 1.03). Participants' TSES-CM scores were significantly higher than those from the original norming study (*M* = 6.7, *SD* = 1.2; Tschannen-Moran & Hoy, 2001), $t(459) = 5.41$, $p <$ .001. This indicates that the efficacy of teachers in managing classrooms is at a higher range in the sample than in the general population.

The purpose of the TSES instructional strategies (TSES-IS) subscale was to address teachers' perceived ability to tailor instruction to meet student needs and include aspects such as gauging learning using instructional approaches and questioning techniques (Tschannen-Moran & Hoy, 2001). Certified teachers' TSES-IS scores ranged from 4.75 to 9.00 (*M* = 7.66; *SD* =

1.11). The mean for the norm group of teachers was 7.3, with a standard deviation of 1.2 (Tschannen-Moran & Hoy, 2001). Participants' responses indicated that the teacher's ability to plan and implement instructions to address students' needs is at a higher range than the normed group of teachers, $t(456) = 1.98$, $p = .048$.

The TSES student engagement (TSES-SE) subscale measures teachers' perceived efficacy in supporting student learning and motivation, including for difficult and struggling learners. Certified teachers' TSES-SE scores ranged from 5.00 to 9.00 ($M = 7.44$; $SD = 1.12$). The mean TSES-SE score for the norm group of teachers was 7.2, with a standard deviation of 1.2 (Tschannen-Moran & Hoy, 2001). Participants' responses indicated that the teachers' beliefs in their abilities to foster student learning and motivate student engagement was similar (i.e. not statistically different) from the normed group of teachers, $t(459) = 1.36$, $p = .18$.

Participants work engagement was measured by the UWES scale and sub-scales (vigor, dedication, and absorption). Certified teachers' overall work engagement scores ranged from 3.29 to 6.94, with a mean of 5.61 ($SD = 0.75$).

The vigor sub-scale ranged from 2.83 to 7.00 with a mean of 5.53 ($SD = 0.88$). Scores on the dedication sub-scale ranged from 4.00 to 7.00 with a mean of 6.01 ($SD = 0.80$). Scores on the absorption sub-scale ranged from 3.17 to 7.00 with a mean of 5.35 ($SD = 0.81$). (See Table 3).

Table 3

Descriptive Statistics of TSES and UWES Scores

Scale/Sub-Scale	*N*	*Min*	*Max*	*Mean*	*SD*	*Alpha*
TSES						
Student Engagement (SE)	51	5.00	9.00	7.44	1.12	.882
Instructional Strategies (IS)	48	4.75	9.00	7.66	1.11	.895
Classroom Management (CM)	51	5.25	9.00	7.65	1.03	.909
Total	48	5.33	9.00	7.55	1.02	.954

UWES						
Vigor	50	2.83	7.00	5.53	0.88	.863
Dedication	49	4.00	7.00	6.01	0.80	.849
Absorption	50	3.17	7.00	5.35	0.81	.729
Total	49	3.29	6.94	5.61	0.75	.921

UWES = Utrecht Work Engagement Total Scale; TSES = Teachers' Sense of Efficacy

Results

Assumption Testing

Prior to analyzing the research questions, it is important to determine if the data met the statistical assumptions of Pearson's correlation analysis. The three major assumptions to be tested were (1) the absence of bivariate outliers, (2) the assumption of linearity, and (3) the assumption of bivariate normal distribution. A visual inspection of the data was completed using scatterplots of each variable to determine if the data met the statistical assumptions of a correlational analysis (see Figures 1 – 16).

First, scatterplots were analyzed visually to search for bivariate outliers in the TSES and UWES scales and subscales (Figures 1 – 16). No bivariate outliers were identified.

Then, through visual analysis of each scatterplot, the researcher determined that the assumption of linearity was tenable for the relationship between teacher self-efficacy (TSES and sub-scales) and work engagement (UWES and sub-scales). The TSES-T scale score and the UWES-T score and UWES sub-scales (UWES-Dedication, UWES-Vigor, UWES-Absorption) demonstrated tenable signs of a positive linear relationship, but the data is non-monotonic in nature.

Finally, the scatterplots were visually inspected to determine if the data meet the assumption of bivariate normal distributions (Figures 1 – 16). Through visual analysis of each scatterplot, it was determined that the assumption of bivariate normal distribution was not tenable for any of the plots. Therefore, Spearman's non-parametric correlation coefficient was

determined to be more appropriate than Pearson's correlation coefficient for the present analyses.

