SERGEANTS MAJOR COURSE INSTRUCTOR SELF-EFFICACY ACROSS DEPARTMENTS AT THE UNITED STATES ARMY SERGEANTS MAJOR ACADEMY

by

Anson Cordell Jordan, Sr.

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

Research has highlighted teacher self-efficacy as an influential variable in many educational studies. Teacher self-efficacy not only impacts and influences educational outcomes such as teachers' persistence, enthusiasm, commitment, and instructional behavior, but also affects student outcomes such as motivation, student achievement, and the students' own sense of self-efficacy. The current study utilized a causal-comparative research design and one-way between-subjects analysis of variance (ANOVA) to compare the self-efficacy of instructors across the five departments of the United States Army Sergeants Major Academy's (USASMA) Sergeants Major Resident Course. This study also used an independent samples *t* test to observe differences between sample means of the self-efficacy outcome variable across civilian and military instructors and instructors with education-degrees and those without. The overall self-efficacy of the instructors was measured across the sub-scales of student engagement, instructional strategies, and classroom management. The specific sample for this study comprised 100 instructors from the Sergeants Major Residence Course, located in El Paso, Texas. The 12-question short form of the Ohio State Teacher Efficacy Scale (OSTES), an instrument developed by Tschannen-Moran and Hoy to measure the construct of teacher self-efficacy, was the tool utilized to collect data. The results from this study did not reveal a significant difference in instructors' self-efficacy by their departments or education type; however, there was a significant difference in instructors' self-efficacy based on whether they were civilian or military instructors. Future studies should examine student achievement based on their instructors' level of self-efficacy to determine the extent to which self-efficacy influences academic success.

Keywords: instructor self-efficacy, student engagement, classroom management, instructor strategy

Dedication

This manuscript is dedicated to my daughter, Zoey, and to my twin angels, Cordell and AJ. To “daddy’s little girl”, I hope I have inspired you to believe that you can achieve whatever it is in life that you desire to achieve. A teacher once told me that people could try to take everything away from me, but the one thing they could never take is my education. I pray you aspire to be a lifelong learner and accomplish all the goals that you set for yourself, both educationally and in life. To my twin angels, continue to keep watch over your daddy and the family. I love and miss you. Continue to Rest in Paradise.

Acknowledgements

First, I would like to give reverence to the Holy Trinity: God the Father, God the Son, and God the Holy Spirit. For without them, none of this would be possible. I would like to acknowledge and thank my parents, Rev. and Mrs. John E. Jordan, Sr. for their love and support. Thanks for always believing in your "baby boy" and instilling in me a knowledge of, a faith in, and a love for God. Thanks to my dissertation chair, Dr. Kuhne, for all your hard work and dedication and for encouraging me to continue on when I was ready to throw in the towel. I would also like to thank the Non-Commissioned Officers Leadership Center of Excellence and the Sergeants Major Academy for supporting my research. The words of this dissertation manuscript may be mine, but I know that I did not reach this milestone by myself. I want to thank everyone who cheered from the sidelines, supported behind the scenes, and offered prayers, thoughts, kind words and deeds, and encouragement. Your thoughtfulness is truly appreciated as you have helped and sustained me throughout every step of this journey. To all of my family, friends, brothers and sisters in arms, fraternity brothers, and anyone who has supported me and do not fall into either of those categories, I Love You All!!!

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Abbreviations

ANOVA: One-Way Between-Subjects Analysis of Variance

DAC: Department of the Army Civilian

DAO: Department of Army Operations

DCL: Department of Command Leadership

DFM: Department of Force Management

DJIIM: Department of Joint Interagency, Intergovernmental, and Multinational

DPS: Department of Professional Studies

HFCE: Higher Education Funding Council for England

M.Ed.: Master of Education

MES-UC: Motivation and Engagement Scale–University/College

NSSE: National Survey of Student Engagement

OSTES: Ohio State Teacher Efficacy Scale

SD: Standard Deviation

SEI: Student Engagement Instrument

SMC: Sergeants Major Course

SPSS: Statistical Package for the Social Sciences

TSES: Teachers' Sense of Efficacy Scale

USASMA: United States Army Sergeants Major Academy

CHAPTER ONE: INTRODUCTIONS

Overview

The purpose of this chapter is to introduce the background for this quantitative causal-comparative study regarding teacher self-efficacy of the Sergeants Major Resident Course at the United States Army Sergeants Academy. This chapter will define the mission of the Sergeants Major Resident Course and the problem that arose after the course underwent the accreditation process. The chapter continues by defining teacher self-efficacy and highlights some of the outcomes it impacts and influences. The primary components of this introductory chapter include the background, statement of the problem, purpose statement, significance of the study, research questions, and definitions.

Background

The mission of the Sergeants Major Course is to educate and promote the future senior enlisted leaders of the United States Army, sister services, and the nation's allied militaries (NCO Leadership Center of Excellence, 2018). Since 1972 the U.S. Army Sergeants Major Academy (USASMA), has developed, integrated, and delivered education and training readiness for the Army graduating hundreds of thousands of service members from all five branches of the US military and over sixty international military services (NCO Leadership Center of Excellence, 2018). To finally align the enlisted education with the officer counterparts who attend the US War College, the USASMA Sergeants Major Course underwent the accreditation process in 2018. Beginning with Class 70, which attended the USASMA from July 2019-June 2020, the Sergeants Major Course became a bachelor's degree-granting course. The accreditation process required a significant overhaul in the Sergeants Major Course's design and curriculum, to include the requirement that all instructors of the course possess a master's

degree. This requirement led to a lot of senior instructors, some with more than 20 years of experience in teaching the course now being unqualified to teach the course. This required an influx of both civilian and military instructors to fill those positions. Although the new instructors will possess the requisite master's degree, many of them do not have experience teaching adults, do not have a degree in adult education, or do not have an education-background degree.

Bandura (1977) defines teacher self-efficacy as a teacher's belief in their own ability to guide their students to success, to positively affect students, and to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated. Teacher self-efficacy has been linked to a multitude of substantial and philosophical outcomes in education. These outcomes influenced by teacher self-efficacy impact both teachers (Tschannen-Moran & Hoy, 2001) and students (Anderson, Greene, & Loewen, 1988; Midgley, Feldlaufer, & Eccles, 1989; Moore & Esselman, 1992).

In order to gain a theoretical understanding of teacher self-efficacy, the theories of Albert Bandura (1977) and Julian B. Rotter (1966) was employed. Bandura's (1977) body of work surrounds social cognitive theory, a theory of learning which holds that portions of an individual's knowledge acquisition can be directly related to observing others within the context of social interactions and experiences. Bandura theorizes that one's presumed beliefs about their skills, abilities, and consequences of their efforts significantly influences how people behave. Bandura's (1986) social cognitive theory emphasizes that these beliefs in self-efficacy help sculpt and regulate peoples' choices, the effort they exude, and their demonstration of resolve and perseverance when difficulties and complications arise.

Perceived control is a second strongly related construct of teacher self-efficacy. Materializing from Julian Rotter's (1966) social learning theory and his research on locus of control, perceived control refers to general expectancies about whether outcomes are controlled by one's behavior or by external influences. In his research, Rotter (1966) theorizes that an internal locus of control should espouse self-directed courses of action, in contrast to an external locus of control, which should discourage them. Rotter's social learning theory, a theory of learning and social behavior which proposes that new behaviors can be acquired by observing and imitating others, has spawned research groups such as RAND (Armor et al., 1976) and researchers (Guskey, 1981; Rose & Medway, 1981; Ashton et al., 1982; Gibson & Dembo, 1984; Greenwood, Olejnik, & Parkay, 1990; Tschannen-Moran & Hoy, 2011) to attempt to capture a way to measure teacher self-efficacy. This study examined how social learning theory and social cognitive theory relates to an instructor's self-efficacy, its measurement, and its contributing factors such as motivation, commitment, enthusiasm, and instructor and student achievement.

A third theoretical perspective which served as a foundation for this study is Malcolm Knowles' (1980) Adult Learning Theory. In 1980, Knowles hypothesized and created four assumptions concerning the characteristics, attitudes, and behaviors of adult learners. In his 1984 work, Knowles not only added a fifth assumption but also suggested four principles of andragogy that should be applied to adult learning. In his later work on Adult Learning Theory, Knowles (2005) makes five assumptions about adult learners that differentiate them from young learners and expounds upon four principles of andragogy that should be applied by all teachers to adult learning.

Tschannen-Moran and Hoy (2001) developed an instrument to measure the construct of teacher self-efficacy. The researchers examined various instruments already in use as well as the

problems identified with each and subsequently introduced a new measure of teacher self-efficacy based on a model of teacher self-efficacy suggested by Tschannen-Moran, Woolfolk Hoy, and Hoy (1998), along with reliability and validity data from three studies. The new instrument, named the Ohio State Teacher Efficacy Scale (OSTES), was examined in three separate studies to test for structure, reliability, validity, and appropriateness for both pre-service and in-service teachers. The conclusion of those three studies resulted in an instrument with two forms: a long form with 24 items and a short form with 12 items that surveyed the three concepts of student engagement, classroom management, and instructional strategies (Tschannen-Moran & Hoy, 2001).

Problem Statement

Teacher self-efficacy is defined as a teacher's belief in their own ability to guide their students to success, to positively affect students, and to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated (Bandura, 1977). Research has supported the construct of teacher self-efficacy as an influential variable in many educational studies. Teacher self-efficacy not only impacts and influences teacher's educational outcomes such as teachers' persistence, enthusiasm, commitment, and instructional behavior (Tschannen-Moran & Hoy, 2001), but also affects student outcomes such as motivation (Midgley, Feldlaufer, & Eccles, 1989), student achievement (Moore & Esselman, 1992), and the students own sense of self-efficacy (Anderson, Greene, & Loewen, 1988). The problem is that recent changes in the course design, curriculum, and accreditation of the USASMA's Sergeants Major Course could have affected instructor self-efficacy as instructors are teaching in departments they are not completely comfortable with or teaching a curriculum in which they are not accustomed.

Purpose Statement

The purpose of this quantitative study was to determine the self-efficacy of the USASMA Sergeants Major Course instructors across the five departments of the course and to make recommendations to the educational leadership of the USASMA to improve the self-efficacy of its instructors. The current study measured the construct of instructor self-efficacy against the sub-scales of student engagement, instructional strategies, and classroom management. This study utilized a quantitative causal-comparative research design methodology. Causal-comparative research, also known as ex-post-facto research, seeks to discover possible causes and effects of a personal characteristic by comparing individuals in whom it is present with individuals in whom it is absent or present to a lesser degree (Gall, Gall, & Borg, 2007). This study attempted to generalize that there is no significant difference in Sergeants Major Residence Course instructor self-efficacy across the departments (subjects) of professional studies, command leadership, army operations, force management, distance education, and joint interagency, intergovernmental, and multinational. The target population was military instructors at senior level military institutions. The accessible population included instructors of the Sergeants Major Residence Course at the United States Army Sergeants Major Academy. The setting for this research study was the United States Army Sergeants Major Academy, located in Fort Bliss (El Paso), Texas. Participation in the study was restricted to current instructors whose primary duty is to instruct the Sergeants Major Resident Course.

Significance

This study sought to improve teacher self-efficacy and all the tenets and benefits of teacher self-efficacy at one of the prestigious US military institutions of higher learning. The institution just underwent the accreditation process and is now a bachelor's degree-granting

institution. Becoming an accredited institution required the institution to make some significant changes in the way it delivered its content and who delivered the content. The required changes resulted in many senior instructors, some with more than 20 years of experience in teaching the course, now being unqualified to teach the course. This required an influx of both civilian and military instructors to fill those positions. Although the new instructors will possess the requisite master's degree, many of them do not have experience teaching adults, do not have a degree in adult education, or do not have an education-background degree.

The added significance of this study included being able to provide the leadership of this institute of higher learning with an assessment of their practices and recommendations to improve professional development and teaching practices. A final significance of this study was to demonstrate that there is a viable and reliable instrument to measure self-efficacy at institutions of higher learning.

Research Questions

RQ1: Is there a difference in USASMA Sergeants Major Course instructors' overall self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ2: Is there a difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ3: Is there a difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership,

army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ4: Is there a difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ5: Is there a difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ6: Is there a difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ7: Is there a difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ8: Is there a difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ9: Is there a difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ10: Is there a difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ11: Is there a difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ12: Is there a difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

Definitions

1. *Classroom management* - refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class (The Glossary of Education Reform, 2014).
2. *Department of Army Operations (DAO)* - is part I of the military science program and the foundation for the SMC. Students study the central concept of Unified Land Operations. This includes that Army units seize, retain, and exploit the initiative to gain and maintain a position of relative advantage in sustained land operations to create conditions for favorable conflict resolution. The DAO curriculum has four areas of study based on this central concept, the operational environment, decisive action, mission command, and planning for unified land operations. The students enhance their understanding of these areas though the use of history, theory, doctrine, and blended learning (NCO Leadership Center of Excellence, 2019).
3. *Department of Command Leadership (DCL)* - focuses on the "Be", "Know," and "Do" aspects of leadership in order to teach students how to develop and hone their skills, knowledge, and abilities to lead at the operational and strategic levels. While in this department students will use a blend of military and civilian case studies to critically analyze contemporary and historical issues in an effort to expand their leadership perspective and gain a greater understanding of the challenges Sergeants Major face as they work to improve individuals and organizations while functioning in today's

operational environment. The curriculum in the DCL is designed to enable future Sergeants Major to speak the same language as their officer counterparts and understand the thought processes they will use to provide timely and relevant input and advice when confronted with the issues and complexities of leadership at the operational and strategic levels (NCO Leadership Center of Excellence, 2019).

4. *Department of Distance Education (DDE)* - provides senior noncommissioned officers with the highest quality educational experience by engaging distance learning (DL) strategies to develop agile and adaptive leaders who can meet the challenges of unified land operations in an era of persistent conflict IAW current doctrine. The DDE is responsible for executing the SMC for an average of 1,300 students in a nonresident status annually via 6 simultaneous iterations of varied course formats tailored to the target audience. The objective of the department is to deliver learning outcomes equivalent to the traditional classroom environment (NCO Leadership Center of Excellence, 2019).
5. *Department of Force Management (DFM)* - is designed to inform the "how to" and "why" of determining force requirements and alternative means of resourcing Soldier training requirements, in order to accomplish Army functions and missions as related to their unit and Army Command (ACOM)-level management positions within Army organizations. This department provides a systemic overview of "How the Army Runs". Students will learn the constitutional, statutory, and regulatory basis for the force projection Army and the capabilities that must be sustained through management of doctrinal, organizational, and materiel change. They will become familiar with Army organizational roles, functions, and missions, especially at the Army Command and

Army Secretariat/Staff levels. They will also be introduced to the established force management processes; from the determination of force requirements through to the resourcing of those requirements and the assessment of their utilization in order to accomplish Army functions and missions. At the completion of the DFM semester, a successful student will be able to define the roles that Sergeants Major have in the force management process (NCO Leadership Center of Excellence, 2019).

6. *Department of Joint Interagency, Intergovernmental, and Multinational (DJIIM)* - builds on the study of critical and creative thinking, as well as problem solving. If the student understands the broad strategic environment within which individual Services and JIIM forces and capabilities are used, these lessons will help them understand the joint and Army doctrine that supports planning and the employment of these forces and capabilities. These lessons also build on an organizational level leader's perspective of change, culture, ethics, and the need for influencing organizations that students will analyze (NCO Leadership Center of Excellence, 2019).
7. *Department of Professional Studies (DPS)* - consists of 23 lessons totaling 180 hours in Broadening Topics and an additional 120 hours in Elective Topics. An integrated Broadening and elected study education produce a thoughtful and well-informed leader. It cultivates individual freedom through reflection and self-awareness. The department is designed to allow leaders to focus on areas they wish to develop, while generating an environment where individuals analyze critical thinking assignments to develop future decision-making (NCO Leadership Center of Excellence, 2019).
8. *Instructional strategies* - techniques teachers use to help students become independent, strategic learners. These strategies become learning strategies when students

independently select the appropriate ones and use them effectively to accomplish tasks or meet goals (Alberta Learning, 2002).

