

Andrews University

Digital Commons @ Andrews University

Dissertations

Graduate Research

2016

Self-efficacy, Locus of Control, Perceived Stress and Student Satisfaction as Correlates of Dissertation Completion

Gabriela A. Dumitrescu

Andrews University, gabriela@andrews.edu

Follow this and additional works at: <https://digitalcommons.andrews.edu/dissertations>



Part of the [Educational Psychology Commons](#), and the [Higher Education Commons](#)

Recommended Citation

Dumitrescu, Gabriela A., "Self-efficacy, Locus of Control, Perceived Stress and Student Satisfaction as Correlates of Dissertation Completion" (2016). *Dissertations*. 1615.

<https://digitalcommons.andrews.edu/dissertations/1615>

This Dissertation is brought to you for free and open access by the Graduate Research at Digital Commons @ Andrews University. It has been accepted for inclusion in Dissertations by an authorized administrator of Digital Commons @ Andrews University. For more information, please contact repository@andrews.edu.

2016

Self-efficacy, Locus of Control, Perceived Stress and Student Satisfaction as Correlates of Dissertation Completion

Dissertation Office

Follow this and additional works at: <http://digitalcommons.andrews.edu/dissertations>

This Dissertation is brought to you for free and open access by the Graduate Research at Digital Commons @ Andrews University. It has been accepted for inclusion in Dissertations by an authorized administrator of Digital Commons @ Andrews University. For more information, please contact repository@andrews.edu.

ABSTRACT

SELF-EFFICACY, LOCUS OF CONTROL, PERCEIVED STRESS AND
STUDENT SATISFACTION AS CORRELATES
OF DISSERTATION COMPLETION

by

Gabriela A. Dumitrescu

Chair: Elvin Gabriel

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: SELF-EFFICACY, LOCUS OF CONTROL, PERCEIVED STRESS AND STUDENT SATISFACTION AS CORRELATES OF DISSERTATION COMPLETION

Name of researcher: Gabriela Alina Dumitrescu

Name and degree of faculty chair: Elvin Gabriel, Ed.D.

Date completed: June 2016

Purpose of the Study

Doctoral students face a multitude of challenges in the process of completing their degree, and barriers to the success of doctoral program completion can occur at many different levels. Many factors contribute to dissertation completion or non-completion. Studying the influence of these factors on the task of dissertation completion may result in enhancing dissertation progress and program completion. The purpose of this study is to investigate the role of self-efficacy, locus of control, perceived stress and student satisfaction on dissertation completion among doctoral students in educational psychology at selected university in the United States.

Method

Survey research method was used as the research platform for this study. Online surveys using Survey Monkey were administered to doctoral student in Educational Psychology from selected universities in the United States. Dissertation self-efficacy was measured with the Dissertation Self-Efficacy Scale (DSES; Varney, 2003). Locus of control was measured with the Responsibility Scale (RS; Kluever & Green, 1998). Perceived Stress was measured with the Perceived Stress Scale (PSS; Cohen, Kamarch & Mermelstein, 1983). Student Satisfaction was measured by a single, straight forward question on how satisfied doctoral candidates and recent graduates were with the dissertation process. Path analysis was used to test the validity of a conceptualized model inter-relating participants' self-efficacy, locus of control, perceived stress, satisfaction and dissertation/program completion.

Results

Results indicate that participants in this study reported high levels of self-efficacy, low levels of shared responsibility suggesting that participants believe that students rather than the institution should be in control for tasks associated with dissertation progress; and moderate levels of perceived stress and satisfaction with the dissertation process. Also, the model developed to study the relationships and interrelations between the variables explained 17% of the variance in dissertation progress/completion, primarily by the direct effects of self-efficacy, perceived stress and student satisfaction, and indirectly by locus of control. The model suggested that doctoral candidates are more likely to make progress on their dissertation and complete their programs if they report high self-efficacy and greater satisfaction with the dissertation process, and if they report low

levels of institutional responsibility versus personal responsibility, and low or optimal levels of stress. High levels of stress appear to decrease both self-efficacy and satisfaction with the dissertation process.

Conclusions

An important finding of this study is the direct positive relationship between self-efficacy and student satisfaction with dissertation progress/completion, with self-efficacy being the most important predictor of dissertation completion followed by student satisfaction with the dissertation process. The more doctoral students believe in their ability to complete their dissertations and the more satisfied they are with the dissertation process, the more progress they make and the more likely they are to complete their doctoral program.

In summary, high levels of dissertation self-efficacy, low levels of shared responsibility, moderate or optimal levels of stress, and moderate levels of student satisfaction with the dissertation process could enhance program completion of educational psychology doctoral students. Both students and institutions should focus on increasing doctoral candidates' dissertation self-efficacy, establishing who is responsible for each task involved in the dissertation process, maintaining moderate or optimal levels of stress and reducing high stress when necessary, and also on increasing student satisfaction with the dissertation process by maintaining program quality and encouraging positive and supportive student - advisor relationships.

© Copyright by Gabriela A. Dumitrescu 2016
All Rights Reserved

Andrews University

School of Education

SELF-EFFICACY, LOCUS OF CONTROL, PERCEIVED STRESS,
AND STUDENT SATISFACTION AS CORRELATES
OF DISSERTATION COMPLETION

A Dissertation

presented in partial fulfillment

of the requirements for the degree

Doctor of Philosophy

by

Gabriela A. Dumitrescu

June 2016

SELF-EFFICACY, LOCUS OF CONTROL, PERCEIVED STRESS,
AND STUDENT SATISFACTION AS CORRELATES
OF DISSERTATION COMPLETION

A Dissertation
presented in partial fulfillment
of the requirements for the degree
Doctor of Philosophy

By

Gabriela A. Dumitrescu

APPROVAL BY THE COMMITTEE:

Chair: Elvin Gabriel

Member: Jimmy Kijai

Member: Nadia Nowsworthy

External

This dissertation is dedicated to the following:

To my loving husband – the wind under my wings

To Ingrid and Celine – my wonderful daughters

To my dear parents – my prayer warriors

To HIM – the Source of Everything

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS	vi
LIST OF TABLES	vii
LIST OF ABBREVIATIONS.....	viii
ACKNOWLEDGMENTS	ix
Chapter	
1. INTRODUCTION	1
Background.....	1
Rationale for the Study	4
Statement of the Problem	5
Purpose of the Study	7
Conceptual Framework	7
The Effects of Self-Efficacy on Task Completion	9
The Effects of Student Satisfaction on Task Completion	12
The Effects of Locus of Control on Task Completion	13
The Effects of Perceived Stress on Task Completion	15
Linking Self-Efficacy, Locus of Control, Perceived Stress, and Student Satisfaction	17
Linking Self-Efficacy with Perceived Stress	17
Linking Self-Efficacy with Locus of Control	18
Linking Locus of Control with Perceived Stress	19
Research Questions	21
Significance of Study	22
Definition of Terms	22
Definitions Published Sources	22
Researcher’s Definitions Based on Review Of Literature	24
Limitations	25
Delimitations	25
Organization of Study	26
2. REVIEW OF LITERATURE	28
A Brief History of Doctoral Degrees	28
Factors Influencing Dissertation Completion	30
General Self-Efficacy	32

Sources of Self-Efficacy	35
Academic Self-Efficacy	39
Dissertation Self-Efficacy	45
Research Self-Efficacy	49
Writing Self-Efficacy	51
Locus of Control	52
Locus of Control and Academic Achievement	55
Locus of Control and Dissertation Completion	58
Perceived Stress	60
General Perceived Stress	60
Perceived Stress and Dissertation Completion	65
Student Satisfaction	68
Linking Student Satisfaction with Self-Efficacy, Locus of Control and Perceived Stress	70
Linking Self-Efficacy with Locus of Control	75
Linking Self-Efficacy with Perceived Stress	78
Linking Locus of Control and Perceived Stress	80
3. METHODOLOGY	84
Introduction	84
Research Questions	85
Research Design	85
Population and Sample	87
Instrumentation	87
Dissertation Self-Efficacy Scale	88
Responsibility Scale	90
Perceived Stress Scale	93
Satisfaction with the Dissertation Process	95
Demographic Questionnaire	95
Procedure	96
Treatment of Data	97
Data Analysis	98
Summary	98
4. RESULTS	100
Introduction.....	100
Description of the Sample	100
Demographics	103
Index for Dissertation Completion	105
Results by Question	106
Research Question 1	106
Self-Efficacy	107
Locus of Control	108
Perceived Stress	109

Student Satisfaction with the Dissertation Process	111
Research Question 2	111
Re-Specified Model	117
Summary of Major Findings	121
5. SUMMARY, DISCUSSION, AND IMPLICATIONS	123
Introduction	123
Purpose of the Study	123
Summary of Literature Review	124
Summary of Methodology	129
Summary of Major Findings	130
Respondents' Demographic Characteristics	130
Research Question 1	131
Conclusions and Discussion	131
Research Question 2	135
Conclusions and Discussion	135
Importance and Significance of Study	140
Limitations	141
Implications for Practice	142
Implications for Future Research	145
Appendix	
A. IRB APPROVAL LETTER	147
B. SURVEY INVITATION	149
C. INFORMED CONSENT FORM	152
D. SURVEY	154
REFERENCE LIST	162
VITA	183