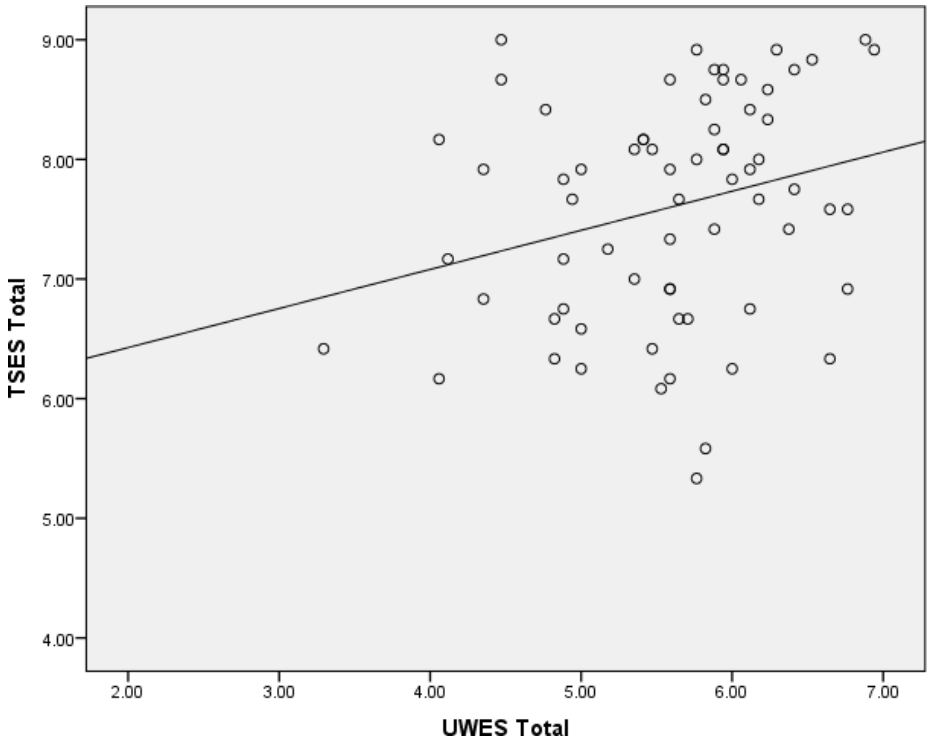

Figure 1. Scatterplot of TSES-T and UWES-T scores

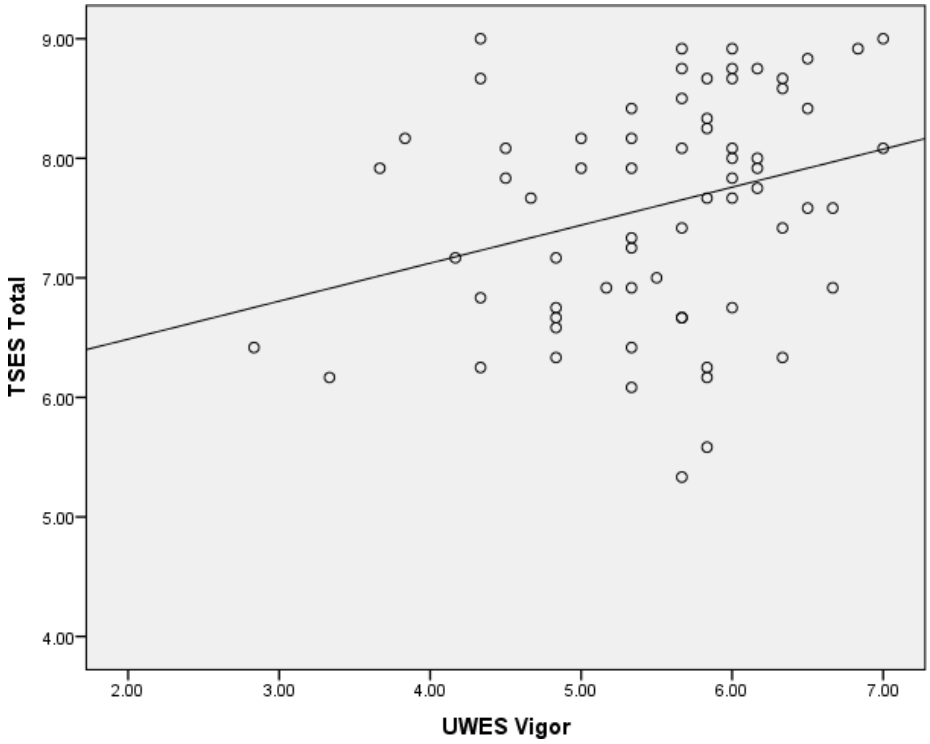

Figure 2. *Scatterplot of TSES-T and UWES-Vigor scores*

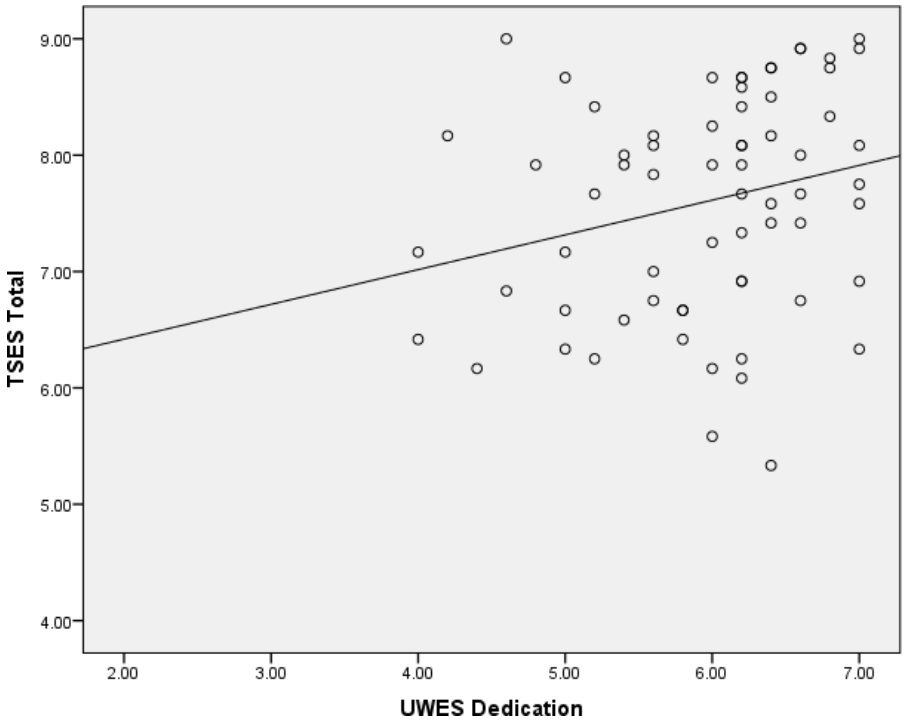

Figure 3. *Scatterplot of TSES-T and UWES-Dedication scores*

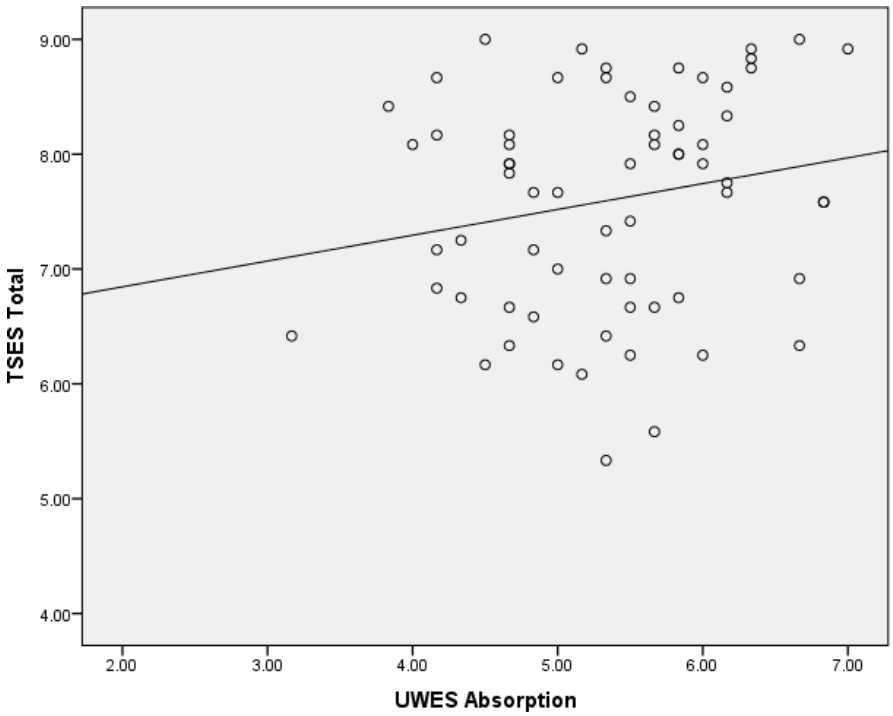

Figure 4. *Scatterplot of TSES-T and UWES-Absorption scores*

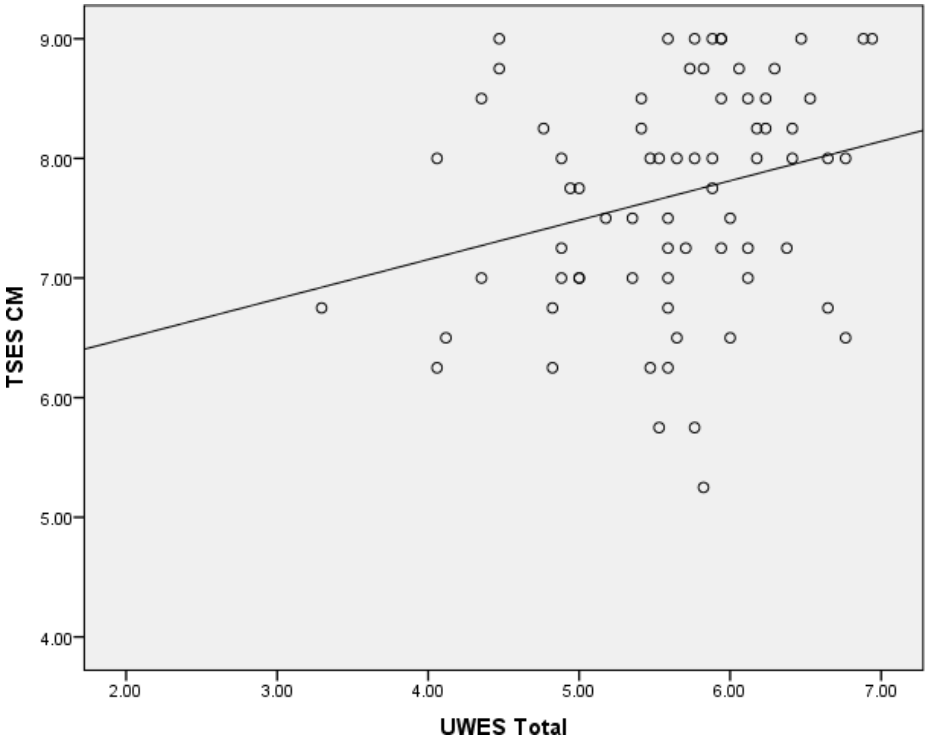

Figure 5. *Scatterplot of TSES-CM and UWES-T scores*

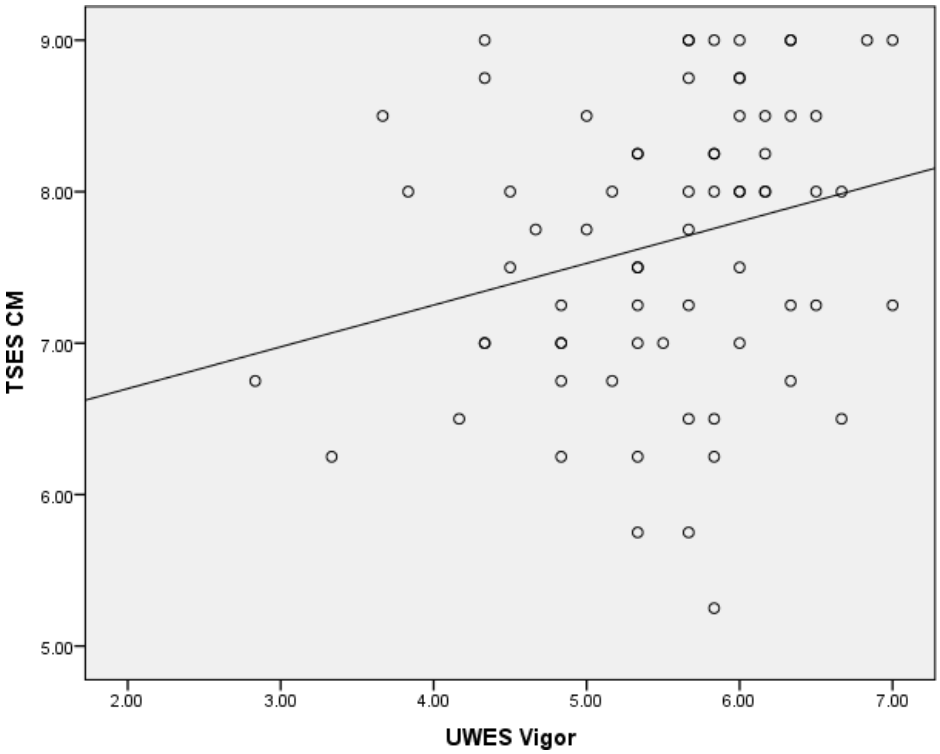

Figure 6. *Scatterplot of TSES-CM and UWES-Vigor scores*

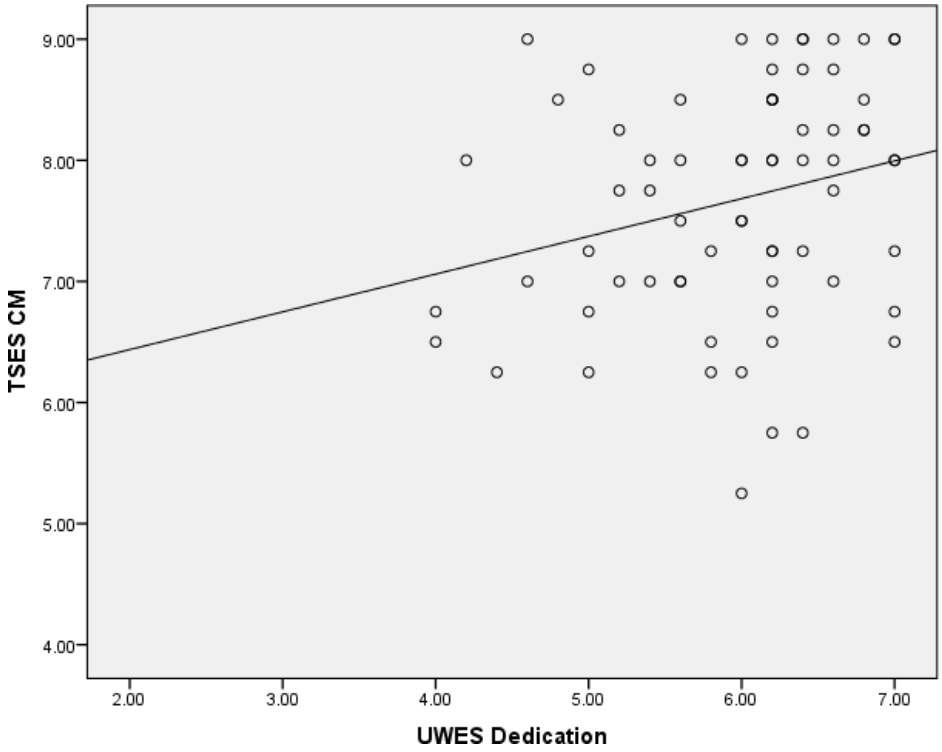

Figure 7. *Scatterplot of TSES-CM and UWES-Dedication scores*

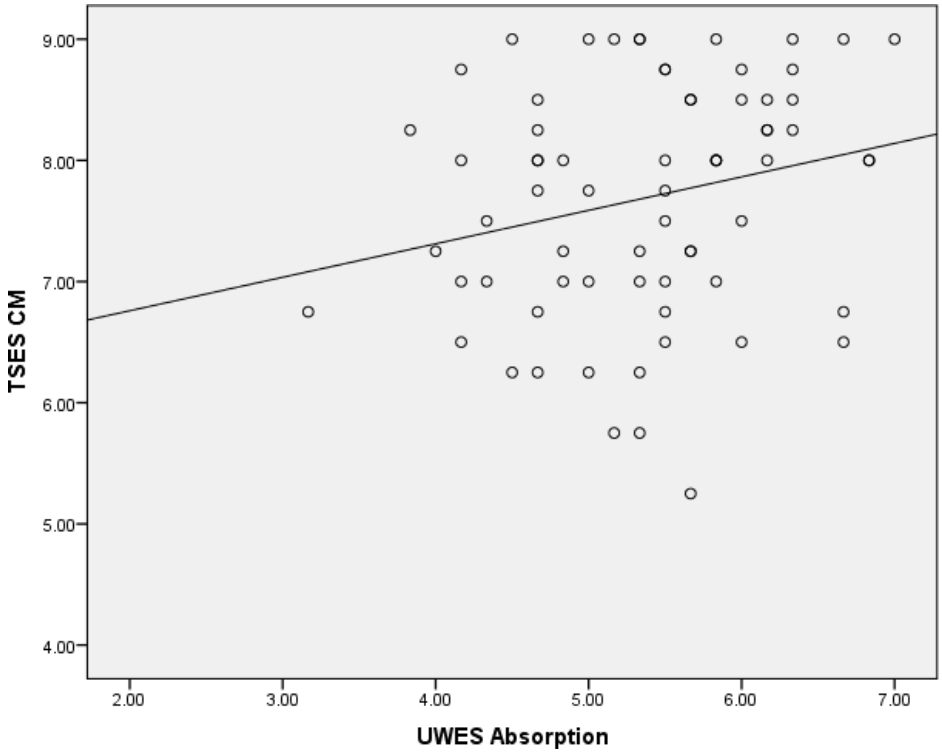

Figure 8. *Scatterplot of TSES-CM and UWES-Absorption scores*

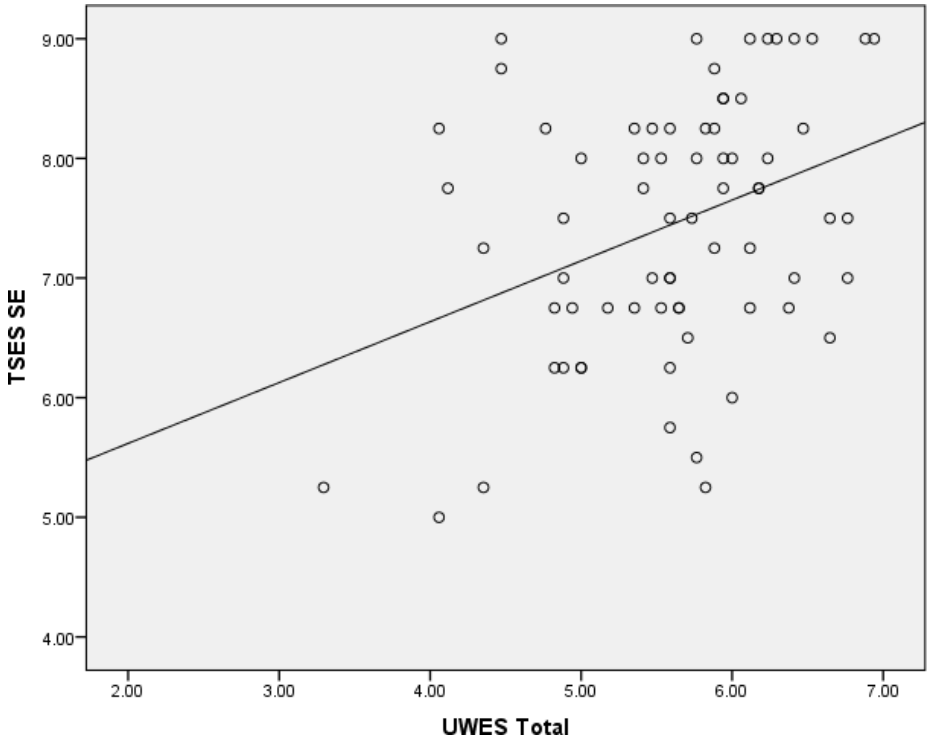

Figure 9. *Scatterplot of TSES-SE and UWES-T scores*

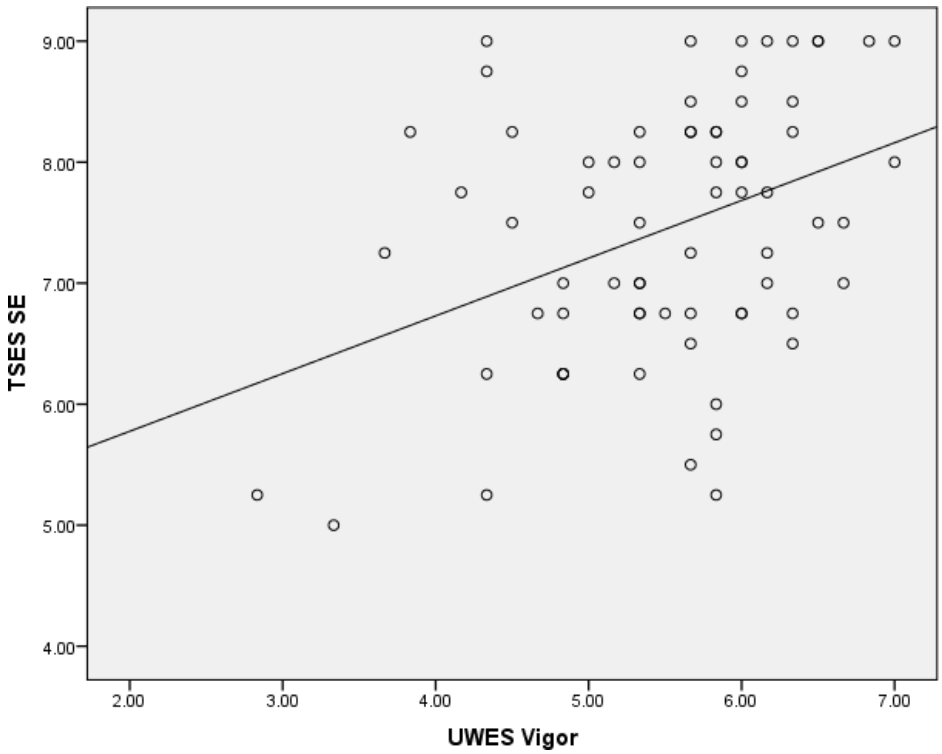

Figure 10. *Scatterplot of TSES-SE and UWES-Vigor scores*

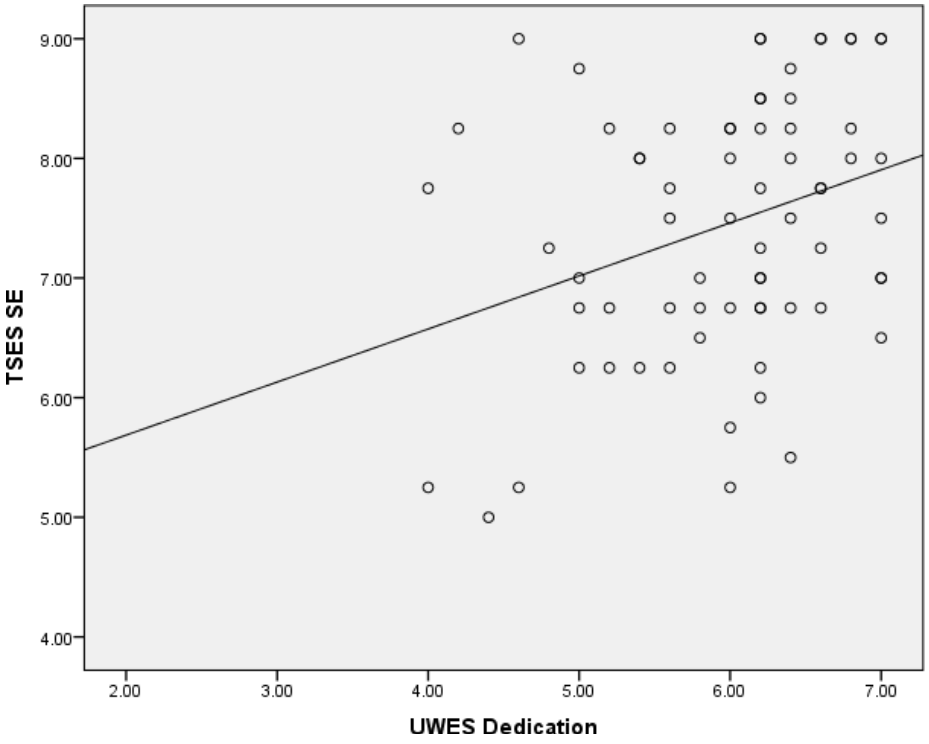

Figure 11. *Scatterplot of TSES-SE and UWES-Dedication scores*

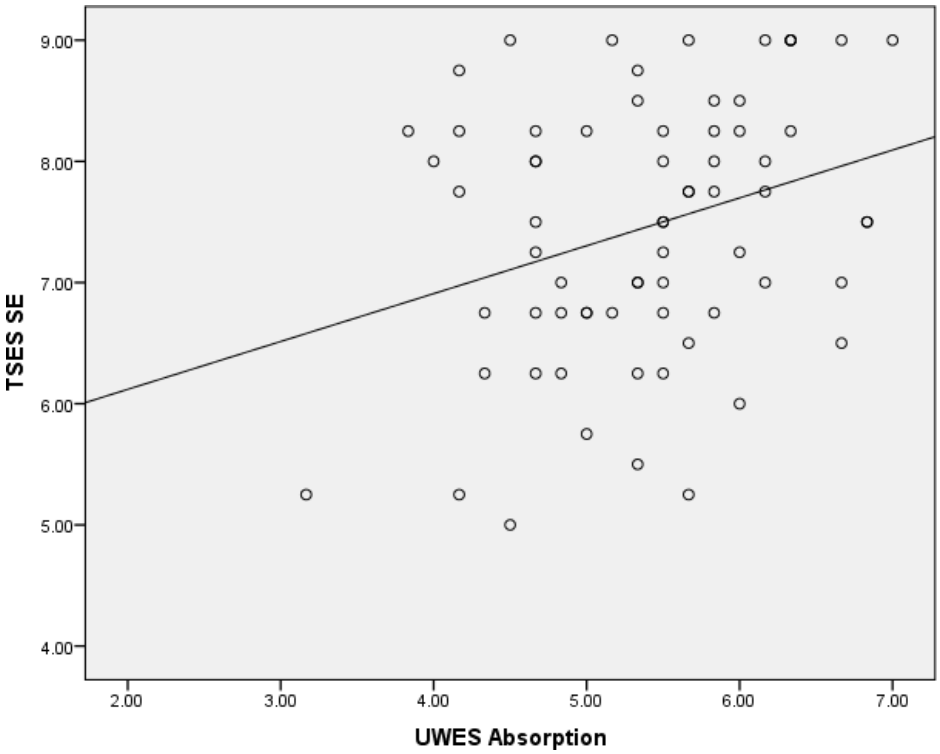

Figure 12. *Scatterplot of TSES-SE and UWES-Absorption scores*

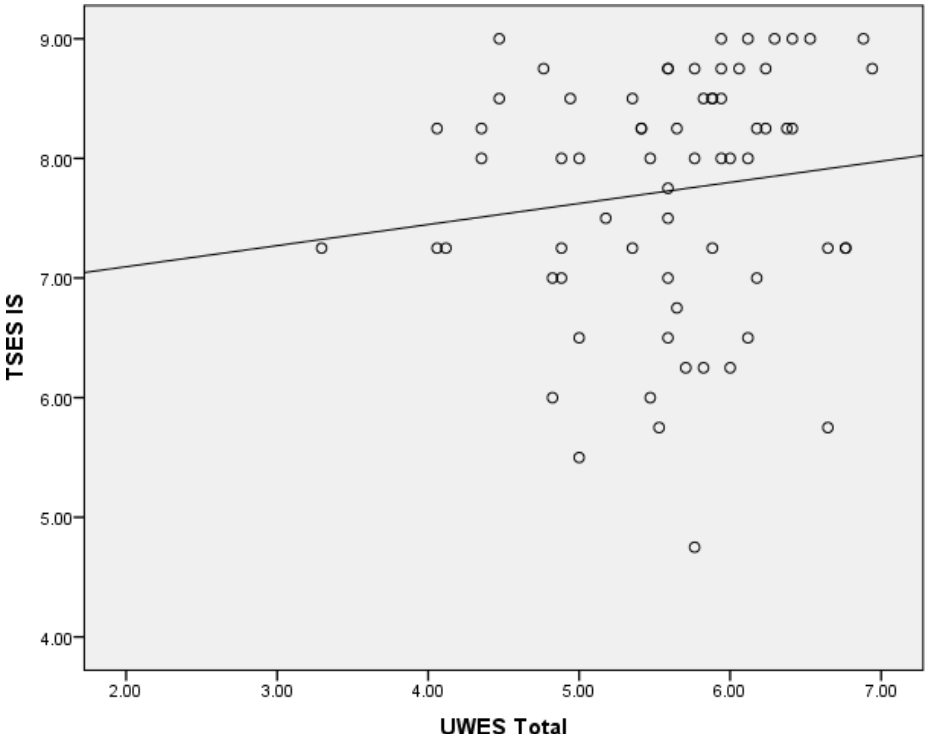

Figure 13. *Scatterplot of TSES-IS and UWES-T scores*

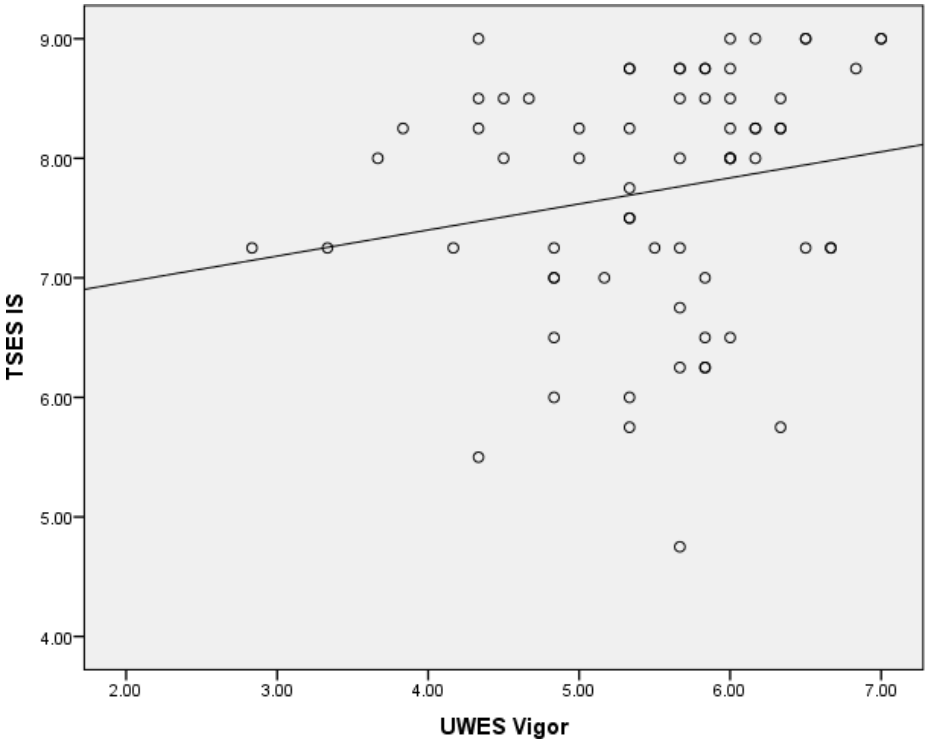

Figure 14. *Scatterplot of TSES-IS and UWES-Vigor scores*

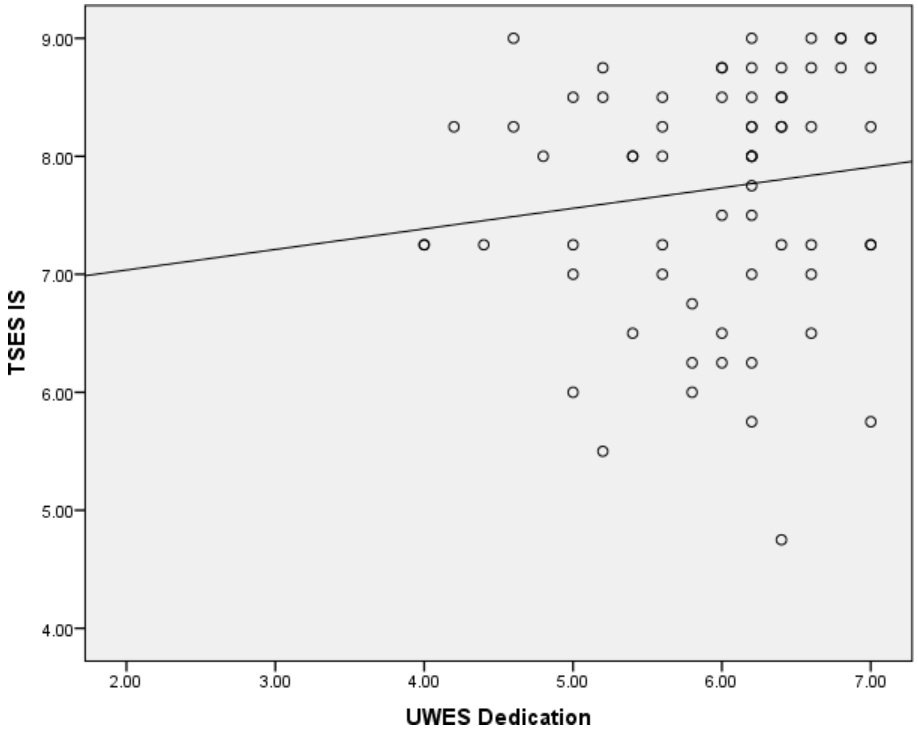

Figure 15. *Scatterplot of TSES-IS and UWES-Dedication scores*