9. *Self-efficacy* - an individual's belief in their innate ability to achieve goals (Bandura, 1977)
10. *Sergeants Major Course (SMC)* - The Sergeants Major Course (SMC) is the capstone of the Army's Noncommissioned Officer Professional Development System (NCOPDS) and seeks to educate master sergeants and sergeants major to effectively assist commanders and field grade officers accomplish their units' missions. The Resident Course is attended by senior non-commissioned officers of the Army, Marines, Navy, Air Force, Coast Guard, and international partner and ally militaries (NCO Leadership Center of Excellence, 2019).
11. *Social cognitive theory* - **t**heory of learning which holds that portions of an individual's knowledge acquisition can be directly related to observing others within the context of social interactions, experiences
12. *Social learning theory* - theory of learning and social behavior which proposes that new behaviors can be acquired by observing and imitating others
13. *Student engagement* - refer to the levels of a student's involvement and interest in their learning and their connectedness to their classes, institutions, and each other (Axelson & Flick, 2011). It is also the extent to which students are engaging in activities that higher education research has shown to be linked with high-quality learning outcomes (Krause & Coates, 2008).
14. *United States Army Sergeants Major Academy (USASMA)* - The United States Army Sergeants Major Academy formed on 1 July 1972 and began its program of instruction on

8 January 1973. On 21 March 2018, USASMA became part of the U.S. Army Command and General Staff College (CGSC) and is recognized by the Higher Learning Commission as a CGSC branch campus on Fort Bliss, TX. This enables CGSC to offer the BA in Leadership and Workforce Development as a bachelor's degree completion program for SMC students at USASMA (NCO Leadership Center of Excellence, 2019).

CHAPTER TWO: LITERATURE REVIEW

Overview

This literature review provides the reader with a theoretical understanding of instructor (teacher) self-efficacy and classroom management. This body of knowledge, while helpful to researchers studying instructor self-efficacy, highlights the literature gap that exists concerning measuring instructor self-efficacy in institutions of higher education. The conceptual framework of this inquiry was based on the theories of Albert Bandura (1977) and Julian B. Rotter (1966). The review of literature indicated that many significant and profound educational outcomes have been proven to be related to teacher self-efficacy. Teacher self-efficacy not only impacts and influences teacher's educational outcomes such as teachers' persistence, enthusiasm, commitment, and instructional behavior (Tschannen-Moran & Hoy, 2001), but also affects student outcomes such as motivation (Midgley, Feldlaufer, & Eccles, 1989), student achievement (Moore & Esselman, 1992), and the students own sense of self-efficacy (Anderson, Greene, & Loewen, 1988).

Another theoretical framework on which this study was based is Malcolm Knowles' (2005) Adult Learning Theory. Malcolm Knowles, a renowned educator and theorist, is known for his work in advancing the field of adult learning and coining the term "andragogy" which refers to the art and science of adult learning. In his Adult Learning Theory, Knowles (2005) makes five assumptions (self-concept; adult learner experience; readiness to learn; orientation to learning; and motivation to learn) about adult learners that differentiate them from young learners and expounds upon four principles of andragogy that should be applied to adult learning. Those four principles are centered around the adult learners' experiences, ability to be involved in the planning and evaluation of what they learn, finding relevance and value in what they are

learning, and having learning that is problem-centered and not content-centered. The review of literature illustrated that a relationship exists between the attitudes and behaviors of adult learners and teacher develop and classroom management. Furrer and Skinner (2003) hypothesizes that in high-quality relationships, relatedness is a critical self-system process in itself and intrinsically has an energizing function on the self which is activated through mood, attitude, and positive affect.

Theoretical Framework

Creswell (2009) expresses that there is an irrefutable link between theoretical framework and quantitative studies. A theoretical framework provides an "explanation of a certain set of observed phenomena in terms of a system of constructs and laws that relate these constructs to each other" (Gall, Gall, & Borg, 2007, p. 32). Quantitative studies research design employs deductive reasoning, which begins with identifying the theoretical framework that will provide structure and guide the research project (Creswell, 2009). This literature review examined how social learning theory and social cognitive theory relates to an instructor's self-efficacy, its measurement, and its contributing factors such as motivation, commitment, enthusiasm, and instructor and student achievement.

Social cognitive theory is a theory of learning which holds that portions of an individual's knowledge acquisition can be directly related to observing others within the context of social interactions and experiences. Over 40 years ago, Albert Bandura (1977) theorized that the way in which people behave is mightily influenced and impacted by the beliefs they presume about their capabilities and about the outcomes of their efforts. Bandura's (1986) social cognitive theory accentuates that these beliefs in self-efficacy help shape and govern peoples' choices, the effort they exude, and their demonstration of resolve and perseverance when difficulties and

complications arise. As part of his continued work on social cognitive theory, Bandura (1997) added that self-efficacy beliefs also served as a predictor of how effectively people monitor and motivate themselves and what they achieve. These predictive behaviors have served as a premise and motivator for researchers to devote ample time and attention to the influences of self-efficacy in educational settings (Pajares, 2006).

A limitation of much of this initial research is that it has solely explored the self-efficacy of students (Brown & Lent, 2006; Schunk & Pajares, 2005; Zimmerman, 2000), although it has been documented that teachers' self-efficacy levels strongly influence classroom management, function, and achievement. It is contended before teachers can seek to help students improve their self-efficacy and academic achievements, they must first attend to the foundations underlying these beliefs in themselves (Bandura, 2001). Meaningful, though unpresumptuous, associations have been discovered between the self-efficacy of a teacher and the achievements of their students (Klassen & Tze, 2014). Teachers with a high sense of self-efficacy, in comparison with those who doubt themselves and their abilities, characteristically employs more effective teaching practices and strategies, are more committed to their craft and the profession, and are less prone and susceptible to burnout (Zee & Kooman, 2016).

Realizing the benefits that accompanies a teachers' high sense of self-efficacy has contributed to researchers directing their attention to teachers' self-efficacy and the underlying sources which contribute to their beliefs. Researchers sought to determine what experiences or psychological processes contributed to some teachers have strong beliefs in their abilities and caused other teachers to have doubt. Despite the various attempts to unearth the answers to these questions, inconsistencies in how self-efficacy is conceptualized and measured, prevented a clear

and conceptual understanding from being obtained. In their review of teacher self-efficacy research conducted from 1998-2009, Klassen et al. (2011) drew the following conclusion:

> Insufficient attention has been paid to the sources of teachers' self- and collective self-efficacy, and progress in teacher self-efficacy research has suffered as a result. A scientific understanding of teachers' self- and collective self-efficacy can only be fostered if reliable and valid measurements of the sources of teacher self-efficacy—the very foundation of the construct—are designed. The related area of student self-efficacy has been well served by recent advances by Usher (e.g., Usher 2009), but no similar work has been completed for teacher self-efficacy. (p. 32).

A second closely associated construct of teacher self-efficacy is perceived control. Emerging from Julian Rotter's (1966) social learning theory and his research on locus of control, perceived control refers to general expectancies about whether outcomes are controlled by one's behavior or by external influences. In his research, Rotter (1966) theorizes that an internal locus of control should espouse self-directed courses of action, in contrast to an external locus of control which should discourage them. Grounded in Rotter's social learning theory, a theory of learning and social behavior which proposes that new behaviors can be acquired by observing and imitating others, and his research on locus of control, Rand researchers attempted to capture a way to measure teacher self-efficacy. The Rand measure was a simple idea of a teacher's self-perception of self-efficacy based on just two items. Using Rotter's work as a theoretical base, the Rand researchers envisaged teacher self-efficacy as the extent to which teachers believed whether control of reinforcement lay within them or in the environment (Armor et al., 1976). Success of the Rand studies spurred other researchers to expand and refine the measure in hopes of capturing more of the teacher self-efficacy construct (Guskey, 1981; Rose & Medway, 1981;

Ashton et al., 1982; Gibson & Dembo, 1984; Greenwood, Olejnik, & Parkay, 1990; Tschannen-Moran & Hoy, 2011).

Knowles (2005) believed that adult learners should feel respected, accepted, and supported and that there exists a "a spirit of mutuality between teachers and students as joint inquirers" (p. 58). Knowles (1984) states that one of the characteristics that distinguishes an adult learner from a child learner is that the adult is an individual who believes that he or she is responsible for what happens to them and wants to take charge of their own life. In doing so, the adult learner is usually motivated to make individual change when learning is relevant to job, aligns with their personal life goals, comes from a trusted source, and they can learn through exploration. The adult educator must be able to identify these motivators in their adult learners and be the agent that helps the student make the individual change that they desire to make.

In 1980, Knowles created four assumptions concerning the characteristics, attitudes, and behaviors of adult learners, and in 1984, added a fifth assumption (Knowles, Holton III, & Swanson, 2005). The original four were self-concept, adult learner experience, readiness to learn, and orientation to learning, and the latter added assumption is motivation to learn. Self-concept describes the transition that one makes from being a dependent personality toward being a self-directed human being as they undergo the maturation process. As one matures, he or she accumulates a vast reservoir of knowledge that contributes to their adult learning experiences. The mature adult learner's readiness to learn shifts more to learning concepts concerning the development of their life and social skills and the orientation is focused on immediate application and shifts from one of subject- centeredness to one of problem centeredness. As many other researchers, philosophers, educators, and theorists have discovered, Knowles realized that

motivation is a key aspect to learning and found that adult learners possess motivation that is mostly intrinsic (1984).

In his 1984 work, Knowles not only added a fifth assumption, but also suggested four principles of andragogy that should be applied to adult learning: 1) adults need to be involved in the planning and evaluation of their instruction; 2) experience, including mistakes, provides the basis for the learning activities; 3) adults are most interested in learning subjects that have immediate relevance and impact to their job or personal life; and 4) adult learning is problem-centered rather than content-oriented.

Related Literature

Sources of Self-Efficacy

In his continued body of work and constant refinement of his social cognitive theory, Bandura (1986) conceive a viewpoint of "human functioning in which individuals are neither unwillingly shaped by environmental forces nor automatically determined by their genetic endowments" (Morris, Usher, & Chen, 2016, p. 797). Bandura (1986) believes the five interrelated human capabilities of forethought, self-reflective capability, self-regulatory capability, vicarious capability, and symbolizing capability are the core and are at the heart of social cognition. Bandura (1986) suggested that individuals' self-efficacy reflection and evaluation is done by interpreting information from four primary sources: mastery experience, vicarious experience, social persuasions, and physiological and affective states.

Enactive mastery experience. Of the four principal sources of self-efficacy beliefs, enactive mastery experience is considered to be the most important and salient source of self-efficacy because it provides the most authentic evidence of whether one can muster what it takes to succeed (Bandura, 1997; Usher & Pajares, 2008). Enactive mastery experience, also referred

to as performance accomplishments (Bandura, 1977) and enactive attainments (Bandura, 1986), is a psychological state through which a one organizes their beliefs regarding ability to accomplish a goal or task from a variety of sources. The premise of this concept is that one who view their pass experiences and tasks as successes will be more likely to approach future endeavors with more confidence. On the other hand, those who believe they have failed in past tasks will be more likely to have doubt in their abilities. Multiple research and reviews have been conducted in an attempt to establish a relationship between self-efficacy and its sources. Correlation scores for enactive mastery experiences ranged from .29 to .67 with a median of r = .58 (Britner & Pajares, 2006; Klassen, 2004; Pajares, Johnson, & Usher, 2007). Unlike the other three sources of self-efficacy, the correlational relationship between enactive mastery experience and self-efficacy were significant in ever study. Enactive mastery experience has constantly been demonstrated to be a predictor of self-efficacy in regression analyses. To date, there has only been one study (Gainor & Lent, 1998) in which mastery experience did not predict self-efficacy.

Vicarious experiences. Vicarious experiences, or self-modeling, "is derived from observing a social model, or even oneself, perform a task" (Morris, Usher, & Chen, 2016, p. 797). When the comparison group is supposed to be like the observing individual, the vicarious experience is deemed to be exceptionally potent, and the effects profound. Because individuals often judge their abilities and capabilities by comparing themselves to those whom they perceive to be like themselves, modeling success is an effective and valuable measure of promoting self-efficacy. Models who are transparent in their struggle to overcome an obstacle are more likely to enhance an observing individual's self-efficacy than models who are portrayed as making only a few mistakes (Kitsantas, Zimmerman, & Cleary 2000). In contrast to enactive mastery

experience, relationships between vicarious experience and self-efficacy have been inconsistent, with scores ranging from .09 to .58, with a median of .34 (Britner & Pajares, 2006; Klassen, 2004; Pajares, Johnson, & Usher, 2007), and other studies producing even lower correlational scores (Lent, Lopez, & Bieschk, 1991; Lopez & Lent, 1992; Stevens et al., 2007).

Social persuasions. The third source of self-efficacy, social or verbal persuasions, in essence, is encouraging the individual. Encouragement from peers, family members, trusted advisors, and mentors can boost an individual's confidence in their abilities. Social and verbal persuasions do not come without limitations. First, the individual receiving the feedback must view the person giving the feedback and offering praise as someone who is credible. Also, the increases in self-efficacy attributed to social persuasions are often not enduring. Researchers have hypothesized that it may be easier to undermine an individual's self-efficacy through social persuasion than enhance one's self-efficacy; particularly in the formative academic and professional career stages (Evans, 1989). Correlations between social persuasions and self-efficacy has also shown inconsistencies with scores ranging from -.05 to .62 with a median score of $r = .39$ (Britner & Pajares, 2006; Klassen, 2004; Lent, Lopez, & Bieschk, 1991; Lopez & Lent, 1992; Pajares, Johnson, & Usher, 2007; Stevens et al., 2007).

Physiological and affective states. The fourth and final source of self-efficacy is physiological and affective states, also known as emotional arousals. Physiological and affective states such as fatigue, mood, stress, and anxiety are relied on by individuals when assessing their abilities in situations. The intensity of one's state will contribute to their assessment of their ability. An individual who is frustrated, distracted, or discouraged is less likely to succeed. Badura (1997) postulated that modest levels of emotional arousals steer to optimum performance, a contention buttressed by multiple empirical findings (Cassady & Johnson 2002;

Keeley, Zayac, & Correia, 2008). Correlational scores between physiological and affective states and self-efficacy ranged from -.08 to -.57, with a median of -.33 (Hampton, 1998; Lopez & Lent, 1992; Panagos & DuBois, 1999).

Measurements of Self-efficacy

Bandura's four sources. As of 2017, only two measures had been developed and published that measures all four sources of self-efficacy in the domain of teaching as described by Bandura (1993) (Morris, Usher, & Chen, 2016). The first measure, developed by Heppner (1994) is a four-item scale developed to "evaluate the influence of a teaching practicum on five graduate instructors' self-efficacy" (Morris, Usher, & Chen, 2016, p. 802). There are no studies, investigations, or reviews which provide any evidence of validity for this measure. The second measure, a 30-item measure developed by Poulou (2007), was comprised to measure the self-efficacy among pre-service teachers in Greece. Using results derived from factor analysis, Poulou (2007) combined the enactive mastery experiences and social persuasion sources into one subscale entitled "mastery experiences with social/verbal persuasion" (p. 176). In Poulou's (2007) original study, the Cronbach's alpha reliability score was considerably low, $.72 \leq \alpha \leq .79$; however, in a subsequent study in which O'Neil and Stephenson (2012) built upon the work of Poulou and used a shorter adapted version of the measure, the Cronbach's alpha reliability score rose to $.75 \leq \alpha \leq .82$.

Teacher self-efficacy. Tschannen-Moran and Hoy (2001) conducted a study reviewing many of the major measures which had been developed to capture the construct of teacher self-efficacy. In conducting their review, the researchers discovered persistent measurement problems that plagued previous researchers from effectively capturing the construct, and subsequently proposed a new measure of teacher self-efficacy along with validity and reliability

data from additional studies. Tschannen-Moran and Hoy were not the only researchers to bring light to the plight of research, attempting to capture the construct of teacher self-efficacy. Klassen et al. (2011) also noted the quandaries conceptually troubled measures attempting to measure teacher self-efficacy. Klassen et al. articulated that:

> almost one third of teachers' self-efficacy studies in our search used variations of the conceptually troubled Gibson and Dembo (1984) Teacher Self-efficacy Scale (TES), notwithstanding the prominent warnings offered by Henson (2002), Henson et al. (2001), and Tschannen-Moran and Woolfolk Hoy (2001). (p. 36).

Rotter's social learning theory themed measures. The first attempts to develop measures to capture the construct of teacher self-efficacy was based on Rotter's (1966) social learning theory and his works on locust of control.