LIST OF ILLUSTRATIONS

1. Bandura's Triadic Reciprocal Determinism Model	8
2. Conceptual Framework Model	21
3. A Depiction of Bandura's (1977) Self-Efficacy Theory	39
4. A Depiction of Rotter's (1966) Locus of Control Theory	54
5. Hypothesized Model	113
6. Path Coefficients of Full Model	114
7. Re-Specified Model	117

LIST OF TABLES

1. Reliability for Self-Efficacy, Locus of Control and Perceived Stress	95
2. Demographic Characteristics of Participants	101
3. Dissertation Progress Index	106
4. Variable Means and Standard Deviations	108
5. Male vs. Female Comparisons	109
6. Completers vs. Non-Completers Comparisons Variables Mean and Standard Deviation.....	110
7. Bivariate Correlations among Variables	112
8. Table Guide to Explain Highly Correlated Variables With the Latent Variables	114
9. Raw Regression Weights Hypothesized Model	116
10. Re-Specified Model Fit Indices	118
11. Re-Specified Model Standardized Regression Weights	118
12. Re-Specified Model Causal Effects	120
13. Re-Specified Model Raw Regression Weights	120

LIST OF ABBREVIATIONS

ABD	All-But-Dissertation
BLOC	Balanced Locus of Control
CC	Locus of Control Current
DC	Dissertation Completion
GPA	Grade Point Average
ILOC	Internal Locus of Control
LOC	Locus of Control
PLOC	Powerful Others Locus of Control
PS	Perceived Stress
SAT	Satisfaction
SC	Locus of Control Should
SE	Self-Efficacy

ACKNOWLEDGMENTS

First and foremost I would like to thank my dissertation committee members, Dr. Gabriel, Dr. Kijai and Dr. Nosworthy, for their invaluable support and guidance during the different stages of the dissertation process. I know you have spent countless hours reading, providing me with invaluable feedback, and encouraging me along the way. I could not have done it without you!

A special thank you goes to my dissertation chair and mentor, Dr. Elvin Gabriel. There are no words to express my deep appreciation for your guidance and support over the years. You have so generously offered your time, support, opportunities and challenge, you have contributed to my development and growth, and you have helped to shape my vision of the educational psychologist I aspire to be.

I would also like to express appreciation of the entire ECP faculty for their instruction, guidance and leadership throughout my time in the program. In a special way I would like to thank my department chair, Dr. Woolford- Hunt, for encouraging me along way and cheering me on as I reached the finish line. In addition, I would like to express my appreciation to Anna Pisko Zub, graduate service coordinator, for her support and help processing necessary paperwork, and for always providing help and feedback in a timely manner. A big thank you to Karen Benjamin, departmental secretary, for allowing my daughter to spend time in her office as I was in meetings with my committee members discussing dissertation issues. Also, a heartfelt thank you to Dr. Thayer and Dr. Fukofuka for their invaluable help with the data analysis.

I am also deeply grateful to Vicki Wiley, my guardian angel, for helping me find a place to stay near campus as I did research and collected my data, and for the many times she has gone above and beyond for me over the years. My deepest gratitude goes out to Mrs. and Dr. Jeffery, Mrs. and Mr. Augsburg and Mrs. and Mr. Johnson for so generously opening their houses and providing me with a place to stay while I came back on campus to do research and finalize my dissertation. Heartfelt thanks to my friend, Nina Elmendorf- Steele for her emotional and financial support, and also to Vili Raceala who so generously provided me with a pair of wheels and made my life so much easier while being back on campus.

I have been incredibly blessed with a wonderful family that has always offered unconditional love and support. Specifically, I would like to thank my husband, Cristian, who so generously took over parental and household duties to allow me focus on my research, and who provided me with so much emotional and financial support throughout the doctoral program and the dissertation process. To my daughters, Ingrid and Celine, thank you for your patience and understanding, and for all the hugs and kisses when I needed them most. To my parents, Rodica and Titi Gidea, and my siblings Dana, Emi and Mihai, thank you for your invaluable support system, love and prayers. I could not have attained this degree or pursued my dreams without your loving contributions. I love you all!

Last, but not least, I would like to acknowledge God as the main source of the blessings throughout this very long journey. Thank you, Lord, for your strength when I was weak, and for sustaining me along the way. You are my all in all!

CHAPTER 1

INTRODUCTION

Background

The doctoral degree can be an academic or professional degree and is considered the upper limit or ultimate degree of higher education in most parts of the world. This type of degree allows one to become an expert in one's field through specific close research focused on a chosen subject in a particular profession and qualifies the holder to teach at university level (Gray, 2014).

The doctoral degree can be traced back to medieval Europe when it was used as a license and requisite to teach in a medieval university. Historically, the first doctoral degree was granted in Paris in the 12th century and the first PhD was granted in the 19th century in Germany (Bourner, Bowden, & Laing, 2001). In these early years, the most common subject areas for doctoral degrees were medicine, theology and law. In the U.S., the first PhD was conferred by Yale in 1861, followed by the University of Pennsylvania in 1871, Cornell University in 1872, Harvard in 1873 and Princeton in 1879, with Johns Hopkins becoming the largest producer of PhD's in the early years (Cole, 2012).

Currently, the main requirements for obtaining a PhD in the United States entail successful completion of doctoral level classes, passing of a comprehensive examination and defense of a dissertation. However, many doctoral students must cope with a multitude of challenges in order to successfully complete a doctoral degree, especially at the dissertation stage. All doctoral students begin the dissertation journey with the idea

of finishing it, but this often becomes a major obstacle for them, “some of whom become and remain all-but-the-dissertation students” (Blum, 2010, p.74).

The rate of doctoral student completion in the United States has remained approximately 50% over the past four decades (Ali & Kohun, 2007; Lovitts, 2001; Walker, Golde, Jones, Conklin Bueschel, & Hutchings, 2008). Researchers estimate that 40-60 % of doctoral students nationwide fail to obtain their degree, with most of them abandoning the program at the dissertation stage, a phenomena known as ‘all- but- dissertation’ (ABD) (Bair & Haworth, 1999; Berger, 2007; Bowen & Rudenstein, 1992; Ehrenber, Zuckerman, Groen & Brucker, 2009; Johnson, Green & Kleuver, 2000). Berger (2007) estimates that the average time for doctoral students to complete a dissertation and earn a doctoral degree is over 8 years, while in the field of education the time is estimated at 12.7 years (National Science Foundation, 2009).

Considerable variation is found across academic disciplines when comparing dissertation/doctoral completion rates (Bowen & Rudenstine, 1992; Nerad & Cerny, 1991; Ott, Markewick & Ochsner, 1994). Sheridan, Byrne, and Quina (1989) estimate that attrition rates of 50% are commonly found in doctoral programs in the field of education. By contrast, the highest doctoral completion rates are found within professional schools of law and medicine that report over 90% completion rates (Bowen & Rudenstine, 1992).

Social cognitive factors such as self-efficacy, locus of control, and perceived stress have been identified by researchers as potential important factors in task completion (Bandura, 1977, 1986; Felsten & Wilcox, 1992; Lovitts, 2001; McDermott, 2002; Pajares, 2001; Pintrich & Garcia, 1991; Pritchard & Wilson, 2003; Rotter, 1966;

Schunk, 1991; Wentzel, 1987; Zimmerman, 2000; Zimmerman & Ringle, 1981) . These researchers suggest that self-efficacy plays an important role in task completion and students with high self-efficacy are: more likely to expend effort when it comes to task completion (Bandura, 1986, 1997), more likely to choose more challenging tasks because they are confident that they can accomplish those tasks successfully (Pajares, 2001), more likely to work harder on accomplishing a task and persist longer when encountering difficulties (Schunk, 1981; Zimmerman, 2000; Zimmerman & Ringle, 1981) and more likely to use more cognitive and metacognitive strategies and persist longer in task completion than those with low self-efficacy (Pintrich & Garcia, 1991). Locus of control has been found by some researchers to have positive correlations with task completion and possibly with dissertation completion (McDermott, 2002; Rotter, 1966; Wentzel, 1987), while other researchers (Smith, 1985; Wagner, 1986) found non-significant correlations between these variables. Generally, researchers have found stress to be inversely related to academic tasks and outcomes (Felsten & Wilcox, 1992; Pritchard & Wilson, 2003; Russell & Petrie, 1992), however, some researchers found no association between stress and task performance and outcomes (Petrie & Stoeber, 1997).

Another factor that can influence dissertation completion is student satisfaction with the dissertation process, in particular the student-advisor relationship and the support received from the advisor/dissertation chair, the faculty and the institution (Aguinis, Nesler, Quigley, Lee, & Tedeschi, 1996; Bair & Haworth, 1999; D'Andrea, 2002; Hoskins & Goldberg, 2005; Maher, Ford, & Thompson, 2004; Spaulding & Rockinson-Szapkiw, 2012; Tinto, 1993; West, Gokalp, Pena, Fisher, & Gupton, 2011). Student satisfaction has been found to be positively associated with student success (Noel-Levitz,

2011), student retention (Hatcher, Kryter, Prus, & Fitzgerald, 1992; Love, 1993), quality and overall effectiveness of a university program (Astin, Korn, & Green, 1987; Bailey, Bauman, & Lata, 1990; Love, 1993), as well as dissertation completion and program completion among doctoral students (Bair & Haworth, 1999, Bloom, Propost Cuevas, Hall, & Evans, 2007; Garcia, Malott, & Brethower, 1988; Goulden, 1991; Lovitts, 2001). In particular, doctoral students' satisfaction with their relationship with their advisor/dissertation chair has been linked to students' successful completion of their dissertations and programs of study (Bair & Haworth, 1999; Council of Graduate Schools and Educational Testing Service, 2010; Garcia et al., 1988; Lovitts, 2001; Neale-McFall, & Ward, 2015). When doctoral students fail to complete their degrees, there is a rise in attrition rates, and both programs and students suffer (Green, 1997; Neale-McFall & Ward, 2015). Thus, the focus of this study would be on the relationship between self-efficacy, locus of control, perceived stress, and student satisfaction with dissertation completion.