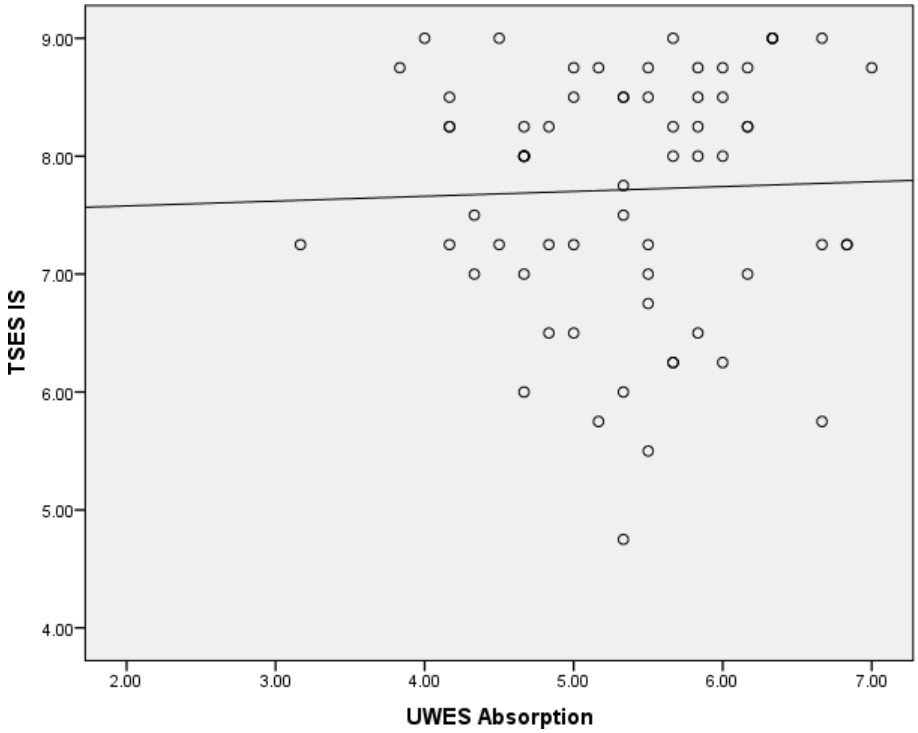

Figure 16. *Scatterplot of TSES-IS and UWES-Absorption scores*

Results

Hypotheses

The hypotheses posed in the study were analyzed using the Spearman's correlation analyses. Table 4 presents the results to the correlational analyses examining the relationship between self-efficacy and work engagement.

According to the Spearman's correlation analysis, research question one indicated there was a positive correlation between participants' TSES-T scores and UWES-T scores ($r_s = .292$, $p = .016$). Research question two, indicated there is not statistical evidence to reject the null hypothesis, and there is no relationship between teachers' self-efficacy in instructional strategies and work engagement among special education teachers who teach students with ASD. Research question three indicated there was a positive correlation between participants' TSES-CM and UWES-T scores ($r_s = .304$, $p = .01$). This indicated that as participants' self-efficacy in classroom management, as measured by TSES-CM scores, increased, their work engagement, as measured by UWES-T scores, also increased. Finally, research question four indicated there was a relationship between participants' TSE-SE and UWES-T scores ($r_s = .332$, $p = .005$), indicating a positive correlation between teachers perceived self-efficacy in student engagement and work engagement.