Rand measure. The first measure examined by Tschannen-Moran and Hoy was the Rand measure. The Rand measure was a simple idea of a teacher's self-perception of self-efficacy based on just two items. Using Rotter's work as a theoretical base, the Rand researchers envisaged teacher self-efficacy as the extent to which teachers believed whether control of reinforcement lay within them or in the environment (Armor et al., 1976). In a subsequent study, Rand researchers concluded that the sense of self-efficacy of a teacher had a strong positive correlational link not only to student performance but also to the percent of project goals achieved and the amount of teacher change (Berman et al., 1977). Success of the Rand studies spurred other researchers to expand and refine the measure in hopes of capturing more of the teacher self-efficacy construct.

Responsibility for student achievement. Building on Rotter's foundation and shortly after the initial Rand studies, Guskey (1981) developed a 30-item instrument to measure

responsibility for student achievement. Using excerpts and explanations of Weiner's (1979) attribution theory, Guskey (1981) offered four types of causes for success or failure: specific teaching abilities, the effort put into teaching, the task difficulty, and luck. When comparing his scores from the responsibility for student achievement measure with the teacher self-efficacy scores of the first two Rand studies, Guskey (1981) found significant positive correlations between teacher self-efficacy and responsibility for both student success and student failure.

Teacher locust of control. Almost simultaneously, as Guskey was creating the responsibility for student achievement measure, Rose and Medway (1981) developed the teacher locust of control, a 28-item measure in which half the items described situations of student success and the other half, student failure. Correlation scores found that the teacher locust of control measure was a better predictor of teacher behavior and not necessarily teacher self-efficacy. Thus, the measure never received full acceptance, and all but disappeared from literature soon after it was proposed (Tschannen-Moran & Hoy, 2001).

Webb scale. Shortly after the development of measures by Guskey and Rose and Medway, another group of researchers developed the Webb scale (Ashton et al., 1982) seeking to expand upon the work of the Rand studies and attempting to extend the measure of teacher self-efficacy while maintaining a narrow conceptualization of the construct. Like the teacher locus of control measure, the Webb scale never gained traction and could not be found in any published studies or research beyond the original study (Tschannen-Moran & Hoy, 2011).

Bandura's social cognitive theory themed measures. While one strand of self-efficacy measures grounded in Rotter's (1966) social learning theory were being developed, a second strand of measures based on Bandura's (1977) social cognitive theory was also emerging. A vital component of the social cognitive theory and the measures derived from it is the proposal of

outcome expectancy. In contrast to efficiency expectations, which is an individual's conviction that they can choreograph the activities to perform a given task, outcome expectancy is an individual's estimate of accomplishing the given task at a prescribed competency level (Bandura, 1986).

Gibson and Dembo's teacher self-efficacy scale. The late 1970s and early 1980s were riddled with a plethora of measures attempting to determine the construct of teacher self-efficacy. Building on the design of the Rand studies, but also incorporating the conceptual underpinnings of Bandura's social cognitive theory, Gibson and Dembo (1984) developed a 30-item instrument to measure teacher self-efficacy. Factor analysis yielded a two-factor structure, a result that perplexed Gibson and Dembo (Tschannen-Moran & Hoy, 2001). The researchers assumed the two factors reflected the expectancies of Bandura's theory, self-efficacy, and outcome expectancy. Other researchers have used Gibson and Dembo's items to confirm the existence of the two-factor structure (Anderson, Greene, & Loewen, 1988; Moore & Esselman, 1992; Soodak & Podell, 1993).

The Ashton vignettes. Ashton et al. (1984) sought to support the assumption that teacher self-efficacy is context specific. Along with her colleagues, Ashton (1984) established a series of vignettes that describes situations most probable for a teacher to encounter. The vignettes were then presented to teachers and their judgment in being able to handle the situation effectively was measured. This measure also was never widely accepted, and in their review Tschannen-Moran and Hoy (2001) were only able to locate one study that used the Ashton vignette scales since its inception in the original study.

Assumptions of Adult Learners

Self-concept. Malcom Knowles' (1984) expresses that as a person matures, his or her self-concept moves from one of being a dependent personality toward one of being a self-directed human being. The literature ensures that a clear distinction is made between two terms, "self-direction" and "self-concept" that are often erroneously synonymously used. The literature describes self-direction in the relationship to the adult learner's responsibility for his or her development, while self-concept is described in the relation of the adult learner's acquired maturation and independence which has made the learner capable of learning more and better (Andrade, Neves, Sanna, & Draganov, 2013; Timmins, 2008). Despite pessimistic viewpoints regarding the importance of self-efficacy and self-concept in the theoretical, historical, and practical context of education, the literature reveals that self-views or self-concept bolster predictive validity (Swann, Chang-Schneider, & McClarty, 2007), predict the type of feedback sought from others (Pelham, 1991), and influence how feedback is received from others (Swann & Ely, 1984). In exploring the causal relationship between self-concept and academic achievement, Byrne (1996) stressed that an abundance of the interest in the self-concept and academic achievement relationship stems from the belief that the academic self-concept has motivational properties such that changes in academic self-concept will lead to changes in subsequent academic achievement.

Adult learner experience. In describing learner experience, Knowles (1984) states that as a person matures, they accumulate a growing reservoir of experience that becomes an increasing resource for learning. Educators must be cognizant of the fact that adult learners bring their varied frames of references and experiences, both positive and negative, into the learning environment. In facilitating the learning experience, the educator must ensure they are

utilizing strategies and practices that leverage the experiences of their adult learners and allow the learners to be actively engaged in the learning process. Often taken for granted and typically ignored as a critical component of the learning experience, informal learning experiences, which include intentional, incidental, and tacit learning, have the potential to enrich and complement a learner's formal learning experience (Peeters et al., 2014). Researchers hypothesize that the richest experience for adult learners is experience; this way, the analysis of experience should be the core methodology of adult education practices (Knowles, Holton III, & Swanson, 2005).

One of the champions in advocating and advancing the practice of experience in learning is David Kolb. Kolb (1984) defined learning as "the process whereby knowledge is created through the transformation of experience" (p. 38). In developing his experiential learning model, Kolb leaned on the work of Dewey and Piaget and based his model on Lewin's problem-solving model of action research (Knowles, Holton III, & Swanson, 2005). Kolb (1994) suggests that the experiential learning cycle is composed of four steps: 1) concrete experience, 2) observations and reflections, 3) the formation of abstract concepts and generalizations, and 4) the testing implications of concepts in new situations. Kolb's experiential learning model is beneficial to the field of education as it provides both a theoretical base for experiential learning research and a practical model for experiential learning practice.

Readiness to learn. Knowles (1984) articulates that as one matures, their readiness to learn becomes oriented increasingly to the developmental tasks of his or her social roles. Research indicates that participation in adult learning is customarily initiated and triggered by specific changes or situations in adults' lives, changes and situations which update and actualize participation in learning (Tonseth, 2015). A review of literature in various educational research journals reveals that the term, or concept, of "readiness to learn" used and defined in no less than

two ways. In one manner, it is described as the development of the ability to be self-directed in the learning process (Elias, 1979; Knox, 2002). However, in other instances, its definition is correlated with the proper, or "right," time for participation in adult learning (Knowles, 1988; Rubenson, 2000). Although these varying perspectives have clear distinctions, they are closely associated due to their correlation to the lifespan perspective. Other researchers acknowledge that adult learning is connected to certain stages in the learner's life and development and is closely associated to the learner's age; however, they believe that one's "readiness to learn" is more closely related to motivation and other affective reasons to participate in the learning process (Bandura, 1986; Cross, 1982). The works and lifespan theories of theorists such as Lindeman (1926), Erikson (1959), Maslow (1972), and Knowles (1988, 1989) have commonly been used in attempts to describe and explain adults' readiness to learn.

Orientation to learning. In explaining this concept, Knowles (1984) states that as one matures, one's time perspective changes from one of postponed application of knowledge to immediacy of application and their orientation toward learning shifts from one of subject-centeredness to one of problem centeredness. Wang (2008) believes that learning orientation is the missing link in the examination of the academic performance relationship. Lindeman (1926) who did not dichotomize adult and youth education, but rather divided adult and conventional education, assumed that adults' orientation to learning is life-centered. Based on this assumption, the content of adult education programs should center around life situations and not subjects. Adult learners are independent and autonomous learners and are inspired and oriented to learn when there are tangible benefits and outcomes to their learning. Boyd (1966), when discussing adult learners as independent learners, states, "The adult knows his own standards and expectations. He no longer needs to be told, nor does he require the approval and reward from

persons in authority" (p. 160). Adult learners learn because it is something they desire to do and not because they are seeking approval or reward from their instructors, schools, or organizations.

Motivation to learn. Knowles (1984) added this fifth assumption in his 1984 work and hypothesizes that as one matures their motivation to learn becomes internal. Wlodowski (1985) suggests that an adult's motivation to learn can be summarized in the four factors of success, enjoyment, value, and volition. Wlodowski (1985) communicates that motivation is the energy that fuels a learner's desire to learn and to become competent in matters and topics that they deem to be important to them. In her study, Papa-Gusho (2013) set out to present some of the factors, specifically the learning environment, that are influencing adult students' learning motivation and to show the predictive factor to a more significant motivation. Previous research (Wilson, 1996; Hanrahan, 1998) indicates that the learning environment factors have a profound effect on learners' learning and motivation because the learning environment is a place where students can make sense out of things and construct meaningful solutions to problems. Wlodowski (1989) suggests that the learning environment is more critical to the adult learner and that their environment should be self-centered to facilitate the adult learners' self-direction and use of previous experiences in achieving their learning goals and success. In reviewing the work of Wlodowski, Ohliger (1987) warns the practitioner of the resentment attributed to forced adult instruction and the threat to learn and motivation caused by blindly following the massive contemporary trends towards mandatory adult education.

Student Engagement

Widely recognized as a significant impactor and influencer of learning and achievement in higher education, student engagement is a term and concept that being thoroughly and extensively studied and theorized. Historically, student engagement has primarily been

associated with and focused on increasing the positive behaviors, academic achievements, and sense of belonging amongst students in order to influence them to remain in school. Disengagement was thought to happen more often in middle and high school; thus, much of the early research focused on middle and high school students (Willms, Friesen, & Milton, 2009). Recent research has broadened the scope of student engagement and suggests that the term be studied in a holistic manner incorporating students at all levels of education (Trowler, 2010).

Defining. Axelson and Flick (2011) states that "few terms in the lexicon of higher education today are invoked more frequently, and in more varied ways, then engagement" (p. 38). The term "student engagement" has come to refer to the levels of a student's involvement and interest in their learning and their connectedness to their classes, institutions, and each other (Axelson and Flick, 2011). In attempting to define the term, Kuh et al. (2007) state that student engagement is the "participation in educationally effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes" (p. 31). Similarly, Krause and Coates (2008) define student engagement as "the extent to which students are engaging in activities that higher education research has shown to be linked with high-quality learning outcomes" (p. 493). All researchers and theorists have not defined student engagement with the student being the focal point. Contrary to the multitude of theorized and hypothesized definitions, the Higher Education Funding Council for England (HFCE) (2008) define student engagement as "the process whereby institutions and sector bodies make deliberate attempts to involve and empower students in the process of shaping the learning experience." Combining the precepts of the definitions of those, like HFCE, who list the institution as the focal point of student engagement and others, such as Krause and Coates, who list the student as the focal point, Kuh (2009) in a later work defined student engagement as "the time and effort students

devote to activities that are empirically linked to desired outcomes of college and what institutions do to induce students to participate in these activities" (p. 683). The review of literature indicates that there is not a universally agreed-upon definition of the term student engagement. Each author mostly had a different definition of student engagement, how student engagement is measured, and what aspects are incorporated in student engagement.

Measuring. Understanding what is measured and how it is measured in student engagement can assist in removing some of the ambiguity and obscurity in defining student engagement. Historically, standard quantitative data measures such as graduation and truancy rates, scores on standardized tests, and attendance records have been used to characterize and equate the engagement levels of students (Taylor & Parsons, 2011). More recent research has begun to use more qualitative means to measure student engagement and also finding ways to differentiate and delineate between secondary and post-secondary student engagement constructs. Waldrop, Reschly, Fraysier, and Appleton (2019) hypothesize that both educators and research would immensely benefit from an instrument that could measure student engagement across levels of schooling. Reschly and Christensen (2012) agree with designing such a longitudinal instrument and believe that a valid comprehensive instrument would allow for targeted intervention to occur before a student reaches total disengagement. Waldrop, Reschly, Fraysier, and Appleton (2019) denote that as of the date of their study, there were only two significant instruments of self-reporting measures of post-secondary student engagement. These two instruments are the Motivation and Engagement Scale–University/College (MES–UC) developed by Andrew J. Martin (2009) and the National Survey of Student Engagement (NSSE), otherwise known as the College Student Report, which was developed and designed in 1998 by researchers at the National Center for Higher Education Management Systems (NSSE,

n.d.). Fredricks et al. (2011) identify a third measure of student engagement that holds promise for measuring post-secondary student engagement: the Student Engagement Instrument (SEI). The major drawback on the SEI, which was designed by Appleton et al. (2006), was originally validated on ninth graders and has since only been administered to students in third through twelfth grades (Waldrop, Reschly, Fraysier, & Appleton, 2019). In their study, Goldspink and Foster (2013) concluded that they had not reviewed a viable instrument that could be used longitudinally across levels of schooling; moreover, they hypothesized that a valid and viable instrument would need to include both observational and self-reporting methods, should be able to be applied across a wide range of learning environments (not just traditional brick and mortar classrooms), and must be "sensitive to and problematized the effect of pedagogy and learning environment on the learner rather than assuming that disengagement was something needing remediation in the learner" (p. 293).

Dimensions. A review of the literature revealed that a myriad number of types of engagement exist, including intellectual, behavioral, cognitive, institutional, academic, psychological, social, and emotional. Despite the numerous types of engagements described in the review of literature, there are three overarching themes or dimensions into which the types can be placed: behavioral engagement, cognitive engagement, and emotional engagement.

Behavioral engagement. Using Bloom's 1956 work on the taxonomy of educational objectives, Trowler (2010) believes that "students who are behaviourally engaged would typically comply with behavioural norms, such as attendance and involvement, and would demonstrate the absence of disruptive or negative behavior" (p. 5). Behavioral indicators are tangible and are less susceptible to subjective interpretation. Indicators of behavioral engagement, such as active participation in learning and the learning environment, can be readily

measured by observation and self-reporting, particularly in older learners (Goldspink & Foster, 2013). An example of a positive behavioral engagement indicator includes students enthusiastically participating in lectures, while negative indicators could include students either boycotting or picketing lectures. Marks (2000) inscribes that there is a robust link or correlation between behavioral engagement and student achievement in educational research. Sinatra, Heddy, and Lombardi (2015) believes robust association is primarily attributed to the assessment types, usually attendance records or rudimentary rote memory tests.

Emotional engagement. Skinner and Belmont (1993) define emotional engagement as a student's emotional response and reaction to a specific academic subject area, such as mathematics, or to school generally. Emotionally engaged students would enter the affective domain and exhibit reactions of enjoyment, interest, and a sense of belonging (Trowler, 2010). Affective or emotional reactions, although more prone to subjective interpretation, are more apt to reveal more about motivation and the reasons for observed behaviors. In theory, emotions, both positive and negative, can initiate and stimulate attention and engagement; however, research thus far has demonstrated an advantage for positive emotions over negative ones in promoting engagement (Broughton, Sinatra, & Nussbaum, 2011; Heddy & Sinatra, 2013). In attempting to measure or identify indicators of emotional engagement, an example of a positive indicator would be interest, boredom would be an example a non-engagement indicator, and an example of a negative indicator could be emotions exuded by rejection.

Cognitive engagement. The existing significant disparity and paucity of agreement amongst scholars and researchers concerning how to define and operationalize cognitive engagement has plagued the construct of cognitive engagement. Nevertheless, Wehlage and Smith (1992) provide a widely used and simplified definition of cognitive engagement in

defining it as psychological investment. Also, using Bloom's 1956 work as a basis, Fredricks, Blumenfeld, and Paris (2004) describe cognitively engaged students as those who savor the challenge of being invested in their learning and going beyond the minimal requirements. Sinatra, Heddy, and Lombardi (2015) articulate that "a student becomes psychologically invested when she or he expends cognitive effort in order to understand, goes beyond the requirement of the activity, uses flexible problem solving, and chooses challenging tasks" (p. 3). Using this precept to conceptualize cognitive engagement, it is evident that many of the dimensions of this construct overlap with those of behavioral and emotional engagement. Of the three dimensions, indicators of cognitive engagement are the hardest to measure as cognitive indicators are only indirectly revealed through observation or self-reporting.