Rationale for the Study

Researchers (Bandura, 1977; Felsten & Wilcox, 1992; Lovitts, 2008; Nejati, Abedi, Aghaei, & Mohammadi, 2012; Pajares, 1996; Park & Kim, 1998; Pintrich & De Groot, 1990; Pritchard & Wilson, 2003; Rotter, 1966; Russell & Petrie, 1992; Schunk, 1991) have also identified social cognitive factors such as self-efficacy, locus of control, and perceived stress, as well as student satisfaction, as potential important factors in task completion and student success. However, limited attention has been paid to these factors in research, especially in relation to dissertation completion (Colvin, 2012; Harsch, 2008;

McDermott, 2002; McGrath, 2002; Neale-McFall & Ward, 2015; Varney, 2003; Wentzel, 1987).

Existing research about the influence of the social cognitive constructs as well as student satisfaction on dissertation completion and outcomes has focused on specific education programs, such as Educational Leadership (McDermott, 2002; Sumner, 2008; Varney, 2003), Counseling Psychology (Benesek, 1998; Kardatzke, 2009), Counselor Education (Harsch, 2008; Neale-McFall & Ward, 2015), and Law (Graduate Student Happiness & Well-Being Report, 2014), but to date there is no research that has specifically addressed doctoral dissertation completion among students in doctoral level Educational Psychology programs.

Statement of the Problem

Barriers to the success of doctoral program completion can occur at many different levels, however, the dissertation process can be a real challenge for most doctoral students, with estimates up to 50% of doctoral students not completing their dissertations (Bair & Haworth, 1999; Berger, 2007; Ehrenber, Zuckerman, Groen & Brucker, 2009; Johnson, Green & Kleuver, 2000) and being classified as ‘all-but-dissertation’ (ABD’s) (Blum, 2010; Bowen & Rudenstine, 1992; Tinto, 1993). Significant personal, financial and institutional resources are invested in the process, and failure at the dissertation stage in the doctoral program can be very “expensive and painful for the student, discouraging for the faculty involved and injurious to the institution’s reputation” (Green, 1997, p.57).

The reasons for attrition and in particular the ABD phenomenon have been studied from many perspectives, since there are many factors that contribute to

dissertation completion or non-completion. Studies conducted on doctoral student samples indicate that some of these include *situational* (finances, family responsibilities, geographic distance from the university, priority of getting a PhD, job schedule), *institutional or program-specific* (relationship with the advisor/committee chairperson), *cognitive* (self-efficacy, self-esteem, locus of control), and *affective* (depression, anxiety) or *personality factors* (procrastination & perfectionism) (D'Andrea, 2002; Green, 1997; Muszynski & Akamatsu, 1991). Research has confirmed that the biggest obstacles to degree completion are the situational factors/stressors, particularly those related to finances (Nerad & Sands Miller, 1997; Kluever, 1997; Redden, 2008) and personality factors such as procrastination (Green, 1997; Muszynski & Akamatsu, 1991). Studies which sampled professors of education indicated the following to be obstacles of students completing their doctoral degree: *personal characteristics*, such as procrastination, dependency and unrealistic thinking, *academic competencies* including inadequate ability in conceptualizing, organizing and planning skills, and *life situations*, obstacles related to situational stressors such as finances, outside employment, and personal relationships (D'Andrea, 2002).

Studying the influence of these social cognitive factors (self-efficacy, locus of control, perceived stress) and program specific factors such as student satisfaction on the task of dissertation completion in particular may result in enhancing dissertation progress and doctoral program completion, and decreasing doctoral student attrition and reducing the number of students who are classified as ABD.

Purpose of the Study

The purpose of this study is to investigate the role of self-efficacy, locus of control, perceived stress and student satisfaction on dissertation completion among doctoral students in educational psychology. This area of research is important for the Educational Psychology field because it could expand the knowledge base about the role of cognitive and behavioral factors on task completion and outcomes such as dissertation completion, and it could be beneficial to educational psychology faculty, advisors and administrators in improving student satisfaction with the dissertation process, and enhancing program completion.

Conceptual Framework

The conceptual framework is based on Bandura's (1986) reciprocal determinism model which is the foundation of his Social Cognitive Theory, and is composed of three factors: personal factors, environmental influences and behavior. Personal factors include one's unique personality characteristics and cognitive factors such as thoughts, emotions, beliefs, expectations, goals, and so forth. Environmental influences are considered to be a person's social and physical surroundings, and believed to influence the intensity and frequency of the behavior, in the same way as behavior itself can impact the environment. Behavior is conceptualized as a person's skills, actions and outcomes.

Bandura (1986) believes that an individual's behavior influences and is influenced by both the environmental and personal factors. All these factors create interactions that result in a triadic reciprocity, and a change in one will influence the others as well. Reciprocal causation doesn't mean that the different sources of influence are equal in strength or all occur simultaneously. Based on the fact that the focus of Bandura's (1986)

reciprocal determinism model is on the interaction between the personal/cognitive factors, environmental/emotional factors and behavior, this seems particularly well suited as the basis for a theoretical framework when considering the variables being studied in this study and their relationship to dissertation completion. Figure 1 depicts Bandura's Triadic Reciprocal Determinism Model on which is based the conceptual framework of this study.

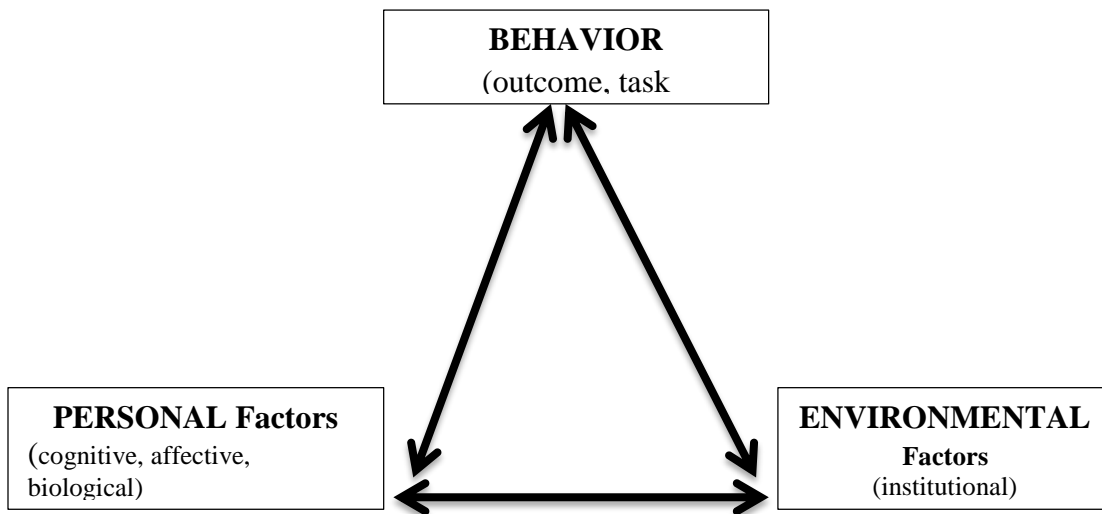


Figure 1. Bandura's Triadic Reciprocal Determinism Model

In this study, self-efficacy, locus of control, and perceived stress are considered personal factors, student satisfaction is considered part of the environmental factors because it occurs within the institutional context, and behavior is conceptualized as a person's skills and actions when accomplishing the task of dissertation completion.

The conceptual framework examines the relationship between these constructs and it is guided by Albert Bandura's social cognitive theory with a particular emphasis on

self-efficacy and student satisfaction, Julian Rotter's social learning theory on locus of control, and psychological stress theory proposed by Richard S. Lazarus and Susan Folkman. The framework's areas of focus are: (1) self-efficacy as a key element of the Social Cognitive Theory and its role in academic performance, and task completion; (2) student satisfaction and its influence on task completion as part of Bandura's Social Cognitive Theory; (3) locus of control based on Rotter's Social Learning Theory and its influence on individuals' perceptions of control and responsibility over outcomes, successes and failures in their lives; (4) perceived stress within the framework of Lazarus and Folkman's transactional model, and its relationship to dissertation completion; (5) interrelations between these constructs and their influence on dissertation completion.

The Effects of Self-Efficacy on Task Completion

The concept of self-efficacy is a key element in Social Cognitive Theory. It was initially developed by Bandura as part of the Social Learning Theory, which later progressed into the Social Cognitive Theory. Based on the Social Cognitive Theory individuals are agents proactively engaged in their own development, adaptation and change. According to Bandura (2005), an agent is someone who intentionally influences one's life circumstances, "In this view, people are self-organizing, proactive, self-regulating, and self-reflecting. They are contributors to their life circumstances not just products of them" (Bandura, 2005, p.1).