RQ1: Is there a positive relationship between work engagement, as measured by Utrecht Work Engagement Total Scale (UWES-T), and perceived self-efficacy, measured by the Teachers' Sense of Efficacy Total Scale (TSES-T), among special education teachers who teach students diagnosed with ASD.

The first research question was focused on determining the relationship of TSES-T and UWES-T. There was a positive correlation between participants' TSES-T scores and UWES-T

scores ($r_s = .292$, $p = .016$). This indicated that as participants' self-efficacy, as measured by TSES-T scores, increased, their work engagement, as measured by UWES-T scores, also increased. Therefore, the first null hypothesis associated with research question 1, there is no statistically significant positive relationship between work engagement perceived self-efficacy among special education teachers who teach students diagnosed with ASD, was rejected.

RQ2: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and instructional strategies perceived self-efficacy as measured by Teachers' Sense of Efficacy Instructional Strategy Subscale (TSES-IS) among special education teachers who teach students diagnosed with ASD?

The second research question was focused on determining the relationship of teachers perceived self-efficacy in instructional strategies (TSES-IS) and overall work engagement (UWES-T). The relationship between TSES-IS scores and UWES-T scores was not statistically significant, $r_s = .221$, $p = .07$ (See Table 4). Therefore, there is not statistical evidence to reject the null hypothesis, that there is no relationship between teachers' self-efficacy in instructional strategies (TSES-IS) and work engagement (UWES-T) among special education teachers who teach students diagnosed with ASD.

RQ3: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and classroom management perceived self-efficacy as measured by Teachers' Sense of Efficacy Classroom Management Subscale (TSES-CM) among special education teachers who teach students diagnosed with ASD?

The third research question was focused on determining the relationship of teachers perceived self-efficacy in classroom management (TSES-CM) work engagement (UWES-T). There was a positive correlation between participants' TSES-CM and UWES-T scores ($r_s =$

.304, p =.01). This indicated that as participants' self-efficacy in classroom management, as measured by TSES-CM scores, increased, their work engagement, as measured by UWES-T scores, also increased (See Table 4). Therefore, the null hypothesis associated with research question 3, that there is no statistically significant positive relationship between work engagement and perceived self-efficacy in classroom management among special education teachers who teach students diagnosed with ASD, was rejected.

RQ4: Is there a positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and student engagement perceived self-efficacy as measured by Teachers' Sense of Efficacy Student Engagement Subscale (TSES-SE) among special education teachers who teach students diagnosed with ASD?