Agentic engagement. A fourth dimension of engagement, agentic engagement, was suggested by Johnmarshall Reeve (Reeve & Tseng, 2011; Reeve, 2012) and is described as occurring when students are proactive during instruction through actively contributing to the flow of instruction. Bandura (2001) posits that students demonstrating agentic engagement will not have just a meager reaction, but will also wield their agency by "enriching, personalizing, modifying, or requesting instruction" (p. 13). Contemporary research proposes that agentic engagement is a construct that is statistically distinctive and is associated and connected to the other three dimensions of engagement but autonomously envisages motivation and achievement (Jang, Kim, & Reeve, 2012; Reeve & Tseng, 2011). As a dimension of engagement, agency is a newfound concept and a vast amount of additional research is needed to validate the construct (Sinatra, Heddy, & Lombardi, 2015).

Instructional Strategies

A review of the literature revealed that teachers' instructional practices are directly impacted and influenced to their beliefs about their self-efficacy levels (Graham, Harris, Fink, & McArthur, 2001; Chacon 2005; Shoulders & Keri, 2015). Rubie-Davies, Flint, and McDonald (2012) determined an instructor's level of self-efficacy significantly influences the type of delivery practice utilized in presenting instruction. Rubie-Davies (2008) also found that teachers with low self-efficacy levels tend to shy away from using more innovative instructional practices, whereas high efficacious teachers tend to use them. Research has shown that high levels of instructor self-efficacy have been correlated with delivering the types of experiences required for positive student achievement and outcomes (Rubie-Davies, Flint, & McDonald, 2012; Lee, Cawthon, & Dawson, 2013).

Marzano (2003) declares that instructional strategies are the foremost independent variable and influence on student achievement. Some researchers believe that it is the sole responsibility of instructors to determine how to utilize and employ their resources and select strategies that will progress and develop their learners to the appropriate depth (McCleod, Fisher, & Hoover, 2003). Effective instructional strategies should address students' needs as well as enhance student achievement.

Using instructional strategies to address students' needs. Beyond sheer student comprehension, the intent of using instructional strategies is to produce students who are independent strategic learners. Matczynski, Rogus, and Lasley (2000) asserts that the academic goals of all students, which they consider taking precedence over other dynamics in a classroom and learning environment, is deeply embedded with instructional strategies. Examples of instructional strategies which has been supported by research to be effective in addressing

students' needs and assist in the teaching and learning environments are scaffolding (Stein, Carnine, & Dixon, 1998; Fisher & Frey, 2010), prior knowledge (Chall, 2000; Marzano, 2004; Mariotti, 2010), teacher-centered instruction (Fisher & Frey, 2010; Stockard & Engelmann, 2011), and concept mapping (Guastello, Beasley, & Sinatra, 2000; Knipper, 2003).

Using instructional strategies to enhance student achievement. When used correctly, instructional strategies keep students engaged, heighten instruction, advance learning, can make teaching and learning enjoyable, and ultimately improve and enhance student achievement and outcomes. Opposed to just using one or two instructional strategies, teachers are most effective when they use a multitude of strategies (Meador, 2019). Using a variety of instructional strategies makes it less likely that students will get bored and disengage and improves the likelihood that a student will be exposed to an instructional strategy that most aligns with their individual learning style. Marzano, Pickering, and Pollock (2001) developed 21 research-based instructional strategies that they posited as valuable and beneficial in boosting student achievement. In a subsequent study using these 21 research-based instructional strategies as a base, Marzano (2003) extracted nine instructional strategy categories that were subsequently broken down into specific instructional practices: identifying similarities and differences; summarizing and note-taking; reinforcing effort and providing recognition; homework and practice; nonlinguistic representations; cooperative learning; setting objectives and providing feedback; generating and testing hypotheses; and questions, cues, and advance organizers (p. 83).

Classroom Management

Teachers assume a multitude of roles in the classroom; however, one of the most critical roles they undertake is that of a classroom manager. Creating and fostering an environment that is conducive to learning is an imperative task of the instructor as neither effective learning nor

teaching can occur in a classroom that is poorly managed. The instructor must manage the classroom by creating and enforcing a set of norms and expectations used in the classroom environment. Not only must the rules, routines, and expectations be established, but the consequences for violating these norms must be instituted. Effectively managing the classroom paves the way for instructors to engage their students in learning and create an environment in which both the instructors and students can flourish. When the concept of classroom management is discussed, discipline often comes to the forefront; however, classroom management is much more than that. It also includes and requires consistency, effective teaching strategies and practices, and efficient use of time. A review of the literature reveals four overarching competencies (rules and procedures, proactive management, effective and stimulating instructions, and reduction of disruptive and inappropriate student conduct) that instructors should use to effectively manage their classroom. The first two competencies will be reviewed in greater detail as the latter two are subcomponents of other competencies discussed within this review.

Rules and procedures. The systematic use of classroom management rules and procedures is an indispensable tool in creating and maintaining an effective and positive environment conducive for student success. Although both rules and procedures refer to stated student behavior expectations, rules communicate general standards or expectations, whereas procedures identify expectations for specific behaviors (Marzano, Gaddy, Foseid, Foseid, & Marzano, 2015). When possible, instructors should include students in the process of making rules. Including students in the process would help create buy-in from the students as to why they should comply with the created rules. As rules set the tone and serve as the foundation for an effective and productive classroom, they must be established at the onset of a new class,

should be posted in an area where they can be continuously viewed, and should be assessed continuously. Rules and procedures that are effectively written, implemented, and enforced convey the message to the learners that the teacher is there to teach and that they are there to learn. Effective rules and procedures also provide the learners with structure and a feeling that they are in a safe and predictable environment. Rosenberg (1986) and Lane, Wehby, and Menzies (2003) found that effectively implemented rules and procedures are associated with increased engagement, decreased student disciplinary and other negative issues, and higher student academic achievement.

Proactive management. Although the phrase "proactive management" may seem to be an oxymoron and appear to be contradictory in terms, in theory it is associated with concepts such as strategies for controlling students' behavior, responding to disruptions, reacting to misbehavior, and meting out appropriate rewards and punishments to name a few (Evertson & Poole, 2008). Recent research suggests that classroom management studies and strategies extend beyond the behaviors of the student and include the actions taken by teachers to create a learning environment that supports both academic and social learning (Evertson & Weinstein, 2006). Well-run and managed classrooms are those in which the instructor stresses prevention and preventive measures over remediation. Gettinger (2019) suggests that although it is important for teachers to know how to respond to misbehavior, it is more critical for instructors to understand how to establish and maintain an effective and efficient learning environment, an environment that would reduce the frequency with which disruptions occur. A pioneering study on group management conducted by Jacob Kounin (1970) determined that there was a greater differentiation in how teachers prevented problems from occurring differentiated in contrast to less effective managers. Kounin's study implies that a teacher's preparatory work for their

classroom, sets the conditions for learning, and enhances the probability that students would better understand what is expected of them. The proactive procedures taken by teachers to best manage a classroom can be collectively grouped into three areas: proactive measures, procedures, and interactions taken before the student enters the classroom; proactive measures, procedures, and interactions taken after the student enters the classroom; and proactive reactions for once students misbehave.

Before students enter the classroom. It is a grave misconception that a teacher's job begins once the students walk in the door. This could not be further from the truth. Before a student enters the classroom doors or ever step foot on the campus, there are proactive measures a teacher must take to prepare the students' physical space, social space, and instructional space.

Physical space. Physical space or physical environment refers to the layout and design of a classroom and its associated learning centers. Appropriate classroom arrangements that boost learning and attend to students both collectively and individually support the curriculum and account for the fact that all students do not learn in the same way. Research has concluded that students consistently list adequate personal space and having private space as concerns regarding the arrangement of the classroom (Evertson & Poole, 2008). The classroom arrangement provides students with clues and indications for interaction expectations. Students entering a classroom and seeing all the seats or desks facing a lectern would expect minimal interaction and for the instructor or teaching to do most of the talking, whereas a classroom arranged in a circle or horseshoe would serve as a cue that the students are expected to interact more. Whatever arrangement is decided upon, the instructor must ensure that the instructor and all presentations are clearly visible from each student's perspective. Student's seating arrangement should be flexible and fluid, and while considerations should be taken into the students' personal space, it

is more imperative that a design that facilitates collaboration is chosen. Contrasting to a permanently rigid and fixed seating arrangement, research concluded that flexibility in seating is a necessitous precondition for an interactive classroom (Lambert, 1995).

Social space. A classroom's social space is comprised of the interactions and exchanges between instructor and students and amongst other students (Evertson & Poole, 2008). Before the student enters the classroom, the teacher can plan for the fundamental structure of the classroom's social space by taken into consideration the norms desired to be established and the expectation which will be endorsed. Norms, which are supported by the established rules and procedures, refer to the customary ways of interacting in a specific setting, whereas expectations are the desired behaviors in those settings and situations. Evertson and Poole (2008) state, "When a teacher proactively plans for the norms and expectations that he or she wants established in the classroom, the teacher considers the types of interactions he or she hopes students will have and the ways they will behave" (p. 133).

Instructional space. Instructional space is the aspect of the classroom consisting of the student learning goals associated with the class. The instructor facilitates these goals, but they are usually guided by the textbooks, and local, state, and federal directives and mandates. It is the responsibility of the instructor to ensure that the students' learning goals include both the depth and breadth of the subject and the knowledge, skills, and abilities to attain the depth and breadth (Evertson & Poole, 2008). Prior to students arriving and setting foot in the classroom, an instructor can establish and manage the instructional space
through organizing and preparing the overarching curriculum.

After the student arrives. In addition to practicing proactive measures and procedures prior to students arriving, effective instructors must ensure they prepare for interactions once the

student arrives. Once the students arrive, the instructor merges the proactive prior planning with the emerging knowledge of each student individually and the classroom collectively. The first few weeks of interaction after the students arrive, also referred to as the getting started period, are key in establishing the norms and expectations and offers the instructor an opportunity to inaugurate a positive tone for success in the classroom (Evertson & Poole, 2008). Various researchers have documented the incredible importance of establishing these expectations, norms, and rules and procedures on the first day of school, term, or class (Emmer, Evertson & Anderson, 1980; Evertson & Emmer 1982; Evertson, Emmer, Sanford, & Clements, 1983; Evertson,1989;). The interactions instructors experience once the students arrive in the classroom can be categorized into two broad areas: relational interactions and instructional interactions.

Relational interaction. Relational interactions are defined as the process and stages in which people exchange information and ideas and move from strangers to acquaintances (VanLear, Koerner, & Allen, 2006). Mark Knapp and Anita Vangelisti (2009) suggests that there are ten stages of interactions that describes how relationship move along the two processes of coming together and coming apart. These stages are initiating, experimenting, intensifying, integrating, bonding, differentiating, circumscribing, stagnating, avoiding, and terminating. The first five stages comprise the process of coming together and the last five, the process of coming apart.

Communication and trust are the hallmarks of forging everyday interpersonal relationships, and the same is true with the relationship between instructor and students. Not only must the instructor be able to effectively and clearly communicate the norms and expectations for the classroom, but they establish trust by being reliable and practicing the

established norms and expectations. Based on Thibaut and Kelley's works in social exchange theory and the rewards-cost matrices, the weighing of costs and rewards in relationships impacts commitment and overall relational satisfaction. Two critical psychological and interpersonal relationship dimensions that relate to social exchange theory are interdependence and commitment. Regarding interdependence, or the relationship between one's well-being and involvement in a specific relationship, Harvey and Wenzel (2006) state:

> A person will feel interdependence in a relationship when (1) satisfaction is high or the relationship meets important needs; (2) the alternatives are not good, meaning the person's needs couldn't be met without the relationship; or (3) investment in the relationship is high, meaning that resources might decrease or be lost without the relationship. (p. 40)

Instructional interaction. Wagner (1994) defines instructional interaction as an event or series of events that transpire between a student and the student's environment inclusive of the instructor, other students, and course content. The criticality of instructor-student interaction is well documented in educational research. In conducting vast studies involving instructor-student interaction in the traditional brick and mortar face-to-face classroom, Flanders (1970) concluded that increased instructional interactions between instructors and learners had a positive correlation with student academic achievement and attitudes towards learning. Ernest Pascarella in collaboration with several colleagues (Pascarella & Terenzini, 1976; Pascarella, Terenzini, & Hibel, 1978; Pascarella & Chapman, 1983) conducted extensive students of interactions between instructors and undergraduate college students and concluded that frequency and content of instructor-student interactions had a direct correlation with student achievement (Pascarella &

Terenzini, 1976; Kuh & Hu, 2001), student persistence (Pascarella, Terenzini, & Hibel, 1978), and undergraduate graduation rates (Tinto, 1987).

Reacting to student misbehavior. Regardless of how many proactive measures are emplaced or how much planning and preparation is done, student misbehavior will occur. To ensure their responses are productive, instructors must impart proper planning to their reactions to misbehavior. Anticipating responses to student misbehavior is a shared responsibility by all members of the learning environment. Both the instructor and students must be able to anticipate and pair the magnitude of a consequence to the severity of the misbehavior or infraction. "In classrooms where norms for behaviors are negotiated and sanctioned by both the teacher and students, students play a role in ensuring adherence to social norms and handling conflict" (Evertson & Poole, 2008, p. 136). In order to maintain high levels of trust and reliability, the instructor must ensure they respond consistently and without favoritism.

Instructors must not only prepare for disruptive behavior by a student, and between and amongst students, but they also must prepare for disruptive interactions that may occur between themselves and students. A disruptive interaction between an instructor and student can occasionally spark a series of actions and reactions that escalates leading to intimidation, pandemonium, and destruction. In their study on teachers' maintaining instructional focus through disruptive behavior, Malone, Bonitz, and Rickett (1998) conclude:

> Time spent trying to control a class is time taken away from instruction. The teacher is simply less effective when instructional time is interrupted. Disruptive behavior creates teacher-student conflicts, which cause undesirable interpersonal conditions for both teachers and students. The teachers reported overwhelmingly that disruptive behavior allowed to continue on a large scale destroys teacher morale…. For individuals,

> disruptive behavior contributes to low self-concept, peer conflicts, and disunity among the students. (p. 192)

Effective and stimulating instruction. A stimulated classroom environment is a learning environment comprised of a combination of the way the classroom is set up, how the instructor delivers the lesson content, and the way in which the learners interact with their peers, the instructor, and their own work. An effective and stimulating instructional environment stimulates the students' minds while in their learning environment through the use of visuals well-placed throughout the classroom, hands-on learning activities that promote cognitive stimulation and exploration of different senses and textures, and the use of multi-modal means of learning (Wiesner-Groff, 2020). To create and foster a positive, effective, and stimulating learning environment, the instructor should exhibit core values and demonstrate what they expect of their learners, create a positive atmosphere by encouraging and boosting students' confidence, and setting realistic, smart, and attainable expectations.

Reduction of disruptive and inappropriate student conduct. C.M. Charles (2001) believes that effectively managing disruptive behavior is not what a teacher does after an incident occurs. He believes this type of management is a reactionary approach and that the best management techniques and approaches are preventive. Burden (2003) hypothesizes that a proactive approach in managing behaviors from the inception is much easier and more productive than reacting after a student misbehaves or violates one of the classroom rules, procedures, or norms. Research by Johnson, Rice, Edgington, and Williams (2005) indicates that there are three critical steps to successfully set and reinforce expectations: clearly communicate the expectations, model the expected behavior, and include positive reinforcement.

CHAPTER THREE: METHODS

Overview

The purpose of this chapter is to introduce the research methodology for this quantitative causal-comparative study regarding teacher self-efficacy. The current study posits a deeper understanding of teacher self-efficacy at the United States Army Sergeants Major Academy's Sergeants Major Resident Course. The applicability and limitations of the causal-comparative research design are discussed in this chapter. The primary components of this chapter are the design, research questions and hypotheses, participants and setting, instrumentation, and data analysis plan.