Bandura's Social Cognitive Theory emphasizes that there are many factors that influence human behavior and motivation, such as cognitive, behavioral, personal and environmental, and human functioning is the result of the interaction among these factors. Furthermore, the Social Cognitive Theory is composed of four processes that are

interrelated and each have an effect on motivation and goal attainment: self-observation, self-evaluation, self-reaction and self-efficacy.

Self-efficacy, one of the variables in this study, stands at the very core of social cognitive theory and has been defined by Bandura (1994) as individuals' beliefs in their own ability to organize and execute a given course of action to solve a problem or accomplish certain tasks in order to produce positive outcomes. A very important aspect of this theory is that individuals possess self-beliefs, which Bandura refers to as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p.391).

In other words "people's judgments", according to Bandura, are what individuals believe they can accomplish using their skills under certain circumstances (Snyder & Lopez, 2007), and it focuses mainly on individual's beliefs about their abilities to complete a task and attain a specific goal. People will have little incentive to persevere when they encounter difficulties if they don't believe they have the ability to produce the outcomes they desire. According to Bandura (1997), changing thought or desire into action depends on many factors, such as individuals' perceptions in their capabilities to manage certain tasks and affect change, the amount of time and effort they are willing to invest in completing a task, their ability to negotiate obstacles and barriers, and their view of success. He also argued that self-efficacy levels are not constant across an individual's experience. When attempting familiar tasks individuals are more likely to exhibit a high degree of self-efficacy, versus times when they are faced with new or unfamiliar tasks. In academic settings it is believed that the students who persist and succeed when faced with external obstacles and unfamiliar tasks are those who have a higher degree of self-

efficacy. In achievement settings individuals are constantly evaluating new information and for this reason skills, outcome expectations and perceived value of outcomes are not always stable (Schunk, 1991). However, once efficacy beliefs have been established over long periods of time and based on a large amount of information, they are unlikely to be changed (Bandura, 1997).

According to Bandura (1997) people use different experiences to judge their efficacy and determine if they believe they have the ability to accomplish specific tasks, such as: *mastery experiences* which serve as an indicator for an individual's personal ability and refer to learning through personal experience where one achieves mastery over a difficult or previously feared task, a process that helps an individual to develop and refine skills and thus enjoy an increase in self-efficacy; *vicarious experiences*, occurring when individuals adjust their personal level of efficacy after witnessing other people's performance and comparing their ability to those of others; *social persuasions*, when people's level of efficacy is influenced by verbal persuasion; and *physiological states or feedback* will affect people's beliefs and levels of self-efficacy based on how they perceive their emotional experiences and states such as anxiety, stress, arousal, and mood states. Furthermore, in order to measure judgments of self-efficacy, three basic scales are used: magnitude (measures the difficulty level), strength (confidence about performing successfully at diverse levels of difficulty) and generality (the degree to which expectations can be generalized across situations).

Self-efficacy has generated research in many fields and areas of study, such as medicine, business, athletics, social and political change, education, psychiatry, psychology. However, self-efficacy has been especially the focus of educational

constructs such as academic achievement, goal setting, motivation, problem solving, teaching, and attributions of success and failure. It has been concluded that self-efficacy influences achievement and academic performance directly and it plays a facilitative role in completion rates on final papers and examinations. My study will focus on the influence of self-efficacy on task completion, namely dissertation completion.

The Effects of Student Satisfaction on Task Completion

Still in the context of Bandura's Social Cognitive Theory, student satisfaction as an environmental factor is likely to influence behavior, more specifically dissertation/program completion. From a social cognitive perspective, learning, knowledge and outcomes are influenced by the kinds of interactions a student has with others and the context within which these interactions occur (Bandura, 2001).

During the dissertation stage, the student interaction with the advisor is critical. Research has indicated that doctoral students' satisfaction with their program is critical for doctoral completion (Bair & Haworth, 1999). Students' satisfaction with their doctoral programs has been measured by the quality of the program, interaction and communication of students with administration and faculty, consistency of evaluation across faculty, treatment of students as professionals and whether students received adequate guidance (Bair & Haworth, 1999). It has been found that graduate students with low levels of program satisfaction were more likely to consider leaving graduate school than those with high levels of satisfaction (Hesli, Fink, & Duffy, 2003). However, doctoral students who were more likely to complete their programs were those who were satisfied with their program of study and instruction, and with their relationship with their advisor. In fact, researchers have indicated that student-advisor relationships play a

critical role in doctoral students' decision to complete their dissertations and doctoral programs (Bair & Haworth, 1999; Lovitts, 2001, 2008; Muszynski, 1988).

The Effects of Locus of Control on Task Completion

This study also investigates the concept of locus of control from Rotter's Social Learning Theory. Rotter (1966) expanded on Bandura's concept of reciprocal determinism and developed the term locus of control to explain how individuals view their relationship to the environment. Locus of control is different from self-efficacy, which involves our belief in our own abilities, and it refers to our beliefs in regards to the power we have over our own lives. According to Rotter (1966), locus of control is a cognitive factor and refers to the extent to which individuals perceive that they have control over the expectancies of reinforcement and are responsible for the outcomes, success and failures in their lives. The driving force in Rotter's theory is that personality represents an interaction of the individual and the environment., the degree to which a person perceives events to be under his control (internal locus) or under the control of external factors (external locus). Individuals with a high internal locus of control believe that outcomes such as success and failure are influenced by their own efforts, and that responsibility for whether or not they get reinforced ultimately lies with themselves. On the other hand, individuals with an external locus of control believe that their own efforts have little impact on the amount of reinforcement they receive, and that outcomes such as success and failure in life are controlled by external factors such as luck, chance, fate, destiny, society or other forces beyond their control (Rotter, 1966).

Rotter (1954) believed that individuals with internal locus of control experience typical shifts in expectations following success or failure. He suggested that people who

succeed have increased expectancies following success and decreased expectancies following failure. In contrast, he suggested that individuals with an external locus of control show more atypical expectancy shifts, and they tend to exhibit decreased expectancies of success following success and increased expectations of success following failure.

The concept of control plays an important role in several psychological theories such as Rotter's social learning theory, Seligman's (1975) probability analysis of control, Weiner's (1986) attributional analysis of motivation and emotion, theories of learned helplessness, and Bandura's (1977) self-efficacy theory. Research has found that higher self-efficacy is correlated with internal locus of control, and individuals who believe they have control over future events will be more likely to exert that control in order to achieve a positive outcome (Cicirelli, 1980; Downey & Moen, 1987; Levenson, 1981; Mirowsky & Ross, 1986; Pincus & Callaha, 1994; 1995). It is believed that students with a higher degree of self-efficacy and a more internal locus of control will be more likely to put forth a greater effort to accomplish their goals despite the obstacles they encounter when compared with those with who have a weak sense of self-efficacy and external locus of control. Thus it is expected that doctoral students' self-efficacy and locus of control will contribute to dissertation completion, and this is one of the purposes of this study. The relationship between self-efficacy and locus of control and their joined influence on dissertation completion will be dealt with a little later under the corresponding section.

The Effects of Perceived Stress on Task Completion

Stress is part of everyday living and it is unavoidable. In academic institutions, stress can have both positive and negative consequences (Stevenson & Harper, 2006). However, a person's response towards stress is what makes the difference. According to Lazarus and Folkman (1984), a person's response towards stress depends on whether an event is appraised as a challenge or a threat. While challenging stimulus can lead to positive outcomes such as motivation and improved task performance, distress can cause problems and have serious effects on people such as anxiety, depression, social dysfunction and even suicidal intention. Individuals tend to use a variety of coping mechanisms and strategies in order to deal with stressful life events.

Lazarus (1966) believed that stress did not actually exist in the event but rather is a result of a transaction between a person and his or her environment. He suggested that stress encompasses a set of factors: cognitive, affective, and coping factors. In order to explain this interrelationship of factors, Lazarus developed and tested a transactional theory of stress and coping (TTSC) (Lazarus, 1966; Lazarus & Folkman, 1984). This model became very important in the field of cognitive psychology because it emphasizes the role of appraisal or self-evaluation on how a person reacts, feels and behaves.

Lazarus (1966) and Lazarus and Folkman (1984) identified three types of appraisal: primary, secondary and reappraisal. *Primary appraisal* is considered to be a judgment about how an individual perceives a situation. Individual perceptions of a situation are usually based on self-assessment of the possible effects of demands and resources. In case demands outweigh the available resources, then the individual may determine the situation represents either a threat (a potential for harm or loss), a harm

(actual harm has already occurred), or a challenge (the situation may have potential for some gain or benefit). *Secondary appraisal* is the process used by an individual to determine the available coping options to deal with a threat and their effectiveness. Very often, primary and secondary appraisals occur simultaneously and interact with one another (Lazarus & Folkman, 1984). *Reappraisal* is the process by which an individual continually evaluates, changes and relabels earlier appraisals as the situation evolves. During reappraisal perceived threat may now be viewed as a challenge or irrelevant. Appraisals of threat may be influenced by several situational factors, including their number and complexity; an individual's values, goals, self-esteem, social support, coping skills; proximity, intensity, and duration of threat; and the controllability of the threat.