The fourth research question was focused on determining the relationship of teachers perceived self-efficacy in student engagement (TSES-SE) and work engagement (UWES-T). There was a relationship between participants' TSE-SE and UWES-T scores (r_s = .332, p = .005), indicating a significant, positive correlation between teachers perceived self-efficacy in student engagement and work engagement. Therefore, the null hypothesis associated with research question four, that there is no statistically significant positive relationship between work engagement and perceived self-efficacy in student engagement among special education teachers who teach students diagnosed with ASD, was rejected.

Table 4

Spearman's correlation coefficients for the relationship between TSES and UWES scales and sub-scales

	UWES			
TSES	**Vigor**	**Dedication**	**Absorption**	**Total**
TSES-SE	.348**	.314**	.275*	.332**
TSES-CM	.297*	.298*	.256*	.304**

TSES-IS	.268*	.229	.096	.221
TSES-Total	.316**	.290*	.207	.292*

** Correlation is significant at the .01 level; * Correlation is significant at the .05 level.

Summary

A total of 51 participants were gathered for the study. Based on the post hoc power analysis performed, given a medium-sized effect, statistical power of the present study was 71.6%. The majority of participants were female SPED teachers. Most of the participants have completed a Master's degree. The scores on the work engagement subscales were determined to be midrange. The scores on the self-efficacy scale and subscales of participants generally higher than average, based on the TSES norms. Correlation analyses were conducted to determine whether variables of teachers' self-efficacy were positively correlated with the total work engagement scores. It was found that self-efficacy (TSES-T) scores were indeed positively correlated with work engagement (UWES-T). Additionally, self-efficacy in classroom management (TSES-CM), and self-efficacy in student engagement (TSES-SE) were positively correlated with teachers' level of work engagement (UWES-T).

CHAPTER FIVE: CONCLUSIONS

Overview

The majority of previous studies about efficacy focused on general education teachers, with less focus on special education teachers (Chu & Garcia, 2014; Thomas, 2013). The focus of the study was students with ASD. This chapter will present the issues that currently exist when special education teachers have difficulty with perceived self-efficacy and work engagement while working with students with ASD.

Discussion

The primary purpose of this study was to investigate the relationship between perceived self-efficacy and work engagement in special education teachers who teach students with ASD. A bivariate correlational research survey design was used to study this relationship (Gall et al., 2007).

$H_0$1: There is no statistically significant relationship between work engagement, as measured by Utrecht Work Engagement Total Scale (UWES-T), and perceived self-efficacy, as measured by Teachers' Sense of Efficacy Total Scale (TSES-T), among special education teachers who teach students diagnosed with ASD.

This null hypothesis was rejected because it was found that TSES-T scores were positively correlated with UWES-T scores. This indicated that higher levels of overall self-efficacy are associated with higher levels of work engagement. In other words, in the present study, as teachers' overall perceived self-efficacy (TSES-T) increased, so did their level of work engagement (UWES-T). The magnitude of this relationship was a medium-sized effect (Cohen, 1988). This result is consistent with the findings of previous studies about work engagement and self-efficacy. Previous studies determined that perceived self-efficacy, in addition to

personal resources, is positively related to work engagement (Bakker, 2009; Xanthopoulou et al., 2007). Data from the present study replicate this finding in a sample of SPED teachers.

The results of the present study also mirror the findings of previous research on the importance of work engagement and self-efficacy. Specifically, work engagement, coupled with perceived self-efficacy is essential to be proactive in the workplace (Park & Gursoy, 2012; Yakin & Erdil, 2012). According to Federici and Skaalvik (2011), a positive relationship between perceived self-efficacy and work engagement has positive implications for workforces. Teachers with high levels of perceived self-efficacy would result in high levels of work engagement.

Furthermore, this finding contributes to the literature, as there is limited research on perceived self-efficacy among special education teachers. Only three studies were found on perceived self-efficacy in the context of teaching students with autism spectrum disorder (Jennett et al., 2003; Ruble et al. 2011; Ruble et al., 2013). One study examined the relationship between teacher burnout and perceived self-efficacy in the context of special education involving ASD. They found a significant relationship between higher teacher commitment to a teaching program and higher teacher perceived self-efficacy (Jennett et al., 2003). Another focused on examining the sources of self-efficacy among participating teachers who worked with students with ASD and found a relationship between teacher burnout and classroom management (Ruble et al., 2011). A third study examined teachers using a newly developed instrument, the Autism Self-Efficacy Scale for Teachers, for measuring perceived self-efficacy among teachers of students with ASD (Ruble et al., 2013).

However, none of the previous research examining perceived self-efficacy in special education teachers examined its relationship with work engagement. As such, the present study

is the first to contribute to a greater understanding of perceived self-efficacy among teachers and its relationship to teacher engagement in order to identify factors that are essential for supporting teachers who work with students with ASD.

The findings are consistent with the theoretical framework in the study. Perceived self-efficacy involves an individual's belief in his/her ability to accomplish a task, perform a function, or achieve a goal (Bandura, 1986). Moreover, ASD teachers' workplace engagement are directly related to how well they fulfill their teaching roles, as well as how well they perceive their own abilities to do so (Accardo et al., 2017; Carnahan et al., 2011; Lee et al., 2011). As such, teachers with high levels of perceived self-efficacy would lead to high levels of work engagement that has positive outcomes in their teaching roles.

$H_0$2: There is no statistically significant relationship between work engagement, as measured by Utrecht Work Engagement Total Scale (UWES-T), and perceived instructional strategies self-efficacy (TSES-IS) among special education teachers who teach students diagnosed with ASD.

The present study is the first to examine the relationship between work engagement and self-efficacy in instructional strategies for special education teachers. This null hypothesis was retained because it was found that participants scores on the TSES-IS subscale were not statistically significantly correlated with scores on the UWES-T. It should be noted that *p*-value for the relationship between TSES-IS and UWES-T was .07, not quite reaching significance (i.e. $p < .05$). However, the based on the sample of 51 special education teachers, the statistical power of the present study (71.6%) is slightly less than the typical standard for studies in the social sciences (power = 80%). Therefore, further research is needed to determine whether the

relationship between work engagement and perceived self-efficacy in instructional strategies truly exists in a (1) general population of teachers and (2) special education teachers.

Evidence that suggests work engagement and instructional strategies self-efficacy are related does exist in the literature. For example, instructional strategies of teachers are influenced by their self-efficacy. Teachers with high perceived self-efficacy tend to use more innovative instructional practices to achieve success (Shoulders & Krei, 2015). The belief of teachers about their abilities influenced their instructional strategies in the classroom. It was hypothesized that perceived self-efficacy of teachers regarding their instructional strategies would also be related to their work engagement.

Furthermore, the theoretical framework of self-efficacy and work engagement suggests a relationship between the two variables. The more a teacher believes in his or her ability to be able to deliver varied instructional strategies, the higher the work engagement of the teacher. Being able to offer innovative instructional practices could influence the work engagement of the teachers as it could serve as a motivation to voluntary allocated resources to expected tasks. Since they have high levels of perceived self-efficacy, teachers could experience high levels of work engagement because teachers will be more attentive to work-related activities and committed to their work (Park & Gursoy, 2012; Shuck et al., 2013). Moreover, the combination of work engagement and perceived self-efficacy lead to an increase in work productivity (Park & Gursoy, 2012; Yakin & Erdil, 2012).

$H_0$3: There is no statistically significant relationship between work engagement (UWES-T) and perceived classroom management self-efficacy (TSES-CM) among special education teachers who teach students diagnosed with ASD.

This null hypothesis was rejected because there was a significant, positive correlation between TSES-CM scores and UWES-T scores. This indicated that higher levels of classroom management self-efficacy are associated with higher levels of work engagement. As teachers' perceived self-efficacy in classroom management (TSES-CM) increased, so did their level of work engagement (UWES-T). This finding presents a unique contribution to the literature of self-efficacy and work engagement among special education teachers, as it is the first to explore the relationship between work engagement and perceived classroom management self-efficacy.

Previous literature did, however, suggest that a relationship exist between work engagement and perceived classroom management self-efficacy. Teachers with high perceived self-efficacy set the tone for high-quality classroom environments by using new and inventive ideas in the classroom coupled with planning lessons that advance students' abilities (Chacon, 2005; Zee & Koomen, 2016). Also, teacher perceived self-efficacy influences the educational environment (Hinton et al., 2015). According to Boz et al. (2016), the learning environment is an influencing factor on student achievement as well as student engagement. Moreover, perceived self-efficacy mediates the relationship between students' learning environments and their academic achievement (Khan, 2012; Yusuf, 2011). This suggests that there is a positive correlation between students' perceptions of how the classroom environment is structured and academic achievement is gained (Boz et al.; Cheung, 2015; Partin & Haney, 2012). It was hypothesized that teacher perceived self-efficacy leads to better student outcomes, as well as to better work engagement on the part of teachers.