Design

This study utilized a quantitative causal-comparative research design methodology. Causal-comparative research, also known as ex post facto research, seeks to discover possible causes and effects of a personal characteristic by comparing individuals in whom it is present with individuals in whom it is absent or present to a lesser degree (Gall, Gall, & Borg, 2007). The causal-comparative research design is appropriate to use when the researcher is seeking to find cause-and-effect relationships between independent and dependent variables that have already occurred or happened and that are assessed by research trying to determine a difference between groups or groups differences research. The independent variables for this study were the instructor categorical groups based upon their department (Army Operations, Force Management, Professional Studies, Command Leadership, and Joint International Interagency Military Operations); their military status (military or civilian); and their type of degree (education-background degrees and those with degrees in the other liberal arts and sciences). The dependent variable was the instructors' self-efficacy scores measured using the sub-scales of

student engagement, instructional strategies, and classroom management. The dependent variables for this study were the instructors' overall self-efficacy scores, instructors' student engagement efficacy scores, instructors' instructional strategies efficacy scores, and instructors' classroom management scores across the following groups: a) the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational; b) between the civilian and military instructors of the Sergeants Major Resident Course; and c) between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences. Like other non-experimental research, causal-comparative research has the limitation in which the independent variable cannot be manipulated, and the researcher has no control over additional variables that may be impacting and influencing the dependent variable. An additional limitation of causal-comparative research is that the groups cannot be chosen due to the events having occurred already.

This study attempted to identify any differences in self-efficacy of Sergeants Major Residence Course instructors across the five departments of Army Operations, Force Management, Professional Studies, Command Leadership, and Joint International Interagency Military Operations.

Research Questions

RQ1: Is there a difference in USASMA Sergeants Major Course instructors' overall self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ2: Is there a difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command

leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ3: Is there a difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ4: Is there a difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ5: Is there a difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ6: Is there a difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ7: Is there a difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ8: Is there a difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ9: Is there a difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ10: Is there a difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ11: Is there a difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ12: Is there a difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

Hypotheses

$H_0$1: There will be no significant difference in USASMA Sergeants Major Course instructors' overall self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$2: There will be no significant difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$3: There will be no significant difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$4: There will be no significant difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$5: There will be no significant difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$6: There will be no significant difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$7: There will be no significant difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$8: There will be no significant difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$9: There will be no significant difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$10: There will be no significant difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$11: There will be no significant difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$12: There will be no significant difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

Participants and Setting

This study attempted to generalize that there is no significant difference in Sergeants Major Residence Course instructor self-efficacy across the departments (subjects) of professional studies, command leadership, army operations, force management, distance education, and joint interagency, intergovernmental, and multinational. The target population was military instructors at senior level military institutions such as the United States Army Command and General Staff College, the United States Army War College, and the United States Army Sergeants Major Academy. The accessible population included the instructors of the Sergeants Major Residence Course at the United States Army Sergeants Major Academy. Convenience sampling was employed to select the participants for this study. Gall et al. (2007) suggests a minimum of 100 participants for survey research (p. 176). The accessible population comprised 108 instructors, of that, 100 instructors participated in this study. For a medium effect of variance, a minimum sample size of 96 is needed at an alpha level of .05 and statistical power of .7 (Gall, Gall, & Borg, 2007, p. 145).

The setting for this research study was the United States Army Sergeants Major Academy located in El Paso, Texas. The assigned groups for this study are Army Operations instructor, Force Management instructor, Professional Studies instructor, Command Leadership instructor,

Joint International Interagency Military Operations instructor, military instructor, civilian instructor, education degree instructors, and other degree instructors. Members were assigned to three groups based on the department in which they teach, their military status, and the type of master's degree they possessed. Participation in the study was restricted to current instructors whose primary duty is to instruct the Sergeants Major Resident Course.

Instrumentation

Tschannen-Moran and Hoy (2001) developed an instrument to measure the construct of teacher self-efficacy. The researchers examined various instruments already in use as well as the problems identified with each and subsequently introduced a new measure of teacher self-efficacy based on a model of teacher self-efficacy suggested by Tschannen-Moran, Woolfolk Hoy, and Hoy (1998), along with reliability and validity data from three studies. The new instrument, named the Ohio State Teacher Efficacy Scale (OSTES) was examined in three separate studies; the initial study saw the 52 original items reduced to 32, and the second study saw a further reduction to 18 items (Tschannen-Moran & Hoy, 2001). For the third study, 18 additional items were developed and tested; the conclusion of that study resulted in an instrument with two forms: a long form with 24 items and a short form with 12 items (Tschannen-Moran & Hoy, 2001). Lastly, the researchers tested the instrument for structure, reliability, validity, and appropriateness for both pre-service and in-service teachers.

Tschannen-Moran and Hoy (2001) used three studies to refine and reduce the OSTES from its original 52 question format to a 36-item measure. The resulting measure was then field-tested at the Ohio State University (Tschannen-Moran & Hoy, 2001). The test suggested that three teacher self-efficacy factors could be extracted: instruction, classroom management, and engagement. The authors took the eight items from each subset with the highest scores and

tested them for reliability. Reliabilities for the subscales for instruction, management, and engagement were 0.91, 0.90, and 0.87, respectively (Tschannen-Moran & Hoy, 2001). Based on the high reliabilities, the authors repeated the reliability test; however, this time, they took the four items with the highest scores. This provided reliability scores of 0.86 for instruction, 0.86 for management, and 0.81 for engagement (Tschannen-Moran & Hoy, 2001). This led to the creation of the long (24) and short (12) forms that the authors would use for further testing and analysis, which resulted in reliability being 0.94 for the 24-item measure and 0.90 for the 12-item measure (Tschannen-Moran & Hoy, 2001). These high scores are indicative that these forms can used to assess self-efficacy.

Tschannen-Moran and Hoy (2001) examined the construct validity of both the short and long forms of the OSTES by assessing the correlation of their developed measure against other measures of teacher self-efficacy to include Rand (1976), Gibson and Dembo (1984), and Hoy and Woolfolk (1993). Total scores on the 24-item OSTES was positively related to both of the Rand items ($r = 0.18$ and 0.53, $p < 0.01$), the Gibson and Dembo measure ($r = 0.64$, $p < 0.01$), and the general teacher self-efficacy factor of Hoy and Woolfolk ($r = 0.16$, $p < 0.01$) (Tschannen-Moran & Hoy, 2001).

Procedures

Information about securing Insitutional Review Board (IRB) approval was provided. See Appendix B for IRB approval. For this study, the short form of the OSTES was utilized. The instrument is composed of 12 questions: four that measure efficacies for instructional strategies, four that measure efficacies for classroom management, and four that measure efficacies for student engagement. The questions will include items such as “to what extent can you craft good questions for your students?” (instructional strategy); “how well can you keep a few problem

students from ruining an entire lesson?" (classroom management); and "how much can you do to motivate students who show low interest in school work?" (student engagement). The instrument has a response ranging from 1 (nothing) to 9 (a great deal). Combined scores can range from 12-108 and are indicative of the teacher's overall self-efficacy as no questions are written in a negative form.

The instrument was administered to the instructors in the provided locations at the USASMA. The instrument, its purpose, and how to correctly fill it out was explained to each group of instructors. It was stressed that their responses are confidential, so they were encouraged to honestly answer the questions without fear of reprisal or retaliation from their department heads. When the instrument was administered, the instructors spread out across the provided area, were asked not to talk, and was instructed to place their completed instrument face down on the manila folder in the designated area. The administration of the instrument took approximately 25-30 minutes, to include instruction and collection. A copy of the instrument used in this study is included in Appendix A.

Data Analysis

Four one-way, between-subjects analysis of variance (ANOVA) was used to answer research questions one through four; eight independent samples *t* test assessed questions five through twelve. First, an ANOVA compared the means on a quantitative Y outcome variable (instructors' self-efficacy) across the following instructor groups (the categorical, independent variable): Army Operations, Force Management, Professional Studies, Command Leadership, and Joint International Interagency Military Operations. ANOVA divided the average amount of variation between the multiple groups in the independent variable by the average amount of variation within the groups (or the error), producing an *F* statistic in order to see how likely the

population means are to be equal, using a .05 level of significance (Field, 2009; Urdan, 2017). For questions five through twelve, an independent samples *t* test divided the observed differences between sample means of the instructor self-efficacy outcome variable across civilian and military instructors and instructors with education-degrees and those without (the independent variables) by the standard error of the difference between the means. This quotient produced a *t* statistic that determined if the means come from similar or different populations, also using a .05 level of significance (Field, 2009; Urdan, 2017).

Because ANOVA and *t* tests are parametric statistical tools, both assume specific properties of the data before a researcher can employ the tests to answer the stated research questions. For one-way, between subjects ANOVA, the dependent variable needs to be normally distributed across the entire sample and within the categories of the independent variable; the independent variables should have similar variances (homogeneity of variance); and the observations need to be independent. To test for normality, box plots and histograms visually detected the shape and spread of the data and Kolmogorov-Smirnov and Shapiro-Wilk tests of normality were used to assess whether scores differed significantly from a normal distribution. Additionally, the Levene's test was conducted to see if the homogeneity assumption is met (Warner, 2013). Independent observations are assured by the nature of the study's design. In other words, a participant could not be in more than one category or level of the independent variable(s). For example, a teacher in the DAO department were not also part of the DCL department. A teacher with an M.Ed. could not also simultaneously not have an M.Ed. However, ANOVA is considered robust against moderate violations of normality (Rovai et al., 2014). The one-way ANOVA and its associated assumptions were ran using Statistical Package for the Social Sciences (SPSS) Version 24 software.

For questions five through twelve, the independent samples *t*-test assumptions were addressed using SPSS as well. The *t* test assumes normally distributed data, homogeneity of variances, and independent observations. As with ANOVA, histograms and boxplots showed the shape and spread of the data; moreover, the Kolmogorov-Smirnov test was used in conjunction with the boxplots and histograms to help assess normality. A *t* test is also assumed robust against moderate violations of normality (Field, 2009). The Levene's statistic also assessed homogeneity of variances with the *t* test, and independence can be assumed from the study design (Field, 2009, Rovai et al., 2014).

Since a total of 12 tests of significance were conducted, a Bonferroni correction is needed to guard against type I error. The alpha level is calculated to be: 0.10/12= .008, (Warner, 2013).

CHAPTER FOUR: FINDINGS

Overview

The purpose of this quantitative research study was to examine the relationship between USASMA Sergeants Major Course instructors' self-efficacy, measured using the sub-scales of student engagement, instructional strategies, and classroom management, within departments of the military, comparing between military and civilian's and the instructors' level and type of education. The current study posited a deeper understanding of teacher self-efficacy and student achievement at the United States Army Sergeants Major Academy's Sergeants Major Resident Course. The primary components of this chapter are the design, research questions and hypotheses, descriptive statistics (demographic characteristic and scales), and results. The results are presented systematically, addressing each of the twelve research questions. For each research question, the statistical assumptions associated with each analysis was assessed to determine whether the parametric or non-parametric equivalent test is most appropriate to answer each question.

Research Questions

RQ1: Is there a difference in USASMA Sergeants Major Course instructors' overall self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ2: Is there a difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command

leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ3: Is there a difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ4: Is there a difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational?

RQ5: Is there a difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ6: Is there a difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ7: Is there a difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ8: Is there a difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course?

RQ9: Is there a difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ10: Is there a difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ11: Is there a difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

RQ12: Is there a difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences?

Hypotheses

$H_0$1: There will be no significant difference in USASMA Sergeants Major Course instructors' overall self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$2: There will be no significant difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$3: There will be no significant difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$4: There will be no significant difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$5: There will be no significant difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$6: There will be no significant difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$7: There will be no significant difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$8: There will be no significant difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$9: There will be no significant difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$10: There will be no significant difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$11: There will be no significant difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$12: There will be no significant difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

Descriptive Statistics

The present research included data from 100 participants, 71 military personnel and 29 civilians (from the Department of Army Civilians [DAC]). Participants were included from five different departments: a) the Department of Army Operations (DAO), b) Department of Command Leadership (DCL), c) Department of Force Management (DFM), d) Department of Joint Interagency, Intergovernmental, and Multinational (DJIIM), and e) Department of Professional Studies (DPS). The number of participants from each department are presented in Table 1. Finally, instructors' education-backgrounds were recorded. More than half of the instructors had degrees in liberal arts and/or sciences (n = 57), and fewer instructors had education-background degrees (M.Ed.) (n = 43). See Table 1 for frequencies of participants in each category.

The instrument of measure of instructors' self-efficacy was the Teachers' Sense of Efficacy Scale (TSES). The scale consists of 12 Likert-type items ranging from one to nine. Within the TSES, there are three sub-scales: a) self-efficacy and student engagement, b) self-efficacy in instructional practices, and c) self-efficacy in classroom management. Table 2 displays the descriptive statistics, including measures of central tendency (mean) and variability (standard deviation and range), as well as a measure of inter-item reliability (Cronbach's alpha).

Table 1

Frequency Distribution table of participants' military status, department, and education-background.

	n	percentage
Military Status		
DAC	29	29.0%
MIL	71	71.0%
Department		
Department of Army Operations (DOA)	19	19.0%
Department of Command Leadership (DCL)	19	19.0%
Department of Force Management (DFM)	24	24.0%
Department of Joint Interagency, Intergovernmental, and Multinational (DJIIM)	22	22.0%
Department of Professional Studies (DPS)	16	16.0%
Education		
M.Ed.	43	43.0%
No M.Ed.	57	57.0%

Table 2

Descriptive Statistics and Inter-Item Reliability for the TSES and its sub-scales.

Scale	**Number of Items**	**Mean (*SD*)**	**Range**	**Cronbach's Alpha**
Teacher Self Efficacy Scale	12	7.74 (0.80)	5.33 – 9.00	.847
Efficacy in Student Engagement	4	7.53 (1.00)	5.25 – 9.00	.762
Efficacy in Instructional Strategies	4	7.72 (0.98)	5.00 – 9.00	.696
Efficacy in Classroom management	4	7.97 (0.97)	3.75 – 9.00	.794

Additionally, the TSES and its subscale scores were recorded for military and civilian sub-scale. The overall self-efficacy average score for military instructors was 7.62 (*SD* = 0.76) and 8.08 for civilian instructors (*SD* = 0.82). The average score on the student engagement sub-scale for military instructors was 7.39 (*SD* = 0.97) and 7.88 for civilian instructors (*SD* = 1.01). On the instructional strategies sub-scale, the average score for military instructors was 7.61 (SD = 1.01) and 7.97 for civilian instructors (SD = 0.88). On the classroom management sub-scale,

the average score for military instructors was 7.85 (SD = 0.99) and 8.27 for civilian instructors (SD = 0.86).

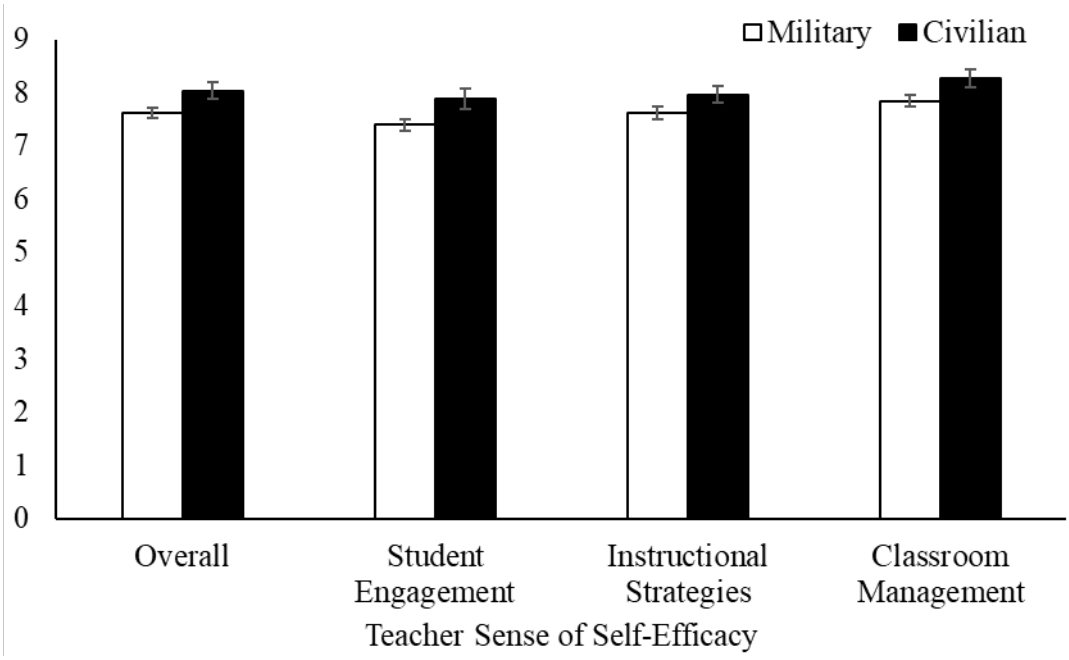

Figure 1. Mean scores on the TSES and its subscales for military and civilian instructors

Additionally, the TSES and its subscale scores were recorded for instructors with backgrounds in education (M.Ed.) and those with backgrounds in the liberal arts and/or sciences (No M.Ed.) (See Figure 2). On the overall TSES scale, the average score for instructors with an M.Ed. was 7.74 (*SD* = 0.79) and 7.74 for instructors without a M.Ed. (*SD* = 0.82). On the student engagement sub-scale, the average score for instructors with an M.Ed. was 7.59 (*SD* = 1.04) and 7.49 for instructors without a M.Ed. (*SD* = 0.96). On the instructional strategies sub-scale, the average score for instructors with an M.Ed. was 7.72 (*SD* = 1.00) and 8.00 for instructors without a M.Ed. (*SD* = 0.98). On the classroom management sub-scale, the average score for instructors with an M.Ed. was 7.92 (*SD* = 0.83) and 8.00 for instructors without a M.Ed. (*SD* = 1.13).