Lazarus's transactional model for stress includes two other important concepts: coping and stress emotions. Lazarus (1966) identified two forms of coping: direct action and palliative, but later changed their names to problem-focused and emotion-focused. Problem-focused coping strategies are similar to problem-solving skills, while emotion-focused strategies are usually used to decrease emotional distress. The construct of stress emotions is considered to include anxiety, anger, sadness, guilt and fear, and affect thoughts, even though thoughts precede emotions.

Generally, stress has been negatively correlated with academic performance and task completion, and critical periods of stress were positively related to non-completion, with non-completers reporting more critical periods of stress that led to withdrawal from doctoral study when compared to those who completed doctoral study (Felsten & Wilcox, 1992; Pritchard & Wilson, 2003; Russell & Petrie, 1992). These are the sources of critical stress which differentiated completers from non-completers: academic pressures (Wood,

1978), work pressures (Feick, 1969; Nagi, 1974; Wood, 1978) and required examinations (Tierce, 1984). Additionally, Feick (1969) observed that non-completers reported more critical periods due to general discouragement, family problems and financial issues compared to completers.

Linking Self-Efficacy, Locus of Control, Perceived Stress and Student Satisfaction

Linking Self-Efficacy and Perceived Stress

Self-efficacy and stress are closely related concepts. According to Bandura (1997, 2001) self- efficacy is the foundation of human agency. Self-efficacy beliefs regulate human functioning through cognitive, motivational, affective and decisional processes, and they determine how individuals will persevere in the face of adversity and stressful situation. During stressful situations, self-efficacy is believed to play a key role in determining individuals' reactions to stress, as well as their quality of coping in stressful situations (Bandura, 1997).

As already observed in Lazarus' transactional model of stress, self-efficacy beliefs play an essential role in evaluating demands from the environment, in helping to regulate adaptive functioning, in helping individuals persist during stressful situations, and also in coping and resilience following adverse events (Hamill, 2003; Schwarzer & Renner, 2000). Individuals with high self-efficacy beliefs are more likely to evaluate demands as a challenge (Chemers, Hu, & Garcia, 2001; Lazarus & Folkman, 1984; Pintrich & De Groot, 1990) and focus on opportunities rather than threats or failures, because they are motivated to produce desirable results even in the least favorable situations (Benight & Bandura, 2004). Thus, self-efficacy plays an important role in coping and managing stress effectively (Bandura, 1995).

Linking Self-Efficacy and Locus of Control

While Bandura's (1977) theory asserts that self-efficacy is the belief that individuals can succeed in a specific area of their lives, locus of control indicates how much control individuals feel they have over the outcomes. This suggests that people with high self-efficacy in an area are more likely to persist longer in performing that task and believe that they can control the outcome of that situation than people with low self-efficacy (Strausser, Waldrop, Hamsley, & Jenkins, 1998). It is also proposed that individuals with more internal locus of control will have a higher self-efficacy than individuals with external locus of control (Phillips & Gully, 1997).

Locus of control by itself has not been found to have significant correlations with academic achievement and dissertation outcomes (Green, 1997). When studied as separate concepts, some researchers (Cicirelli, 1980; Downey & Moen, 1987; Levenson, 1981; Mirowsky & Ross, 1989; Pincus & Callaha, 1992, 1995) indicate that there is a relationship between self-efficacy and locus of control, more specifically that higher self-efficacy is correlated with internal locus of control. When studied in combination with self-efficacy, some researchers (Nowicki, Duke, Sisney, Sticker, & Tyler, 2004; Tella, Tella, & Adika, 2008) indicated a correlation between the concepts of self-efficacy and locus of control with academic achievement, while others (Choi, 2013; Dinçyürek, Güneyli, & Çağlar, 2012; Reynolds & Weigand, 2010;) have found no correlation. When associations were found between locus of control and academic achievement, these associations were found to be stronger in adolescents compared to adults and children (Findley & Cooper, 1983; Ogunmakin & Akomolafe, 2013). Researchers such as Findley and Cooper (1983), Sagone and DeCaroli (2014) suggest that higher achievers are more

internally controlled and have higher levels of self-efficacy than lower achievers, while Choi (2013) suggests self-efficacy as a significant predictor of academic achievement but not locus of control.

McDermott (2002) and Wentzel (1987) found that students with internal locus of control were more likely to complete the doctoral degree than students with an external locus of control, while Smith (1985) and Wagner (1986) have found no significant relationship between locus of control and outcome. However, additional research is needed to study the combined influence of locus of control and self-efficacy on dissertation completion, which is the purpose of this study.

Linking Locus of Control and Perceived Stress

Locus of control and stress are greatly intertwined that is almost impossible to investigate one without the other. There has been growing conviction among researchers that beliefs about personal control are also implicated in stress and coping (Cohen, 1980; Folkman, 1984).

A number of researchers have looked at the relationship between locus of control and stress and found that individuals with an internal locus of control are more likely to set high goals, to pursue challenges and persevere until a task is completed, to attain higher academic achievement, and they are also more likely to cope better with stress (Joe, 1971; Kalechstein & Nowicki, 1997; Lefcourt, 1976; Rotter, 1966). On the other hand, Rotter (1966) reported that individuals with an external locus of control are more likely to concentrate on obstacles rather than opportunities and not take responsibility for their success or failure. Also, externals have been found to exhibit lower self-confidence (Joe, 1971), higher levels of depression and anxiety (Joe, 1971; Molinari & Khanna,

1981; Phares, 1973), and tend to manifest increased distress and be positively correlated with general stress (Averill, 1973; Bernardi, 1997; Brosschot et al., 1998).

The role of self-efficacy and control in stress and coping processes has been largely recognized in the cognitive theory of stress and coping (Folkman, 1984; Folkman, Schaefer, & Lazarus, 1979). Folkman (1984) considered locus of control and self-efficacy as appraisal variables that operate as cognitive mediators of stress and stress related adaptive behaviors, with control beliefs influencing self-appraisal under novel conditions.

While Bandura's (1986) Triadic Reciprocal Determinism model provides a coherent framework linking personal factors (self-efficacy, locus of control, stress), and environmental factors (student satisfaction), most research available explored only their independent roles in explaining behavior (dissertation completion in doctoral students). No studies to date have examined their joint influence on academic success and more specifically on dissertation completion. One of the main contributions of the present study is to examine the joint effect of self-efficacy, locus of control, perceived stress and student satisfaction on dissertation completion. The following conceptual model (see Figure 2) has been proposed for this study based on Bandura's Triadic Reciprocal Determinism model. The model developed for the purposes of this study proposes that while locus of control explains both self-efficacy and perceived stress, self-efficacy and perceived stress explain dissertation progress satisfaction, and all three (self-efficacy, perceived stress and dissertation progress satisfaction) influence directly dissertation completion.

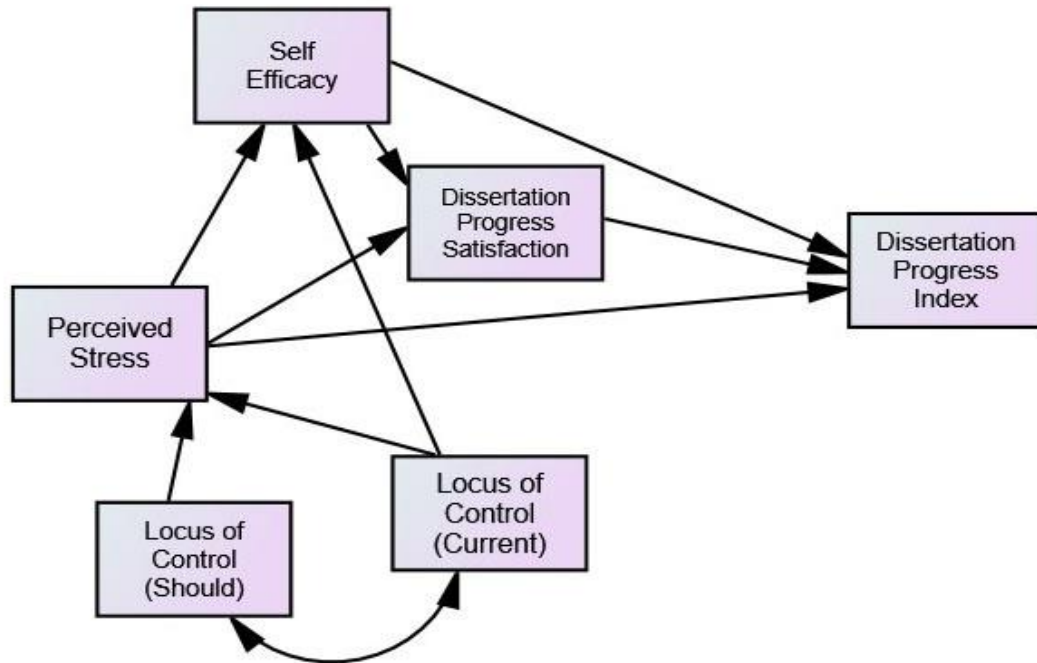


Figure 2. Conceptual framework model

Research Questions

This study attempted to answer the following questions:

1. What are the levels of self-efficacy, locus of control, perceived stress and satisfaction with the dissertation process among doctoral students in Educational Psychology?
2. What is the relationship, if any, between scores of self-efficacy, locus of control, perceived stress, student satisfaction with the dissertation process and dissertation completion?