This finding is also aligned with the theoretical framework. The perceived self-efficacy of teachers regarding classroom environment would be related to their work engagement. Work engagement represents positive work experience and attitudes (Park & Gursoy, 2012). If a

teacher has high self-efficacy in classroom management, they are also likely to create a positive work environment and attitude. Because the teacher has perceived self-efficacy in terms of classroom management, the teacher could also have positive experience and attitudes inside the classroom.

$H_0$4: There is no statistically significant relationship between work engagement (UWES-T) and perceived student engagement self-efficacy (TSES-SE) among special education teachers who teach students diagnosed with ASD.

This null hypothesis was rejected because a significant, positive correlation between TSES-SE and UWES-T scores was observed. As participants self-efficacy in student engagement increased, so did their work engagement scores, indicating relationship higher levels of self-efficacy in student engagement and their work engagement. This finding presents a unique contribution to the literature of self-efficacy and work engagement among special education teachers, as no previous study has explored the relationship between work engagement and perceived student engagement self-efficacy.

Previous literature has suggested that a possible relationship between self-efficacy, student engagement, and work engagement exists. For example, one study found that the higher the level of perceived self-efficacy the more likely students are to be engaged in the learning process (Perry & Steck, 2015). Previous research has also explored and found effects of teacher perceived self-efficacy on student engagement (Boz, Yerdelen-Damar, Aydemir, & Aydemir, 2016; Kapoor & Tomar, 2016; Khan, 2012; Ucar & Sungar, 2017; Yusuf, 2011). In fact, one study found that effectiveness of the teacher helps determine student engagement to achieve academically within the classroom (Shoulders and Krei 2015). Moreover, teachers with a strong sense of perceived self-efficacy, being persistent when working with challenging

students has been shown to influence behavioral outcomes (Skaalvik & Skaalvik, 2007). Based on the previous literature, the present study inferred and predicted that a teacher's perceived self-efficacy would influence student engagement that would also influence the work engagement of the teachers. The findings from research question four support this prediction.

Implications

The results of the study add to the existing body of theory because it expanded the application of self-efficacy in the context of social cognitive theory. The results of the study demonstrate that the beliefs of the teacher have significant influence on the social environment of the workplace, which can also foster additional self-efficacy (Tseng & Kuo, 2014). Moreover, the results revealed that special education teachers believed that they have the ability to cope with teaching ASD students (self-efficacy) and that they have significant influence on the workplace environment (the agentic aspect of social cognitive theory).

The results of the study add to the existing body of knowledge as only a few studies have explored self-efficacy of special education teachers. Moreover, there were no studies found that explored the relationship between perceived self-efficacy and work engagement among special education teachers who teach ASD students. The results of the study helped to have a deeper understanding of the experiences of special education teachers and factors that could help them to be more effective teachers. This study could also serve as the catalyst to provide ideas for other researchers to explore the relationship between work engagement and perceived self-efficacy in special education teachers of students with other conditions such as Down's syndrome and Learning Impairment (Dolva, Gustavsson, Borell, & Hemmingsson,

2011), attention deficit hyperactivity disorder (Martin et al., 2014), or blindness (Hartmann, 2012).

Self-efficacy was found to be positively related to work engagement of special education teachers. The results could be used by education administrators in two ways: (a) by offering a better understanding of how the different constructs of perceived self-efficacy, such as classroom management, instructional strategies, and student engagement, relate to work engagement and (b) by providing insights for developing guidelines and protocols to help teachers achieve sufficient self-efficacy to maintain high work engagement. The results could be used to improve work environment that, in turn, will lead to better student outcomes.

Limitations

Quantitative research is also limited such that it takes a lot of time to collect, transcribe, and analyze data. Administering a survey to 71 participants and ensuring that they would be able to answer it completely and return the survey to the researcher was a challenge. To address this limitation, both the TSES-T and UWES-T assessments were converted into electronic versions to ensure compatibility with the SurveyMonkey data collection format to collect responses. The special education teachers were given a two-week window in which to respond to the survey, and a reminder email was sent to all participants after two weeks.

Quantitative research methodology requires a large sample size. The sample size in the current study was 51 special education teachers and a post hoc power analysis confirmed that this number could provide statistically valid results. However, this number could have influenced the results of the study. As previously mentioned, typically in the social sciences, a power of 0.80 is considered the standard goal. The sampling method also was convenience

rather than random. The convenience sample could have affected the validity of the results because their opinions might not be representative of the population.

This quantitative study involves a structured questionnaire with close ended questions. This led to limited outcomes as the results cannot represent the actual occurrence. Additionally, the respondents have limited respondents, based on the options in the structured questionnaire. The respondents could have wanted to provide explanations for their answers.

Recommendations for Future Research

The following are the recommendations for further research:

1. Future research could increase the sample size and employ random sampling to improve the validity of the results.
2. The study could also be replicated in other states to provide more knowledge about the research phenomenon. Results from different states could provide a holistic view of the relationship between efficacy and work engagement among special education teachers.
3. The current study could also be replicated to focus on other students with other conditions such as Down's syndrome and Learning Impairment (Dolva, Gustavsson, Borell, & Hemmingsson, 2011), attention deficit hyperactivity disorder (Martin et al., 2014), or blindness (Hartmann, 2012).
4. A qualitative study could also be conducted to collect rich data about the research phenomenon to have a deeper understanding of the relationship between self-efficacy and work engagement.

5. From the qualitative study, some factors might be uncovered that also affects the relationship between self-efficacy and work engagement, which could also serve as the foundation of a new study.
6. A comparative study could also be conducted that will compare demographic characteristics of special education teachers and how these factors affect the relationship between self-efficacy and work engagement.

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APPENDICES

APPENDIX A: IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

July 6, 2018

Pamella T. Hosley
IRB Exemption 3373.070618: The Relationship between Self-Efficacy in the Classroom and Engagement among Special Education Teachers of Students Diagnosed with Autism Spectrum Disorder

Dear Pamella T. Hosley,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

> (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
> (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

[redacted]

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
The Graduate School

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APPENDIX B: Request for Permission Email

June 13, 2017

Dr. Kimi Sucharski
Accountability
Clarksville-Montgomery County School System
621 Gracey Avenue
Clarksville, TN 37040

Dear Dr. Sucharski:

I am pursuing a Doctoral degree in Curriculum Instruction at Liberty University and I am presently enrolled in Education 989, Dissertation Proposal & Research. A requirement for the course as well as the degree is the development of a proposal for research. This letter is a request for permission to conduct research using Clarksville Montgomery County Special Education teachers to participate in my research study. Participants will be asked to go to SurveyMonkey and click on a link provided and complete the attached survey. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue at any time. At no time will I approach the special education teachers everything will be conducted by email.

The purpose of this study is to investigate the relationship between self-efficacy and work engagement of special education teachers who teach students diagnosed with ASD. My goal is to survey as many elementary, middle and high school teachers who are willing to participate in a two week time frame. The survey will take 15-20 minutes and is completely anonymous. The survey is made up of three parts demographics, Teachers Self-Efficacy Scale and the Utrecht

Work Engagement Scale. I would like to conduct the study in the 2017-2018 school year. Enclosed are copies of the email letters asking the special education teachers to participate and the surveys that the special education teachers would be asked to fill out.

I would like the answer to the following questions:

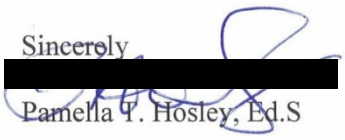
RQ1: Is there a significant positive relationship between work engagement, as measured by Utrecht Work Engagement Total Scale (UWES-T), and perceived self-efficacy, measured by the Teachers' Sense of Efficacy Total Scale (TSES-T), among special education teachers who teach students diagnosed with ASD.

RQ2: Is there a significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and instructional strategies perceived self-efficacy as measured by Teachers' Sense of Efficacy Instructional Strategy Subscale (TSES-IS) among special education teachers who teach students diagnosed with ASD?

RQ3: Is there a significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and classroom management perceived self-efficacy as measured by Teachers' Sense of Efficacy Classroom Management Subscale (TSES-CM) among special education teachers who teach students diagnosed with ASD?

RQ4: Is there a significant positive relationship between work engagement as measured by Utrecht Work Engagement Total Scale (UWES-T) and student engagement perceived self-efficacy as measured by Teachers' Sense of Efficacy Student Engagement Subscale (TSES-SE) among special education teachers who teach students diagnosed with ASD?

Sincerely



Pamella T. Hosley, Ed.S

Mahaffey Middle School

Tnt20plus@gmail.com

(931) 624-8147

APPENDIX C: Letter of Permission Granted

cmcss
The Defining Difference

Clarksville-Montgomery
County School System

Dr. Kimi Sucharski
Accountability
Phone: 931.920.7813
Fax: 931.920.9813
Kimi.sucharski@cmcss.net

From: Dr. Kimi Sucharski 6.25.2017

CMCSS Research Team

To: Pamella Hosley

Subject: Request to Conduct Research in CMCSS

The Clarksville Montgomery County School System Research Committee has met and approved your request to conduct research in the District with Special Education teachers who work with students diagnosed with Autism Spectrum Disorders (ASD) examining the relationship between work engagement and self-efficacy. This includes the collection of achievement and survey data.