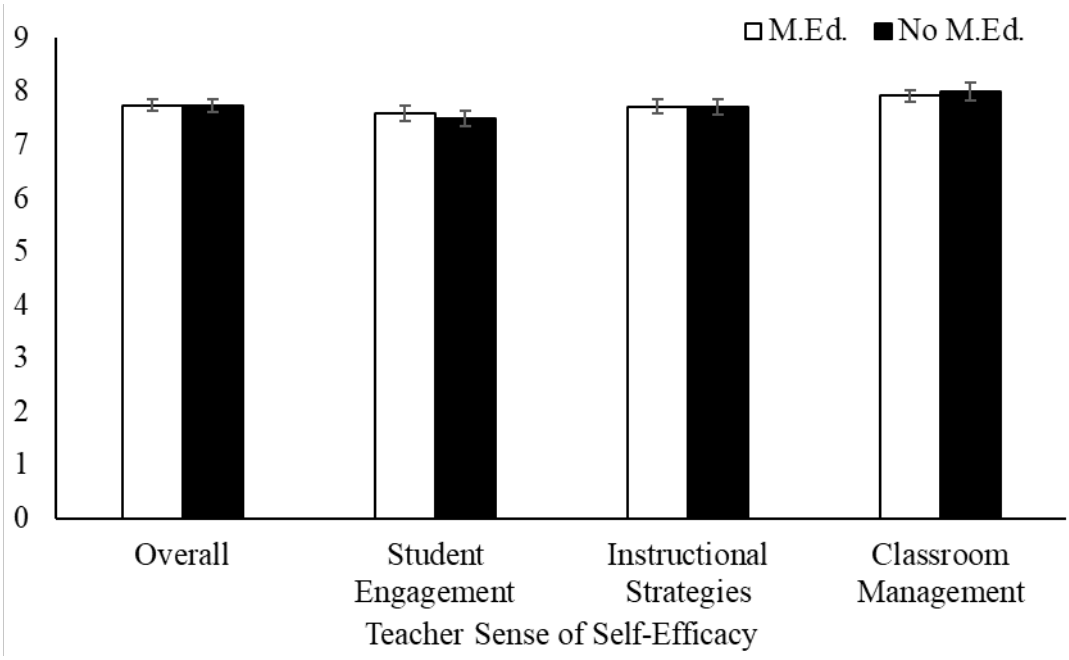

Figure 2. Mean scores on the TSES and its subscales for instructors with and without an M.Ed.

Finally, participants' scores on the TSES and its subscales were reported for instructors from five different departments: a) the Department of Army Operations (DAO), b) Department of Command Leadership (DCL), c) Department of Force Management (DFM), d) Department of Joint Interagency, Intergovernmental, and Multinational (DJIIM), and e) Department of Professional Studies (DPS). Means and standard deviations for each department on the TSES and the three sub-scales are displayed in Table 3.

Table 3

Means (and standard deviation) for the TSES and its subscales for each department

	DAO	DCL	DFM	DJIIM	DPS
TSES overall	7.64 (0.83)	7.52 (1.03)	8.00 (0.70)	7.72 (0.73)	7.76 (0.60)
Student Engagement	7.57 (1.00)	7.29 (1.11)	7.74 (1.01)	7.59 (0.97)	7.41 (0.95)
Instructional Strategies	7.47 (1.09)	7.42 (1.24)	8.08 (0.78)	7.72 (0.89)	7.80 (0.83)
Classroom Management	7.89 (0.96)	7.84 (1.33)	8.17 (0.76)	7.84 (0.96)	8.08 (0.79)

Results

Hypotheses

The first set of null hypotheses assessed in the present research study was as follows:

$H_0$1: There will be no significant difference in USASMA Sergeants Major Course instructors' overall self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$2: There will be no significant difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$3: There will be no significant difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$4: There will be no significant difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

In order to test these hypotheses, a one-way between-subjects analysis of variance (ANOVA) was conducted for each null hypothesis. A one-way ANOVA compared the means of instructors' self-efficacy across the following instructor groups: DAO, DFM, DCL, DJIIM, and DPS.

However, prior to conducting the analysis, the statistical assumptions associated with a one-way ANOVA were assessed. Specifically, two assumptions needed to be tested. One assumption of the ANOVA is that the dependent variable is normally distributed across the entire

sample and within each category of the independent variable. However, ANOVAs are considered robust against moderate violations of normality (Rovai et al., 2014). The data were screened for extreme outliers using box plots (Figure 3). None were revealed so all data were retained.

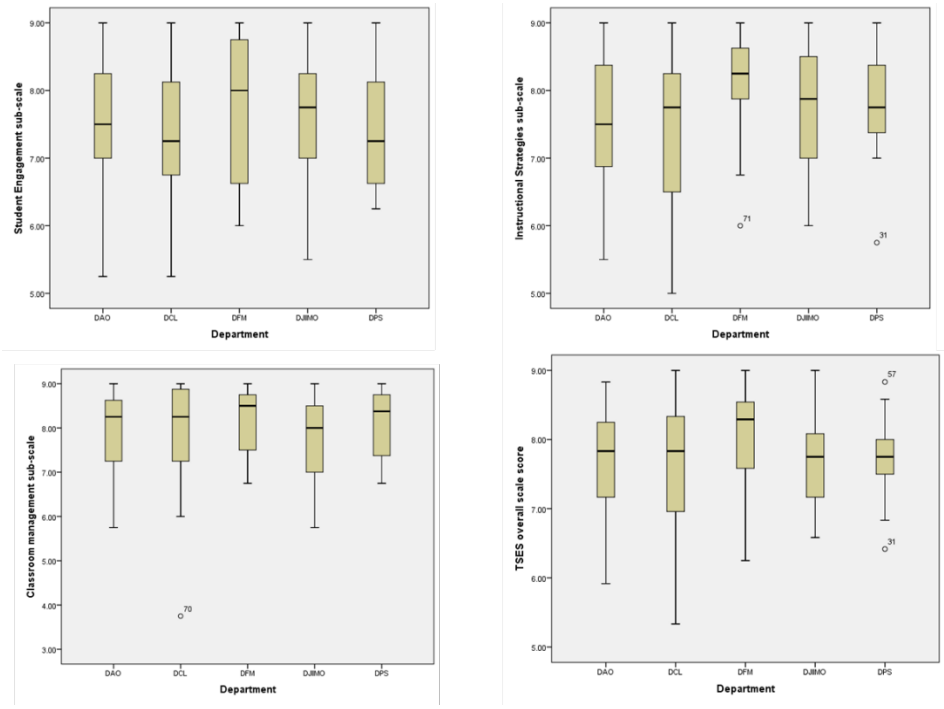

Figure 3. Boxplots of TSES (and sub-scale) scores across each department

Additionally, the assumption of normality was assessed using the Shapiro-Wilk test of normality. The null hypothesis associated with the Shapiro-Wilk test is that there is no significant difference between the distributions of each level of the independent variable, and a normal distribution. Therefore, if $p > .05$, we retain the null hypothesis that the distribution of data for each category is equivalent to a normal distribution. TSES overall scores were approximately normally distributed for each of the five departments (see Table 4). However, there were some non-normally distributed data for the sub-scales based on Shapiro-Wilk tests. For student engagement self-efficacy, the distribution for the DFM department and the DPS department deviated from normality assumption based on Shapiro-Wilk test results, $p = .007$ and

p = .037, respectively. For instructional strategies self-efficacy, the distribution of scores from the DCL department (p = .030), and the DFM department (p = .009) did not satisfy normal distribution assumption based on Shapiro-Wilk test. Finally, the classroom management self-efficacy sub-scale was not normally distributed for the DCL (p = .002), the DFM department (p = .004), and the DPS departments (p = .039).

Table 4

Shapiro-Wilk test of normality for TSES scale scores in each department

	Shapiro-Wilk	*df*	*p*
TSES overall			
DAO	0.939	19	.248
DCL	0.941	19	.273
DFM	0.917	24	.051
DJIIMO	0.952	22	.350
DPS	0.960	16	.659
Student Engagement			
DAO	0.957	19	.518
DCL	0.936	19	.228
DFM	0.876	24	.007
DJIIMO	0.957	22	.422
DPS	0.879	16	.037
Instructional Strategies			
DAO	0.939	19	.249
DCL	0.888	19	.030
DFM	0.881	24	.009
DJIIMO	0.956	22	.414
DPS	0.941	16	.365
Classroom Management			
DAO	0.917	19	.102
DCL	0.813	19	.002
DFM	0.866	24	.004
DJIIMO	0.913	22	.054
DPS	0.880	16	.039

A second assumption is that the variance across each categorical level is approximately similar (i.e. homogeneity of variance). This was assessed using the Levene's test of homogeneity (Warner, 2013). The null hypothesis associated with the Levene's test is that all

groups have equal population variances. The assumption of homogeneity of variance was satisfied by failing to reject the null hypothesis (See Table 5).

Table 5

Levene's test of homogeneity for each scale and sub-scale

	Levene Statistic	*df*	*p*
TSES overall	0.059	1,98	.120
Student Engagement	0.717	1,98	.399
Instructional Strategies	0.014	1,98	.403
Classroom management	3.486	1,98	.065

Because TSES overall scores were approximately normally distributed in each of the five departments, and ANOVAs are considered robust against moderate violations of normality (Rovai et al., 2014), and none of the other assumptions were violated, a one-way ANOVA was conducted for each null hypothesis to determine whether instructors' self-efficacy differed by departments. TSES scale scores were treated as the dependent variable, and department was the independent variable (with five levels).

Null Hypothesis 1

Using the Shapiro-Wilk test of normality, TSES overall scores were approximately normally distributed for each of the five departments. Levene's test of homogeneity satisfied the assumption that all groups have equal population variances by failing to reject the null hypothesis. An ANOVA was run to see if there was a difference USASMA Sergeants Major Course instructors' overall self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational. The independent variable were the five departments, and the dependent variable was the instructors' overall self-efficacy scores. The researcher failed to reject the null hypothesis at alpha level of .008, where $F(4,95) = 1.076$, $p = .373$. Partial eta square equaled ($\eta^2_{part} = .043$). The effect size was small. There was not a significant difference

in USASMA Sergeants Major Course instructors' overall self-efficacy across the five departments of professional studies (*M*= 7.76, *SD*= .60), command leadership (*M*= 7.52, *SD*= 1.03), army operations (*M*= 7.64, *SD*= .83), force management (*M*= 8.00, *SD*= .70), and joint interagency, intergovernmental, and multinational (*M*= 7.72, *SD*= .73). See Table 3 for means and standard deviation for the TSES and its subscales for the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational and Table 6 for Tests of Between-Subjects Effects.

Null Hypothesis 2

There were some non-normally distributed data for the student engagement self-efficacy sub-scale based on Shapiro-Wilk tests. The distribution for the DFM department and the DPS department deviated from normality assumption based on Shapiro-Wilk test results, $p = .007$ and $p = .037$, respectively. Levene's test of homogeneity satisfied the assumption that all groups have equal population variances by failing to reject the null hypothesis. An ANOVA was run to see if there was a difference between USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational. The independent variable was the five departments, and the dependent variable was instructors' student engagement self-efficacy levels. The researcher failed to reject the null hypothesis at alpha level of .008, where $F(4,95) = 0.615$, $p = .656$. Partial eta square equaled ($\eta^2_{part} = .025$). The effect size was small. There was not a statistical difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies (*M*= 7.41, *SD*= .95), command leadership (*M*= 7.29, *SD*= 1.11), army operations (*M*= 7.57, *SD*= 1.00), force management (*M*= 7.74, *SD*= 1.01), and joint

interagency, intergovernmental, and multinational (*M*= 7.59, *SD*= .97). See Table 3 for means and standard deviation for the TSES and its subscales for the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational and Table 6 for Tests of Between-Subjects Effects.

Null Hypothesis 3

This null hypothesis also had some non-normally distributed data based on Shapiro-Wilk tests. For instructional strategies self-efficacy, the distribution of scores from the DCL department (p = .030), and the DFM department (p = .009) did not satisfy normal distribution assumption. Levene's test of homogeneity satisfied the assumption that all groups have equal population variances by failing to reject the null hypothesis. An ANOVA was run to see if there was a difference between USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational. The independent variable was the five departments, and the dependent variable was instructors' instructional strategies self-efficacy scores. The researcher failed to reject the null hypothesis at alpha level of .008, where $F(4,95) = 1.615$, p = .177. Partial eta square equaled (η^2_{part} = .064). The effect size was medium. There was not a statistical difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies (*M*= 7.80, *SD*= .83), command leadership (*M*= 7.42, *SD*= 1.24), army operations (*M*= 7.47, *SD*= 1.09), force management (*M*= 8.08, *SD*= .78), and joint interagency, intergovernmental, and multinational (*M*= 7.72, *SD*= .89). See Table 3 for means and standard deviation for the TSES and its subscales for the five departments of professional studies,

command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational and Table 6 for Tests of Between-Subjects Effects.

Null Hypothesis 4

According to the Shapiro-Wilk test, the classroom management self-efficacy sub-scale was not normally distributed for the DCL (p = .002), the DFM (p = .004), and the DPS departments (p = .039). Levene's test of homogeneity satisfied the assumption that all groups have equal population variances by failing to reject the null hypothesis. An ANOVA was run to see if there was a difference between USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational. The independent variable was the five departments, and the dependent variable was instructors' classroom management self-efficacy scores. The researcher failed to reject the null hypothesis at alpha level of .008, where $F(4,95) = 0.497$, p = .738. Partial eta square equaled (η^2_{part} = .020). The effect size was small. There was not a statistical difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies (M= 8.08, SD= .79), command leadership (M= 7.84, SD= 1.33), army operations (M= 7.89, SD= .96), force management (M= 8.17, SD= .76), and joint interagency, intergovernmental, and multinational (M= 7.84, SD= .96). See Table 3 for means and standard deviation for the TSES and its subscales for the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational and Table 6 for Tests of Between-Subjects Effects.

Table 6

One-way ANOVA results treating TSES and sub-scales as dependent variable and department as the independent variable

Variable	Effect	Sum of Squares	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
TSES overall score	Between Groups	2.711	4	0.678	1.076	.373	.043
	Within Groups	59.867	95	0.630			
	Total	62.579	99				
Student Engagement	Between Groups	2.502	4	0.625	0.615	.653	.025
	Within Groups	96.626	95	1.017			
	Total	99.128	99				
Instructional Strategies	Between Groups	6.111	4	1.528	1.615	.177	.064
	Within Groups	89.891	95	0.946			
	Total	96.003	99				
Classroom Management	Between Groups	1.900	4	0.475	0.497	.738	.020
	Within Groups	90.807	95	0.956			
	Total	92.707	99				

The second set of null hypotheses assessed in the present research study was as follows:

$H_0$5: There will be no significant difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$6: There will be no significant difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$7: There will be no significant difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$8: There will be no significant difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

In order to test these null hypotheses, an independent samples *t* test was chosen as the most appropriate statistical analysis to compare the observed differences between sample means of the self-efficacy outcome variable across civilian and military instructors. This quotient produces a *t*-statistic that will determine if the means come from similar or different populations, also using a .05 level of significance (Field, 2009; Urdan, 2017). The *t* test assumes that the dependent variable is normally distributed. A Kolmogorov-Smirnov test was calculated to determine whether the distribution of TSES and sub-scale scores were significantly different from that of a normal distribution (See Table 7). The TSES overall score was not significantly different from a normal distribution for either the military or the civilian instructors. On the self-efficacy in student engagement sub-scale, civilian instructors scores differed from a normal distribution, $p = .019$. Both military and civilian instructors' scores differed from normal distributions on the Instructional strategies sub-scale (p's $< .05$), as well as on the classroom management sub-scale (p's $< .001$). However, a *t* test is also assumed robust against moderate violations of normality (Field, 2009).