Significance of the Study

This area of research is important for the Educational Psychology field because it could expand the knowledge base about the role of the joint effect of self-efficacy, locus of control, perceived stress and student satisfaction on dissertation completion. Research in this area could be beneficial to doctoral students, dissertation advisors, departmental chairs, academic deans, and it could be utilized to gain greater awareness and insights on how to monitor doctoral students for specific characteristics such as procrastination, dependency, lack of confidence (self-efficacy) in handling academic and personal problems (finances, family responsibilities, geographic distance from the university), quality of contact between doctoral students and their dissertation advisor, responsibility skills and inadequate ability with research and writing skills that may put them at risk of non-completion. Furthermore, this study will add to the literature by highlighting the effects of self-efficacy, locus of control, perceived stress, and student satisfaction on dissertation completion.

Definition of Terms

Definition Published Sources

The following terms and operational definitions are used throughout this study:

Academic self-efficacy refers to “an individual’s belief that they can successfully achieve at a designated level on an academic task or attain a specific academic goal” (Institute for Applied Psychometrics, 2008).

Academic stress refers to “a demand related to academics that tax or exceeds the available resources (internal or external) as cognitively appraised by the student involved” (Bisht, 1989).

Dissertation self-efficacy is “the belief in one’s ability to successfully write the doctoral dissertation” (Varney, 2003, p. 10).

Locus of control refers to the extent to which individuals perceive that they have control over the expectancies of reinforcement and are responsible for the outcomes, success and failures in their lives (Rotter, 1966). For the purpose of this study locus of control will be measured by a responsibility scale, The Dissertation Responsibility Scale (DRS; Kluever & Green, 1998).

Non-completers are doctoral students who leave graduate school prior to completing the dissertation (Lovitts, 2001). This term will be used interchangeably with ABD’s and doctoral candidates.

Perceived stress is a stimulus-response interaction and refers to a condition or feeling experienced when a person perceives that “demands exceed the personal and social resources the individual is able to mobilize.” (Lazarus & Folkman, 1984). For the purposes of this study, perceived stress will be measured by The Perceived Stress Scale (Cohen & Williamson, 1988).

Research self-efficacy refers to “one’s confidence in being able to successfully complete various aspects of the research process” (Varney, 2003, p. 10).

Self-efficacy is formally defined as “beliefs in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (Bandura, 1997, p. 2). For the purposes of this study, self-efficacy will be measured by The Dissertation Appraisal Inventory (DAI; Varney, 2003).

Self-efficacy beliefs are “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (Bandura, 1986, p.391).

Student satisfaction refers to student perceptions of learning experiences associate with education (Elliott & Shin, 2002). For the purposes of this study student satisfaction will refer to doctoral students overall satisfaction with the dissertation process, as a factor influencing program completion.

Writing self-efficacy beliefs are “individuals’ judgments of their writing capabilities and skills needed to perform different writing tasks” (Pajares & Johnson, 1993, p. 9).

Researcher’s Definitions Based on Review of Literature

All-but-dissertation (ABD). The term ABD will be used within this paper to refer to those doctoral students who have completed their coursework and their oral and written comprehensive exams, but have not completed their dissertations.

Attrition. For the purpose of this study, this term will refer to the number of doctoral students who either drop out of the program or do not complete the requirements of their program in order to graduate.

Completers are graduates of a doctoral degree; individuals who completed all the requirements for their doctoral programs including the dissertation and graduated with a doctoral degree. For the purpose for this study, completers will be recent graduates within the last 5 years.

Dissertation completion refers to the completion of all the requirements for dissertation such as writing of the proposal, acceptance of proposal, and successful defense.

Doctoral candidates are students who have completed all of the academic requirements for their degree, except their dissertation. This term will be used interchangeably with non-completers and ABD's.

Limitations

Results of this study will be constrained by the specificity of the convenience sample utilized -doctoral students in educational psychology programs from the selected universities across the United States. Therefore, results could be generalized to other doctoral programs in educational psychology of similar/comparable program structure, but beyond that, care should be taken regarding the population to which these findings are generalized.

Another limitation of this study could be that some of the participants who had already completed their dissertations or those who had been ABD for a long period of time will have to retrospectively recall their dissertation experience and selective memory may influence their reporting of their perceptions of self-efficacy, locus of control and perceived stress. Additionally, as a descriptive correlational study, no causality was implied between or among the variables.

Delimitations

For the purposes of this study, data collection will be limited to doctoral candidates in educational psychology programs including completers and non-completers (ABDs) at selected universities across the United States. Program emphases in the

educational psychology field included in the study are: General Educational Psychology; Human Development; Developmental Psychology; Cognitive Psychology; Behavioral Neuroscience; Learning and Behavior; School Psychology; Special Education; Psychometric Methods; Research & Evaluation.

Organization of Study

This study is organized into five chapters. Chapter 1 provides the background of the study and contains the statement of the problem, the purpose of the study, the significance of the study, limitations and delimitations of the study, research questions, definition of terms, conceptual framework, and the organization of the study. Chapter 2 presents a review of related literature to the factors of self-efficacy, locus of control, perceived stress and student satisfaction and their relationship to dissertation completion. The sections included in this chapter are: a brief history of doctoral degrees, factors influencing doctoral dissertation completion, general self-efficacy (sources of self-efficacy beliefs, academic self-efficacy, dissertation self-efficacy, research self-efficacy, writing self-efficacy), locus of control (locus of control and academic achievement, locus of control and dissertation completion), perceived stress (perceived stress and dissertation completion), student satisfaction with the dissertation process, linking self-efficacy with locus of control, linking locus of control with perceived stress, linking self-efficacy with perceived stress and summary. Chapter 3 presents the sampling process and population included in the study, the methodology used which includes the research questions, research design, instrumentation, data collection procedures, and administration of data collection and analysis. Chapter 4 shows the results and the data analysis of the study, the statistical analysis, and the tables that show the relationships between the variables.

Chapter 5 contains a summary of the study and seeks to integrate the results based on current theory and research. This chapter also highlights a brief discussion about the most important findings of the study. Furthermore, this chapter delineates conclusions, recommendations for practice, and recommendations for future research.

CHAPTER 2

REVIEW OF LITERATURE

Chapter 2 provides an in-depth understanding of the relationship between the social cognitive factors of self-efficacy, locus of control and perceived stress to the task of dissertation completion. A brief history of doctoral degrees will be provided, the factors leading to doctoral student attrition, as well as the factors influencing dissertation completion. Discussed sequentially will be prior research on the selected variables from the perspective of Social Cognitive Theory, Locus of Control and Perceived Theory, and the relationship among these variables and the dependent variable of dissertation completion.

A Brief History of Doctoral Degrees

Historically, the doctoral degree can be traced back to the Middle Ages in continental Europe before spreading to Canada and the United States. The original doctoral degrees were awarded in the professions of law, medicine and theology, and later on the Doctor of Philosophy was designated for doctoral degrees in disciplines outside of these fields. The first doctoral degree was granted in Paris in 1150 and the first PhD was granted in the 19th century in Germany. The first university to award a Ph.D. degree similar in requirements to today's (a sequence of coursework followed by completion and successful defense of a dissertation) was Friedrich Wilhelm University in Berlin, Germany (Bourner et al., 2001; Gray, 2014).

According to the National Science Foundation ([NSF] 2006), the Ph.D. emerged to the United States at the beginning of the 19th century. Prior to this, Americans who wanted to pursue doctoral studies traveled to Europe for advanced university study. The first American institution to award the Ph.D. degree was Yale in 1861, conferring it on three recipients: Arthur W. Wright, James M. Whiton and Eugene Schuyler (Bourner et al., 2001; NSF, 2006). A few years later other American universities conferred Ph.D. degrees, such as the University of Pennsylvania in 1871, Cornell University in 1872, Harvard in 1873 and Princeton in 1879, with John Hopkins becoming the largest producer of PhD's in the early years (Cole, 2012). Yale University was the first to award a Ph.D. to an African-American in 1876 (Adams, 2014) and a year later Helen Magill White was the first woman to receive a Ph.D. in the United States from Boston University (Encyclopedia Britannica).

The National Science Foundation ([NSF] 2006) reported that between 1920 and 1999 more than 1.35 million doctoral degrees were awarded in the United States. Sixty-two percent of these degrees were awarded in the fields of science and engineering, and the remaining 38% being awarded in other fields, with education being the largest major field to confer doctoral degrees during the last eight decades. Men accounted for 73% of the recipients, while the proportion of women who earned doctoral degrees increased from 15% in the 1920's to 41 % by the late 1990s. Minorities accounted for approximately 14% of all science and engineering doctorates awarded to U.S. citizens in 1995-1999.

Currently, the main requirements for obtaining a PhD in the U.S. entail successful completion of doctoral level classes, passing of a comprehensive examination and

defense of a dissertation. The dissertation process can be a real challenge for most doctoral students, and most of them must cope with a multitude of challenges in order to successfully complete their dissertation. All graduate students begin the dissertation journey with the idea of finishing it, but this often becomes a major obstacle for doctoral candidates, “some of whom become and remain all-but-the-dissertation students” (Blum, 2010). The following section provides an overview of the reasons for doctoral student attrition and the factors that influence dissertation completion.