Sincerely,

[redacted]

Dr. Kimi Sucharski

CMCSS Accountability and Assessment

Kimi.sucharski@cmcss.net

(931) 920-7813 office

APPENDIX D: Letter of Extension

June 13, 2018

Dr. Kimi Sucharski
Accountability
Clarksville-Montgomery County School System
621 Gracey Avenue
Clarksville, TN 37040

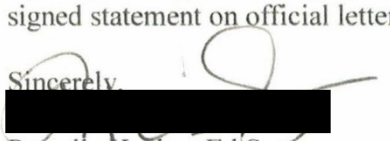
Dear Dr. Sucharski:

On June 17, 2017 you approved my request for my study on The Relationship Between Self-Efficacy in the Classroom and Engagement Among Special Education Teachers of Students Diagnosed with Autism Spectrum Disorder. Due to unforeseen circumstances I am requesting an extension to complete the survey during the 2018-2019 school year. Enclosed you will find my previous copy of my approval letter.

Participants will be asked to go to the webpage https://www.surveymonkey.com/r/X3357H6 and click on the link provided and complete the attached survey. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on official letterhead indicating your approval.

Sincerely,



Pamella Hosley, Ed.S
Special Education Teacher
Mahaffey Middle School
tnt20plus@gmail.com
(931) 624-8147

APPENDIX E: Letter of Extension Granted

cmcss The Defining Difference | Clarksville-Montgomery County School System

Dr. Kimi Sucharski
Accountability
Phone: 931.920.7813
Fax: 931.920.9813
Kimi.sucharski@cmcss.net

From: Dr. Kimi Sucharski 6/13/2018

CMCSS Research Team

To: Pamella Hosley

Subject: Request to Conduct Research in CMCSS Extension

The Clarksville Montgomery County School System Research Committee has met and approved your request for an extension to conduct research in the District with Special Education teachers who work with students diagnosed with Autism Spectrum Disorders (ASD) examining the relationship between work engagement and self-efficacy. This includes the collection of achievement and survey data.

Sincerely,

[redacted]

Dr. Kimi Sucharski

CMCSS Accountability and Assessment

Kimi.sucharski@cmcss.net

(931) 920-7813 office

APPENDIX F: Letter to Administrator

Dear Administrator:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in curriculum instruction. The title of my research project is "The Relationship Between Self-Efficacy in the Classroom Among Special Education Teachers of Students Diagnosed with Autism Spectrum Disorder (ASD)" and the purpose of my research is to investigate the relationship between self-efficacy and work engagement of special education teachers who teach students diagnosed with ASD.

I am writing to request your permission to contact employees of your school district to invite them to participate in my research study.

Participants will be asked to go to Survey Monkey and click on a link provided and complete the attached survey. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue at any time.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on approved letterhead indicating your approval.

Enclosed is a copy from Dr. Kimi Sucharski approving my request to pursue the study.

Sincerely,

[redacted]

Pamella T. Hosley, Ed.S

APPENDIX G: Recruitment Email

Dear Teacher:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in curriculum instruction. The purpose of this study is to investigate the relationship between self-efficacy and work engagement of special education teachers who teach students diagnosed with ASD. I am writing to invite you to participate in my study. The deadline for participation is 28 September 2018.

If you are a special education teacher working in the elementary, middle or high school level, and are willing to participate, you may complete the survey at the link provided. Is should take approximately 15-20 minutes for you to complete the survey. The study is voluntary and the information they provide will be kept confidential to the extent allowable by law. Some steps that will be taken to keep identity confidential will include electronic forms of data will be securely stored with firewalls, and virus detection programs. The researcher will make sure databases and file systems are secure to prevent unauthorized or disruptive access to the data stored. Data will be kept for 3 years then all data will be destroyed.

To participate go to Survey Monkey by clicking on the link provided. Please click on the survey link and the end of the consent information to indicate that you have read the consent information and would like to take part in the survey.

Sincerely,

Pamella T. Hosley, Ed.S.

APPENDIX H: Follow Up Letter to Teachers

Dear Teacher:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in curriculum instruction. About two weeks ago an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to complete the survey if you would like to participate and have not already done so. The deadline for participation is 12 October 2018.

If you choose to participate, you will be asked to complete an electronic survey. It should take approximately 15-20 minutes for you to complete the survey. Your participation will be completely anonymous, and no personal identifying information will be required.

To participate go to Survey Monkey by clicking on the link provided. Please click on the survey link and the end of the consent information to indicate that you have read the consent information and would like to take part in the survey.

Sincerely,

[redacted]

Pamella T. Hosley, Ed.S.

APPENDIX I: Informed Consent

CONSENT FORM

The Relationship Between Self-Efficacy in The Classroom Among Special Education Teachers of Students Diagnosed with Autism Spectrum Disorder (ASD)

Pamella T. Hosley

Liberty University

School of Education

You are invited to be in a research study of self-efficacy and work engagement of special education teachers who work with students diagnosed with ASD. You were selected as a possible participant because you are employed as a special education teacher. Please read this form and ask any questions you may have before agreeing to be in the study.

Pam Hosley, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to investigate the relationship between self-efficacy and work engagement of special education teachers who teach students diagnosed with ASD.

Procedures: If you agree to be in the study, I would ask you to complete an electronic survey that will take you approximately 15-20 minutes.

Risks and Benefits of Participation: The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life. Participants should not expect to receive a direct benefit from taking part in this study. Benefits to society include contributing to ongoing educational research to improve professional development and training for teachers.

Compensation: Participants will not be compensated for participating in this study.

Confidentiality: The study is voluntary and the information they provide will be kept confidential to the extent allowable by law. Some steps that will be taken to keep identity confidential will include electronic forms of data will be securely stored with firewalls, and virus detection programs. The researcher will make sure databases and file systems are secure to prevent unauthorized or disruptive access to the data stored. Data will be kept for 3 years then all data will be destroyed.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or your school district. If you decide to participate, you are free to not answer any questions or withdraw at any time prior to submitting the survey with affecting relationships.

Contacts and Questions: The researcher conducting this study is Pam Hosley. You may ask any questions you have. If you have questions later, **you are encouraged** to contact her at

phosley@liberty.edu. You may also contact the researcher's faculty advisor, Dr. Elgin Hillman at ehillman@liberty,edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 1887, Lynchburg, VA 24515 or email at jrb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understand the above information. I have asked questions and have received answers. I consent to participate in the study. Please click the link below to participate in the survey.

APPENDIX J: Demographic Information

1. You are a licensed teacher endorsed in special education in the state of Tennessee?

   ☐ Yes
   ☐ No

2. The type of teaching certification license you hold:

   ☐ Regular or standard state certificate
   ☐ Alternative certification program
   ☐ Emergency certificate

3. Your special education endorsement area is:

   ☐ ASD Autism _____
   ☐ _____ (Fill in based on TN licensure)
   ☐ Emergency certificate

4. Your teaching certification grade level is:

   ☐ Pre-School and Kindergarten
   ☐ K – 12
   ☐ K –6
   ☐ 6 - 12

5. Your age:

   ☐

6. Your gender:

   ☐ Female
   ☐ Male

7. Your race: (Select all that apply)

   ☐ American Indian or Alaska Native
   ☐ Asian
   ☐ Black or African American
   ☐ Hispanic/Latino
   ☐ Native Hawaiian or Other Pacific Islander
   ☐ White
   ☐ Other. Please specify: _____

8. Highest level of education attained:

   ☐ Bachelors
   ☐ Master's
   ☐ Education Specialist
   ☐ Doctorate

9. I currently teacher in the following setting: (Select all that apply)

- ☐ Resource Periods: ☐
- ☐ Co-Teaching (Inclusion) Periods: ☐
- ☐ Self-Contained (Life Skills) Periods: ☐

10. I currently teach in the following grade level: (Select all that apply)

- ☐ Elementary (K - 5)
- ☐ Middle (6 – 8)
- ☐ High School (9-12)

11. Years I have been teaching as a certified teacher? (include the current year in the total years of teaching).

☐

12. Years I have taught with students who are diagnosed with Autism?

☐

13. I currently teach students diagnosed with ASD?

- ☐ Yes How many? ☐
- ☐ No

APPENDIX K: Teachers' Sense of Self-Efficacy Scale

Teachers' Sense of Efficacy Scale1 (short form)

https://cpb-us-w2.wpmucdn.com/u.osu.edu/dist/2/5604/files/2018/04/TSES-scoring-zted8m-1s63pv8.pdf

APPENDIX L: Utrecht Work Engagement Scale

The **Utrecht Work Engagement Scale** created by Wilmar B. Schaufeli

https://www.wilmarschaufeli.nl/publications/Schaufeli/Tests/UWES_GB_17.pdf

APPENDIX M: Permission to Use the TSES

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy the scoring instructions can be found at:

http://u.osu.edu/hoy.17/research/instruments/

Best wishes in your work,

[redacted]

Anita Woolfolk Hoy, Ph.D.
Professor Emeritus

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