The data were screened for extreme outliers using box plots (See Figure 4). None were revealed so all data were retained.

The Levene's statistic assessed the assumption of homogeneity of variances across civilian and military instructors. The null hypothesis associated with the Levene's test is that all groups have equal population variances. The assumption of homogeneity of variance was

satisfied by failing to reject the null hypothesis associated with the TSES and each sub-scale (See Table 8).

Table 7

Test of Normality

	Kolmogorov-Smirnov Statistic	*df*	*p*
TSES			
Military	0.103	71	.058
Civilian	0.124	29	.200
Student Engagement			
Military	0.072	71	.200
Civilian	0.179	29	.019
Instructional Strategies			
Military	0.114	71	.023
Civilian	0.231	29	.001
Classroom management			
Military	0.152	71	.001
Civilian	0.262	29	.001

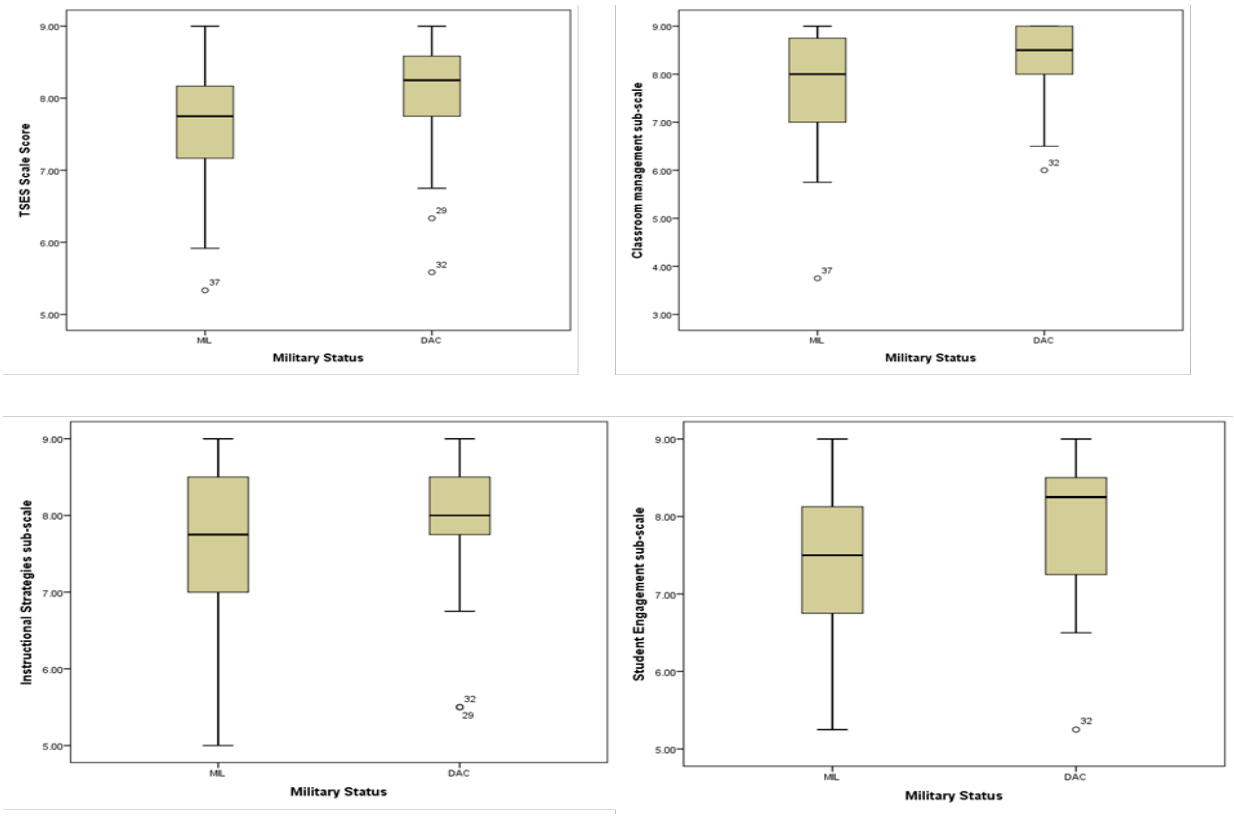

Figure 4. Boxplots of TSES and its Subscales for Military and Civilian Instructors

Because the overall measure of self-efficacy (TSES overall score) was not significantly different from a normal distribution for either the military or the civilian instructors, and *t* tests are robust against moderate violations of normality (Field, 2009), an independent-samples *t* test was conducted to determine whether instructors' self-efficacy differed across military and civilian instructors. Additionally, on the student engagement and classroom management self-efficacy sub-scales, civilians rated themselves as higher than military instructors. However, there was no statistical difference on instructional strategies self-efficacy (See figure 1 in the descriptive statistics section for a visualization of group means).

Table 8

Test of homogeneity of variance for military and civilian instructors

	Levene's Statistic	*df*	*p*
TSES overall	1.180	1,98	.950
Student Engagement	0.187	1,98	.667
Instructional Strategies	3.878	1,98	.735
Classroom management	1.042	1,98	.053

Null Hypothesis 5

The Kolmogorov-Smirnov test determined the TSES overall score was not significantly different from a normal distribution for either the military or the civilian instructors. The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A *t* test was used to test the null hypothesis regarding differences in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -2.381$, $p = .016$, $d = .78$ (See Table 9). The effect size was medium. Civilian instructors ($M = 8.04$, $SD = 0.82$) had significantly higher overall self-efficacy scores than military instructors ($M = 7.62$, $SD = 0.76$). Since a total of 12 tests of

significance were conducted, a Bonferroni correction is needed to guard against type I error. The alpha level is calculated to be: 0.10/12= .008, (Warner, 2013). Civilian instructors had higher overall self-efficacy scores than military instructors. Due to the Bonferroni correction, this null hypothesis cannot be rejected. Therefore, the researcher failed to reject the null hypothesis. There was no significant difference between military and civilian instructors' overall self-efficacy.

Null Hypothesis 6

The Kolmogorov-Smirnov test determined that on the TSES instructor self-efficacy in student engagement sub-scale, civilian instructors scores differed from a normal distribution, p = .019. The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A t test was used to test the null hypothesis regarding differences in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -2.243$, $p = .027$, $d = .98$ (See Table 9). The effect size was large. Civilian instructors ($M = 7.88$, $SD = 1.01$) had significantly higher student engagement self-efficacy scores than military instructors ($M = 7.39$, $SD = 0.97$). Since a total of 12 tests of significance were conducted, a Bonferroni correction is needed to guard against type I error. The alpha level is calculated to be: 0.10/12= .008, (Warner, 2013). Civilian instructors had higher student engagement self-efficacy scores than military instructors. Due to the Bonferroni correction, this null hypothesis cannot be rejected. Therefore, the researcher failed to reject the null hypothesis. There was no significant difference between military and civilian instructors' student engagement self-efficacy levels.

Null Hypothesis 7

Results from the Kolmogorov-Smirnov test unveiled that both military and civilian instructors' scores differed from normal distributions on the instructional strategies sub-scale (p's < .05). In spite of that, a t test is also assumed robust against moderate violations of normality (Field, 2009). The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A t test was used to test the null hypothesis regarding differences in instructor instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course. Equal variance was assumed. The null hypothesis was failed to be rejected at alpha level .008 where $t(98) = -1.640$, $p = .104$, $d = .37$ (See Table 9). The effect size was small. There was no significant difference in instructional strategies self-efficacy scores between civilian instructors ($M = 7.97$, $SD = 0.88$) and military instructors ($M = 7.61$, $SD = 1.01$) of the Sergeants Major Resident Course.

Null Hypothesis 8

The Kolmogorov-Smirnov test revealed that both military and civilian instructors' scores differed from normal distributions on the classroom management sub-scale (p's < .001). However, a t test is also assumed robust against moderate violations of normality (Field, 2009). The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A t test was used to test the null hypothesis regarding differences in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -2.010$, $p = .047$, $d = .95$ (See Table 9). The effect size was large. Civilian instructors ($M = 8.27$, $SD = 0.86$) had significantly higher classroom management self-efficacy scores than military instructors ($M =$

7.85, *SD* = 0.99). Since a total of 12 tests of significance were conducted, a Bonferroni correction is needed to guard against type I error. The alpha level is calculated to be: 0.10/12= .008, (Warner, 2013). Due to the Bonferroni correction, this null hypothesis cannot be rejected. Therefore, the researcher failed to reject the null hypothesis. There was no significant difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

Table 9

Results of t test analysis comparing military and civilian instructors

	t	*df*	*p*	*d*
TSES overall	-2.381	98	.016*	.78
Student Engagement	-2.243	98	.027*	.98
Instructional Strategies	-1.640	98	.104	.37
Classroom management	-2.010	98	.047*	.95

Note. * denotes significant at .008 alpha level

The third and final set of null hypotheses assessed in the present research study was as follows:

$H_0$9: There will be no significant difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$10: There will be no significant difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$11: There will be no significant difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$12: There will be no significant difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

In order to test these null hypotheses, an independent samples *t* test was chosen as the most appropriate statistical analysis to compare the observed differences between sample means of the self-efficacy outcome variable across instructors with and without education-background degrees. A Kolmogorov-Smirnov test was calculated to determine whether the distribution of TSES and sub-scale scores were significantly different from that of a normal distribution (See Table 8).

The TSES overall score was not significantly different from a normal distribution for instructors with an M.Ed. nor for instructors without an M.Ed. *p*'s > .05. On the self-efficacy in student engagement sub-scale, instructors without an M.Ed. scores differed from a normal distribution, $p = .044$. Scores for instructors with and without an M.Ed. did differ from normal distributions on the instructional strategies sub-scale (*p*'s < .05), as well as on the classroom management sub-scale (*p*'s < .001) (See Table 10). However, a *t* test is assumed to be robust against moderate violations of normality (Field, 2009). The data were screened for extreme outliers (See Figure 4). None were revealed so all data were retained (See Figure 5).

Table 10

Tests of Normality for instructors with and without an M.Ed.

	Kolmogorov-Smirnov Statistic	*df*	*p*
TSES			
M.Ed.	0.120	43	.134
No M.Ed.	0.103	57	.200
Student Engagement			
M.Ed.	0.095	43	.200
No M.Ed.	0.119	57	.044
Instructional Strategies			

M.Ed.	0.149	43	.017
No M.Ed.	0.163	57	.001
Classroom management			
M.Ed.	0.220	43	.001
No M.Ed.	0.145	57	.004

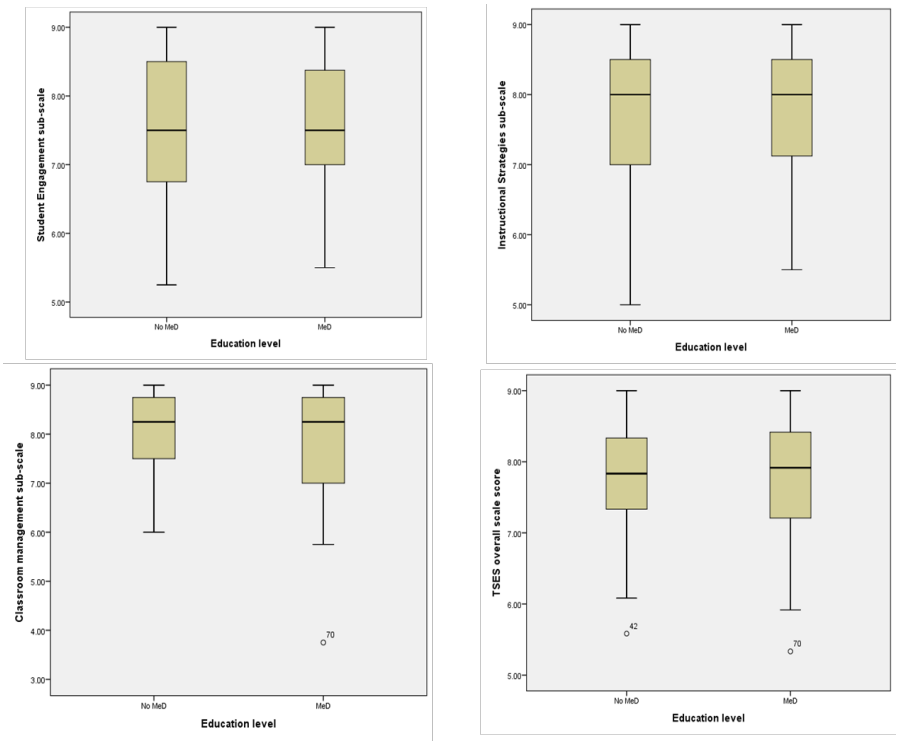

Figure 5. Boxplots of TSES and its subscales for teachers with and without an M.Ed.

The Levene's statistic assessed the assumption of homogeneity of variances across instructors with and without M.Eds. The null hypothesis associated with the Levene's test is that all groups have equal population variances. The assumption of homogeneity of variance was satisfied by failing to reject the null hypothesis associated with the TSES and each sub-scale (See Table 11).

Table 11

Test of homogeneity of variance for instructors with and without an M.Ed.

	Levene's Statistic	*df*	*p*

TSES overall	0.059	1,98	.120
Student Engagement	0.717	1,98	.399
Instructional Strategies	0.014	1,98	.906
Classroom management	3.486	1,98	.065

Because *t* tests are robust against moderate violations of normality (e.g. Field, 2009), and a visual inspection of the data revealed only moderate violations, and no other statistical assumptions were violated, an independent-samples *t* test was conducted to determine whether instructors' self-efficacy differed across instructors with an M.Ed. and those without an M.Ed.

Therefore, the null hypothesis, that there would be no difference between instructors with educational backgrounds and those with backgrounds in the liberal arts and/or sciences, was retained. No statistical difference in instructors' self-efficacy was found based on instructors' educational backgrounds (See figure 2 in the descriptive statistics section for a visualization).