Factors Influencing Dissertation Completion

Barriers to the success of doctoral program completion can occur at many different levels. However, the dissertation process can be a real challenge for most doctoral students (Bowen & Rudenstine, 1992; Colvin, 2012; Faghihi, 1998; Gardner, 2005, 2007, 2008, 2009, 2010; Harsch, 2008; Lovitts, 2000, 2001, 2005, 2007, 2008; National Science Foundation, 1998; Varney, 2003, 2010). Researchers estimate that approximately 50% of doctoral students nationwide fail to obtain their degree, while approximately 20-30% of doctoral students abandon the program at the dissertation stage, a phenomena known as ABD (Bair & Haworth, 1999; Berger, 2007; Blum, 2010; Bowen & Rudenstein, 1992; Gardner, 2009; Johnson et al., 2000; NSF, 1998; Tinto, 1993).

Berger (2007) estimates that after entering graduate school, the average student takes 8.2 years to obtain a PhD. However, according to the National Science Foundations’ reports from 2006, doctoral students in the field of education tend to take an average amount of time of 12.7 years (NSF, 2006). Additionally, Berger (2007) pointed out that while the average time for doctoral students to complete a dissertation and earn a doctoral degree is over eight years, in the field of education the time is estimated at 12-13

years. In the field of education, Sternberg (1981) and other researchers (Hodges, 1992; Sheridan et al., 1989) estimate that 30% to 50% of doctoral candidates fail to complete their dissertations, contrasted with the fields of business, law, and medicine that report over 90% completion rates (Bowen & Rudenstine, 1992; Nerad & Cerny, 1991; Ott et al., 1994; Polgrow, 1978). Significant personal, financial and institutional resources are invested at the doctoral level, and failure at the dissertation stage in the doctoral program can be very “expensive and painful for the student, discouraging for the faculty involved and injurious to the institution’s reputation” (Green, 1997, p. 57).

In order to reduce doctoral student attrition and increase dissertation completion researchers have studied some of the possible factors that may influence program completion. Studies conducted on doctoral student samples indicate the following factors: *situational* (finances, family responsibilities, geographic distance from the university, priority of getting a PhD, job schedule), *program-specific* (relationship with the advisor/committee chairperson), *cognitive* (self-efficacy, self-esteem, locus of control), and *affective* (depression, anxiety) or *personality factors* (procrastination & perfectionism) (Green, 1997; Muszynski & Akamatsu, 1991). Research findings indicate that the biggest obstacles to degree completion are the situational factors/stressors, particularly those related to finances (Kluever, 1997; Nerad & Sands Miller, 1997). Similarly, studies that sampled professors of education indicated that some of the obstacles that doctoral students have to overcome in order to complete their doctoral degree are: *personal characteristics*, such as procrastination, dependency and unrealistic thinking, *academic competencies* including inadequate ability with conceptualizing,

organizing and planning skills, and *life situations*, obstacles related to situational stressors such as finances, outside employment, and personal relationships (D'Andrea, 2002).

Researchers have also studied additional factors impeding doctoral completion such as socialization variables and social cognitive variables. Socialization variables previously studied include academic discipline (Austin, 2002; Colvin, 2012; Gardner, 2005, 2007, 2010), student involvement in either graduate research or teaching assistantships (Colvin, 2012; Faghihi, 1998; Garcia et al., 1988) and part-time versus full-time enrollment (Colvin, 2012; Pittman, 1997; Tinto, 1991, 1993). Social cognitive factors identified by researcher to influence program completion are: self-efficacy (Colvin, 2012; Faghihi, 1998; Harsch, 2008; Varney, 2003, 2010), locus of control (Koiner, 1992; McDermott, 2002, Smith, 1985; Wentzel, 1987) and perceived stress (Bowman & Bowman, 1990; Esping, 2010; Lovitts, 2001; McDermott, 2002; McGrath, 2002; Tierce, 1984; Wood, 1978). However, limited attention has been paid to this set of factors in relation to dissertation completion, specifically in the field of educational psychology.

This area of research is important for the Educational Psychology field because it could expand the knowledge base about the role of cognitive and behavioral factors on task completion and outcomes such as dissertation completion, and it could provide beneficial interventions on how to enhance program completion.

General Self-Efficacy

Bandura (1997) defined self-efficacy as individuals' beliefs in their own ability to organize and execute a given course of action to solve a problem or accomplish certain tasks in order to produce positive outcomes. Self-efficacy is the central construct of the

Social Cognitive Theory, which views individuals as agents proactively engaged in self-organizing, self-reflecting and self-regulating processes. This self-system enables individuals to exercise a measure of control over their thoughts, feelings and actions. In other words, this self-system serves as a self-regulatory function and provides individuals with the capability to alter their environments and influence their own actions (Pajares, 1996). Individuals' environments, self-beliefs and future performances are informed and altered by how they interpret the results of their previous performance attainments. This is the foundation of Bandura's (1986) conception of reciprocal determinism which is the result of the interactions between (a) personal factors in the form of cognition, affect, and biological events, (b) behavior, and (c) environmental influences (Pajares, 1996).

Bandura considered that human beings engage in self-reflection, a form of self-referent thought. He argued that self-reflection is the most uniquely human characteristic, for it mediates between knowledge and action in order to evaluate and alter their own thinking, experiences, thought processes and behavior. These self-reflections or self-evaluations include perceptions of self-efficacy or beliefs in one's capabilities required to organize and execute courses of action in order to manage prospective situations (Pajares, 2001).

A central aspect of the Social Cognitive Theory is that individuals possess self-beliefs, which Bandura refers to as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p.391). Snyder and Lopez (2007) reiterated Bandura's ideas by explaining that 'people's judgments' are what individuals believe they can accomplish using their skills under certain circumstances and it focuses mainly on individuals' beliefs

about their abilities to complete a task and attain a specific goal. Such self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment.

For this reason, people's behavior and performance can often be better predicted by the beliefs they hold about their capabilities than by what they are actually capable of accomplishing. Does this mean that people can accomplish tasks beyond their capabilities just by believing that they can? According to Pajares (2001), the answer is no, since in order to attain competent functioning one is required to not only possess self-beliefs, but also the necessary skills and knowledge and know how to use them to reach the desired outcome.

Bandura (1997) characterized self-efficacy as a multidimensional construct that varies in strength, generality, and level (or difficulty). Thus, some people possess a strong sense of self-efficacy and others do not; some have efficacy beliefs that encompass many situations, while others have narrow efficacy beliefs; and some may believe they are most efficacious even on the most difficult tasks, while others believe they are efficacious only on easier tasks. For example, some students may possess self-efficacy transferability beliefs across activities, such as from algebra to statistics, while others may not. Other students may have the ability to perform successfully at different levels of difficulty on a particular task, such as spelling words of increasing difficulty, others do not.

According to Bandura (1997) efficacy beliefs affect and influence behavior in several important ways. They influence the choices individuals make and the courses of action they choose to pursue, how much effort people will expend on given activities and endeavors, how long they will persevere when faced with obstacles and failures, and how

resilient they will be in the face of adverse situations. Efficacy beliefs also influence the amount of stress and anxiety individuals experience when they engage or perform a task, and the level of accomplishment they attain. These influences are the reason why Bandura argued that “beliefs of personal efficacy constitute the key factor of human agency” (Bandura, 1997, p.3).

Findings based on Bandura’s (1997) research, indicate that high levels of self-efficacy are influenced by how much effort is put forth in given endeavors, how long they will persevere in the face of obstacles and failures, and their resilience to adversity. However, based on the research of Britner and Pajares (2006), self-efficacy levels are not always constant across an individual’s experience. For example, a high degree of self-efficacy will be exhibited by those individuals who are attempting a task they are familiar with, versus those individuals who have never encountered that task before and are not familiar with the task they are attempting to complete. It is believed that students who have a higher degree of self-efficacy are more likely to succeed while attempting an unfamiliar task and persist in the face of external obstacles. Furthermore, in achievement settings, skills, outcome expectations and perceived value of outcomes are not always stable, because the individual is constantly evaluating new information (Schunk, 1991). However, once efficacy beliefs have been established over long periods of time and are based on large amount of information, they are unlikely to be changed (Bandura, 1997).

Sources of Self-Efficacy

According to Bandura (1997) there are four specific sources from which self-efficacy beliefs are developed, such as mastery experiences (or past experiences), vicarious experiences, social persuasions, and physiological states and indexes.

Mastery experiences are the most influential source of self-efficacy beliefs because they serve as an indicator for an individual's personal ability and "provide the most authentic evidence of whether one can master whatever it takes to succeed" (Bandura, 1997, p.80). The more success experiences a person has, the higher will be the self-efficacy appraisal. "Failures that are overcome by determined effort can instill robust precepts of self-efficacy through experience that one can eventually master even the most difficult obstacles," (p.399) such as completion of a doctoral degree (Bandura, 1997). The implications for academic achievement and task performance based on this statement are very important: verbal persuasion methods to raise competence and confidence should be accompanied by authentic mastery experiences. Students who performed well in school will be more likely to have a high self-efficacy for future academic tasks/performances. However, according to Lovitts (2008), this assumption may not be always true for doctoral students, since the transition from course-taker to independent scholar/researcher is difficult for many doctoral students and success in the classroom does not always translate to success during the dissertation process. Some students, such as those with a high degree of analytic intelligence but with low levels of practical and creative intelligence, may find the transition very difficult for having to go from a high sense of self-efficacy during the coursework to a low sense of self-efficacy during the writing and research stage of the dissertation process (Faghihi, 1999).