Null Hypothesis 9

According to the Kolmogorov-Smirnov test, the TSES overall score was not significantly different from a normal distribution for instructors with an M.Ed. nor for instructors without an M.Ed. *p*'s > .05. The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A *t* test was used to test the null hypothesis regarding differences in overall instructor self-efficacy between instructors with an M.Ed. and those without an M.Ed. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -0.033$, $p = .973$, $d = .01$ (See Table 12). The effect size was negligible. There was no significant difference in overall self-efficacy scores between instructors with an M.Ed. ($M = 7.74$, $SD = 0.82$) and those instructors without an M.Ed. ($M = 7.74$, $SD = 0.79$). Therefore, the researcher failed to reject the null hypothesis. There was no significant difference in the instructor's overall self-efficacy scores between the Sergeants Major

Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

Null Hypothesis 10

The Kolmogorov-Smirnov test revealed the distribution of TSES scores on the instructor self-efficacy in student engagement sub-scale, instructors without an M.Ed. scores differed from a normal distribution, $p = .044$. However, a *t* test is assumed to be robust against moderate violations of normality (Field, 2009). The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A *t* test was used to test the null hypothesis regarding differences in instructor student engagement self-efficacy between instructors with an M.Ed. and those without an M.Ed. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -0.502$, $p = .617$, $d = .01$ (See Table 12). The effect size was negligible. There was no significant difference in student engagement self-efficacy scores between instructors with an M.Ed. ($M = 7.59$, $SD = 0.96$) and those instructors without an M.Ed. ($M = 7.49$, $SD = 1.04$). Therefore, the researcher failed to reject the null hypothesis. There was no significant difference in the instructor's student engagement self-efficacy scores between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

Null Hypothesis 11

Results from the Kolmogorov-Smirnov test revealed that both instructors with and without an M.Ed. instructors' scores differed from normal distributions on the instructional strategies sub-scale (p's $< .05$). Nonetheless, a *t* test is assumed to be robust against moderate violations of normality (Field, 2009). The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A *t* test was

used to test the null hypothesis regarding differences in instructor instructional strategies self-efficacy between instructors with an M.Ed. and those without an M.Ed. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -0.001$, $p = .999$, $d = .00$ (See Table 12). The effect size was negligible. There was no significant difference in instructional strategies self-efficacy scores between instructors with an M.Ed. ($M = 7.72$, $SD = 0.98$) and those instructors without an M.Ed. ($M = 7.71$, $SD = 1.00$). Therefore, the researcher failed to reject the null hypothesis. There was no significant difference in the instructor's instructional strategies self-efficacy scores between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

Null Hypothesis 12

The Kolmogorov-Smirnov test unveiled that both instructors with and without an M.Ed. instructors' scores differed from normal distributions on the classroom management sub-scale (p's < .001). However, a t test is assumed to be robust against moderate violations of normality (Field, 2009). The assumption of homogeneity of variance assessed by using the Levene's statistic was satisfied by failing to reject this null hypothesis. A t test was used to test the null hypothesis regarding differences in instructor classroom management self-efficacy between instructors with an M.Ed. and those without an M.Ed. Equal variance was assumed. The null hypothesis was rejected at alpha level .008 where $t(98) = -0.437$, $p = .663$, $d = .09$ (See Table 12). The effect size was negligible. There was no significant difference in classroom management self-efficacy scores between instructors with an M.Ed. ($M = 7.92$, $SD = 1.13$) and those instructors without an M.Ed. ($M = 8.00$, $SD = 0.83$). Therefore, the researcher failed to reject the null hypothesis. There was no significant difference in the instructor's classroom

management self-efficacy scores between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

Table 12

Results of t test analysis comparing instructors with educational backgrounds and non-educational backgrounds

	t	*df*	*p*	*d*
TSES overall	-0.033	98	.973	.01
Student Engagement	-0.502	98	.617	.01
Instructional Strategies	-0.001	98	.999	.00
Classroom management	0.437	98	.663	.09

Summary

The purpose of this quantitative research study was to examine the relationship between USASMA Sergeants Major Course instructors' self-efficacy within departments of the military, comparing between military and civilian's and the instructors' type of education. First, descriptive statistics were presented pertaining to how many instructors were in each department, how many military and civilian instructors there were, and the education type (M.Ed. or no M.Ed.). The descriptive statistics regarding the TSES (self-efficacy) and sub-scales were reported for the whole sample, as well as for each sub-group within the sample. Finally, the three research questions and associated hypotheses were addressed systematically. The assumptions of each statistical analysis were assessed, followed by the results for each analysis.

There was no statistical difference found in instructors' self-efficacy by their departments nor education type. However, there was a significant difference in instructors' self-efficacy based on whether they were civilian or military instructors. Civilians generally had higher self-

self-efficacy in teaching than military instructors. This was true of the overall TSES scale score, as well as the self-efficacy in student engagement and self-efficacy in classroom management sub-scales.

CHAPTER FIVE: CONCLUSIONS

Overview

This study examined the relationship between USASMA Sergeants Major Resident Course instructors' self-efficacy within departments of the military, comparing between military and civilian's and the instructors' level and type of education. The findings reported in chapter 4 will be discussed in relation to previous literature, other studies, and theories. Additionally, implications from the findings will be outlined, as well as limitations from the present study. Finally, recommendations for future research will be explored. As such, the primary components of this chapter are the discussion, implications, limitations, and recommendations for further research.

Discussion

The purpose of this quantitative research study was to examine the relationship between USASMA Sergeants Major Course instructors' self-efficacy within departments of the military, comparing between military and civilian's and the instructors' level and type of education. According the social learning theory, teachers' must have a strong foundation and belief in themselves (i.e. sense of self-efficacy) in order to help students improve their own self-efficacy and academic achievement (Bandura, 2001). Teachers' self-efficacy levels have been observed to have a strong influence on classroom management, function, and even achievement (Brown & Lent, 2006; Schunk & Pajares, 2005; Zimmerman, 2000). In fact, teachers with a stronger sense of self-efficacy generally employ more effective teaching strategies and practices (e.g. Zee & Kooman, 2016).

The first set of null hypotheses tested in this study is as follows:

$H_0$1: There will be no significant difference in USASMA Sergeants Major Course instructors' overall self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$2: There will be no significant difference in USASMA Sergeants Major Course instructors' student engagement self-efficacy levels across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$3: There will be no significant difference in USASMA Sergeants Major Course instructors' instructional strategies self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

$H_0$4: There will be no significant difference in USASMA Sergeants Major Course instructors' classroom management self-efficacy across the five departments of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational.

Self-efficacy was operationalized using the TSES and included overall self-efficacy and three sub-components (self-efficacy in student engagement, self-efficacy in instructional strategies, and self-efficacy in classroom management). The null hypothesis was retained for all four hypotheses. There were no significant differences in instructors' overall self-efficacy, self-efficacy in student engagement, self-efficacy in instructional strategies, or self-efficacy in classroom management across the five different departments.

One explanation for retaining the null hypotheses is likely due to high levels of teachers' sense of self-efficacy across all departments. The TSES measures self-efficacy and each of the sub-components of self-efficacy on a 10-point scale. The original study used to validate the TSES scale reported means across the different subcomponents between 6 and 7 (out of 10) (Tschannen-Moran, 2001). The average teachers' self-efficacy in the present study were slightly higher than the originally validated sample (Tschannen-Moran & Hoy, 2001). Therefore, it is likely that the instructors within the USASMA Sergeant Major Course had a higher than average sense of self-efficacy overall and across all three domains (student engagement, instructional strategies, and classroom management), regardless of which department they were teaching in.

This finding is consistent with what was originally suggested and predicted in chapter 1. That is, there would be no significant difference in Sergeants Major Residence Course instructor overall self-efficacy, self-efficacy in student engagement, self-efficacy in instructional strategies, and self-efficacy in classroom management across the departments (subjects) of professional studies, command leadership, army operations, force management, and joint interagency, intergovernmental, and multinational. This lack of difference across departments is likely due to the overall high level of self-efficacy observed in all departments.

Much of the research on teacher self-efficacy has been focused on K-12 education settings (e.g. Willms et al., 2009). One of the assumptions of adult learning is that learners rely on an accumulation of experiences as a resource for learning (Knowles, 1984). Educators with high self-efficacy, particularly those educators in adult learning settings, must actively engage the learners by leveraging their experiences. This idea can be broadly categorized as "student engagement". Student engagement can be incorporated at all levels of education (Trowler, 2010).

The second set of null hypotheses tested in the study is as follows:

$H_0$5: There will be no significant difference in instructor overall self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$6: There will be no significant difference in instructor student engagement self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$7: There will be no significant difference in instructor student instructional strategies self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

$H_0$8: There will be no significant difference in instructor classroom management self-efficacy scores between the civilian and military instructors of the Sergeants Major Resident Course.

Using results solely from the independent *t* test would have rejected null hypotheses five, six, and eight, while null hypothesis seven would have been retained. However, since a total of 12 tests of significance were conducted, a Bonferroni correction was needed to guard against type I error. The alpha level is calculated to be: 0.10/12= .008, (Warner, 2013). Due to the Bonferroni correction, the null hypothesis was retained for all four hypotheses. Noteworthy, the Bonferroni correction lowered the alpha level such that if there had not been such a large number of tests, the null would have been rejected for nulls five, six, and eight. Further study is needed.

Civilian instructors had higher overall self-efficacy scores than military instructors. Specifically, civilian instructors scored approximately 0.78 standard deviations higher than military instructors (Cohen's $d = 0.78$). Civilian instructors also had higher self-efficacy in student engagement and classroom management than military instructors. Civilians scored

approximately 0.98 standard deviations higher than military instructors in student engagement (Cohen's $d = 0.98$) and approximately 0.95 standard deviations higher than military instructors in class classroom management (Cohen's $d = 0.95$). However, civilian instructors did not have higher instructional strategy self-efficacy scores than military instructors.

According to the enactive mastery experience theory, when we view past experiences and tasks as successful, we are more likely to approach future endeavors with more confidence (Bandura, 1977, 1986). Enactive mastery has been observed to be a strong predictor of self-efficacy (Britner & Pajares, 2006; Klassen, 2004; Pajares et al., 2007). Perhaps civilian instructors have (more) had successful experiences in terms of their students' achievement compared to military instructors. Or, they may have had success in different academic environments, which contributed to their overall self-efficacy. This advantage in overall self-efficacy could also be the driving force behind the advantage for civilian instructors in student engagement and classroom management. For example, student engagement consists of engagement across multiple levels, such as: behavioral engagement, cognitive engagement, institutional engagement, academic engagement, psychological engagement, and social and emotion engagement. Perhaps civilian instructors have had more successful experiences across a variety of learning/teaching environments and were able to use those experiences as their foundation for how they engaged students.

The same logic may be applied to the advantage in classroom management self-efficacy. Because of the changes at the institution in which these data were collected, an influx of civilian and military instructors occurred. It might be the case that civilian teachers had more general experience in classroom settings than military instructors, therefore contributing to the difference in classroom management self-efficacy. Research has demonstrated that rules and classroom

procedures that identify specific expectations of behavior will have a positive influence on student performance (Marzano et al., 2015), especially when students are involved in the process of creating classroom rules and procedures. Perhaps civilian teachers had more global experience in defining classroom procedures, which facilitated the process within a military classroom setting.

Furthermore, the principles of vicarious experiences could also explain why civilian teachers had higher self-efficacy than military instructors (e.g. Morris et al., 2016). Vicarious experiences suggest that individuals judge their own abilities by comparing themselves with others that they perceive as similar. Perhaps civilian teachers have had more, or a wider range of, models with whom to compare their abilities.

Moreover, because civilian instructors exhibited higher levels of overall self-efficacy, student engagement self-efficacy, and classroom management self-efficacy, their range and type of delivery of material was likely greater (e.g. Rubie-Davies et al., 2012). Using scaffolding techniques, prior knowledge, and concept mapping have all be observed to improve instructional delivery (Stein et al., 1998; Fisher & Frey, 2010; Chall, 2000; Marzano, 2004; Mariotti, 2010; Guastello et al., 2000; Knipper, 2003). Conceivably, civilian instructors may have had higher levels of self-efficacy due to their wider range of exposure to multiple instructional methodologies.

The third set of null hypotheses tested in this study was as follows:

$H_0$9: There will be no significant difference in the instructor's overall self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$10: There will be no significant difference in the instructor's student engagement self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$11: There will be no significant difference in the instructor's instructional strategies self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

$H_0$12: There will be no significant difference in the instructor's classroom management self-efficacy scores, between the Sergeants Major Resident Course instructors with education-background degrees and those with degrees in the other liberal arts and sciences.

The null hypothesis for all four hypotheses was retained. There were no observed differences between instructors with and without educational-background degrees. However, most educational-background degrees focus on instruction at the K-12 level. There was no distinction made in the present study as to whether those in the educational-background degree group had programs focused on childhood or adult education.

Adults differ from children in terms of how they learn across variety of different domains (Knowles, 2005). As such, instructors with educational backgrounds focusing on child education would have no more experience, and therefore likely no more self-efficacy in instruction of adults, than instructors with non-educational degree backgrounds. Motivation to learn gradually becomes internalized as individuals mature (Knowles, 1984; Wlodowski, 1985). The adult learning environment relies more on self-centered learning to facilitate self-directed learning and experiential learning (Knowledge, 1984). Therefore, the instructors without education-background degrees might not suffer a disadvantage in terms of formal education preparation in forming an environment in which adult learning can thrive. As such, they may not suffer a lack

of self-efficacy in adult learning settings.

Implications

Self-efficacy has been observed to positively affect students across a variety of settings (Bandura, 1977; Tschannen-Moran & Hoy, 2001) and impact student achievement (Moore & Esselman, 1992). However, most research has focused on student self-efficacy (Brown & Lent, 2006; Schunk & Pajares, 2005; Zimmerman, 2000). There has been some research investigating the link between teacher self-efficacy and student achievement (e.g. Klassen & Tze, 2014). However, much of the literature on teacher self-efficacy has focused on the teaching at the primary or secondary educational level (e.g. Tschannen-Moran & Hoy, 2001), but not instructors of adult learners. The present study extends the literature on teacher self-efficacy to teachers of adult learners.

As such, adult learners differ from child learners across different domains. According to the Adult Learning Theory, adult learning should focus on experiential learning, and including adult learners on the planning and evaluation of what they are learning. Additionally, adult learners typically require that the knowledge they are gaining be relevant and valuable (Knowles, 2005).

The present study has several implications for the USASMA Sergeant Major Course program. Specifically, non-military instructors had higher levels of self-efficacy than military instructors. It might be the case civilian instructors have more general self-efficacy because they are more likely to teach in other outside settings in addition to military institutions of higher education. It would be interesting to examine student achievement outcomes to determine whether there is a relationship between content-specific success and teachers' self-efficacy in a military setting.

Limitations

There were several threats to both internal and external validity throughout the present study. The TSES was originally designed and studied using teachers at the K-12 level. In other words, it was not designed to assess instructors of adult learners. While the actual items in the survey appear to be general enough to assess both, there might be factors that affect teaching adult students that are not present while teaching children or adolescents. For example, adult learners require greater involvement in their classroom procedures and evaluations than younger learners. Instructors with high self-efficacy while teaching children or adolescents may not have the same self-efficacy while teaching adults, and vice-versa.

Another threat to internal validity is lack of specificity in the teacher educational background degrees. M.Ed. programs vary greatly, with some emphasizing curriculum and instruction techniques (for early, middle, or late childhood instruction), educational leadership, or educational technology. The wide range of M.Ed. programs limits the interpretability of that independent knowledge. For example, an instructor with an M.Ed. in early childhood curriculum design would have no higher self-efficacy for working with adult learners than an instructor with a non-educational degree background. Furthermore, non-educational background degree instructors might hold upper-level degrees in areas that are more relevant for content-specific courses. For example, an instructor of statistics, with a degree in mathematics, would most likely have more mathematical knowledge than an instructor with an M.Ed.

Similarly, a third threat to internal validity is the limited data pertaining to instructors' teaching background. While an advantage in self-efficacy was observed for civilian instructors, it is unknown whether those instructors or military instructors varied in their background knowledge of the subject matter in the courses they were teaching.

Finally, a threat to the external validity of this study, that is the generalizability of the findings to other adult learner settings, deals with the sample in the present population. This study was specifically designed for the USASMA Sergeant Major Course. Therefore, findings cannot be generalized to other non-military institutions. There might be some factors inherently different about the population of students that choose to attend a military institution and those who do not choose to attend a military institution.

Recommendations for Future Research

The present study provides a great foundation for future research to build on. One avenue of future research may continue examining the factors that create student success for the USASMA Sergeant Major Course, including instructor self-efficacy. Future studies could examine student achievement based on their instructors' level of self-efficacy to determine the extent to which self-efficacy influences academic success. Furthermore, future research may examine the impact of content knowledge on academic success. Instructors may have high general self-efficacy, but if they are teaching courses with content they are unfamiliar with, then that course- or content-specific self-efficacy may decrease.

Another avenue of future research could focus on self-efficacy across different institutions of higher learning. While this study sampled students at a prestigious military institution, it would be interesting to examine instructor self-efficacy at a non-military institution of higher learner to see if self-efficacy is equally as strong. Furthermore, comparing the academic outcome of students at military and non-military institutions of higher learning based on their instructors' self-efficacy would also prove valuable in extending the TSES to adult learning settings.

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APPENDIX A

Teachers' Sense of Self-efficacy Scale (short form)

https://mxtsch.people.wm.edu/Scholarship/TATE_TSECapturingAnElusiveConstruct.pdf

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APPENDIX B

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

July 2, 2020

Anson Jordan
Gary Kuhne

Re: IRB Exemption - IRB-FY19-20-464 SERGEANTS MAJOR COURSE INSTRUCTOR EFFICACY ACROSSDEPARTMENTS AT THE UNITED STATES ARMY SERGEANTS MAJOR ACADEMY

Dear Anson Jordan, Gary Kuhne:

The Liberty University Institutional Review Board (IRB) 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 the following exemption category, which identifies specific situations in which humanparticipants research is exempt from the policy set forth in 45 CFR 46: 101(b):

Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

Your stamped consent form can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. This form should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to yourprotocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

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

Sincerely,
G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office