The second source of efficacy information is the *vicarious experience* which occurs when individuals adjust their personal level of efficacy after witnessing other people's performance and comparing their ability to those of others. Individuals who are uncertain about their abilities or have limited prior experience could become more

sensitive to vicarious experiences. However, research has demonstrated that the effects of models are particularly relevant in this context (Schunk, 1981). Significant models in one's life could help individuals develop self-beliefs that will permanently influence the course and direction of their lives. Likewise, a highly regarded teacher who models excellence in the academics could help her students develop the belief that they can do that. Bandura (1994) states that "through their behavior and expressed ways of thinking, competent models transmit knowledge and teach observers effective skills and strategies for managing environmental demands" (p.72). Therefore, significant models can have a positive or a negative effect on the self-efficacy of observers and thus this may be beneficial for doctoral students. As Varney (2010) has noted, some doctoral students might be inspired by the experiences of other doctoral students or doctoral graduates who had previously faced different obstacles but they persisted and completed their dissertations.

Social persuasions is another way by which individuals create and develop self-efficacy beliefs based on the social messages they receive from others. This is a weaker source of efficacy information than mastery or vicarious experience since persuasions can involve verbal judgments of others which sometimes can be effective while other times could be empty praise. Individuals who can be persuaded verbally that they have the ability to master a given task or activity are more likely to expend greater effort and sustain it than individuals who have a tendency to self-doubt and dwell on personal deficiencies when faced with difficulties. This emphasizes the importance that a doctoral student's beliefs in his or her ability to complete the dissertation could be influenced by the types of verbal messages/persuasion that he/she receives during the dissertation

process. Based on Bandura's (1986) findings, doctoral students may find positive verbal persuasion from fellow students, faculty members or an advisor very helpful and inspiring.

The fourth source of self-efficacy beliefs is related to *physiological states* such as anxiety, stress, arousal, fatigue and mood states. Physiological states will affect people's beliefs and levels of self-efficacy based on how they perceive and interpret their emotional experiences and states. People with a high sense of self-efficacy are more likely to view their state of affective arousal as a source of energy that facilitates performance, while those who have a tendency to self-doubt will tend to regard their arousal as a debilitator. Based on previous research it has been found that most doctoral students feel very anxious regarding the dissertation process and perceive it as stressful and tiring (Faghihi, 1998; Harsch, 2008). Thus, it is highly important for both the student and dissertation advisor to work together to minimize the stress and negative effects of these physiological states during the dissertation experience.

These four sources of self-efficacy beliefs directly impact several behavioral outcomes, such as: (1) Approach vs. avoidance, (2) performance, and (3) persistence (Bandura, 1977, 1997). It is believed that an individual with high self-efficacy for a particular behavior is more likely to approach, perform better, and persist at that behavior, while an individual with low self-efficacy is less likely to approach, perform well and persist at that behavior. See Figure 3 for a visual representation of the interactions between the sources and outcomes of self-efficacy beliefs.

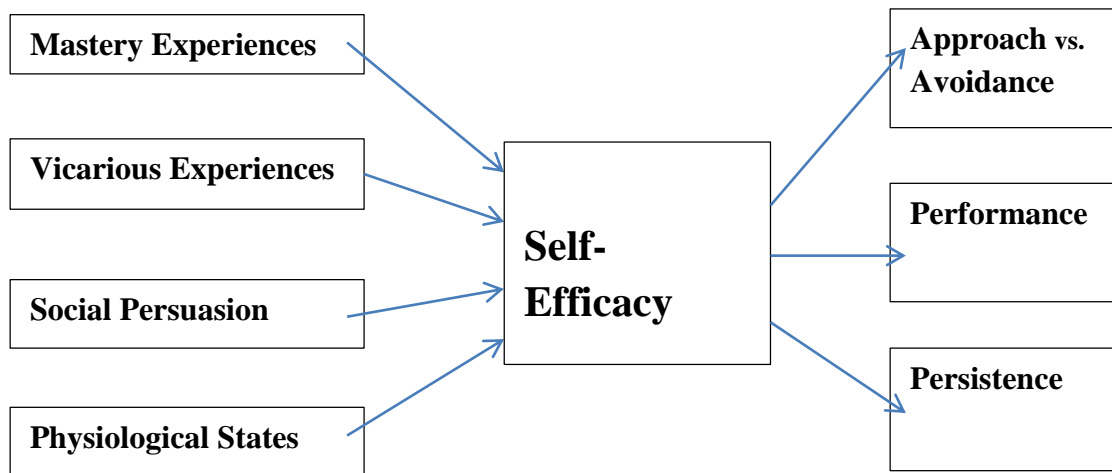


Figure 3. A depiction of Bandura's (1977) self-efficacy theory. Adapted from Betz (2000).

Self-efficacy is generally regarded as a multidimensional construct. Since self-efficacy is specific in nature and in our case dissertation completion is discussed within an academic context, it is imperative to examine self-efficacy for academic achievement and its influence on task completion.

Academic Self-Efficacy

Academic self-efficacy is a multi-component construct grounded in self-efficacy theory and it refers to an individual's belief that he/she can successfully organize and perform an academic task or achieve a specific academic goal at a designated level in a specific academic subject area (Bandura, 1997; Eccles & Wigfield, 2002; Elias & Loomis, 2002; Schunk & Pajares, 2002). Some students may possess general self-efficacy for believing in their ability to master and manage general life situations, but they may possess low self-efficacy in academic settings. Some overlap may exist between social self-efficacy and academic self-efficacy. However, according to Hall,

Smith and Chia (2008) academic self-efficacy is situation specific and must be measured as such.

Bandura (1997) expanded on this view and stated, “Students may perform poorly either because they lack the skills or because they have the skills but lack the perceived personal efficacy to make optimal use of them” (p.215). Numerous studies have shown the importance of academic self-efficacy with regard to academic performance in college, as shown in the following studies. Self-efficacy has been correlated with student persistence in college, academic achievement and motivation in academic settings (Bandura, 1986; Schunk, 1984; Zimmerman, 1989). Self-efficacy has also been positively correlated with academic performance and increased grade point average, as well as persistence in college (Bong, 2001; Lent, Brown, & Larkin, 1984; Pajares & Schunk, 2001; Stuart, 2013; Zajacova, Lynch, & Espenshade, 2005). Furthermore, researchers have positively correlated self-efficacy with an increase in study hours for college students, student satisfaction with college life (DeWitz & Walsh, 2002; Torres & Solberg, 2001), as well as college students purpose in life (DeWitz, Woolsey, & Walsh, 2009).

Zimmerman, Bandura, and Martinez-Pons (1992) indicated that academic self-efficacy influences achievement directly as well as indirectly by raising students’ grade goals. These findings suggested that students who believed they were capable of performing academic tasks used more cognitive and metacognitive strategies and persisted longer than those who did not. They stressed that if students had not learned these strategies, then they were less likely to persist very long in a task due to a lack of cognitive and metacognitive strategies. Furthermore, they concluded that academic self-

efficacy correlated with academic performances, and more importantly academic self-efficacy played a facilitative role in regards to higher performance and completion rates on final papers and examinations.

Research in academic settings has focused primarily on three major areas. One area has focused on the link between efficacy beliefs and college major and career choices, especially in the areas of science and mathematics (Farmer, Wardrop, Anderson, & Risinger, 1995). Various studies have demonstrated the mediational role of self-efficacy beliefs in the selection of career choice in college students. Findings indicate that undergraduates are more likely to choose majors and careers in which they feel most competent and avoid those in which they believe themselves less competent or less able to compete. Researchers have found the mathematics self-efficacy of college undergraduates to be more predictive of their mathematics interest and choice of math-related courses and majors than their prior math achievement or math outcome expectations (Pajares, 1996). Furthermore, the research indicates that male undergraduates reported higher mathematics self-efficacy than did female undergraduates (Pajares & Miller, 1994). This type of research has valuable implications for the counseling and vocational psychology theory and practice.

The second area of studies focused on efficacy beliefs of teachers and student outcomes. Findings of these studies suggest that teachers' self-efficacy beliefs affect their instructional practices and their orientation toward the educational process and their student outcomes (Pajares, 1996). Researchers have found that teachers with a low sense of efficacy tend to hold a custodial orientation which impacts students' motivation. They emphasize rigid control of classroom behavior and rely heavily on extrinsic enticements

and negative sanctions to get students to study (Woolfolk & Hoy, 1990; Woolfolk, Rosoff, & Hoy, 1990). Teachers with high instructional efficacy focus on creating mastery experiences for their students, building student self-efficacy beliefs and providing a positive learning atmosphere, while teachers with low instructional self-efficacy tend to undermine students' cognitive development as well as students' judgments of their own capabilities. Teacher efficacy is an indicator of student achievement and student achievement beliefs across various areas and levels (Ashton & Webb, 1986; Midgley, Feldlaufer, & Eccles, 1989).

The third area of studies has investigated the relationship between academic efficacy beliefs with other motivation constructs and with students' academic performances and achievement. Constructs included in these studies are: attributions, self-regulation, modeling, strategy training, social comparisons, problem solving, reward contingencies, test and domain-specific anxiety, as well as other self-beliefs and expectancy constructs, and varied academic performances across domains (Pajares, 2002).

Findings from available studies have strongly supported Bandura's argument that self-efficacy beliefs mediate the effect of skills or other self-beliefs on subsequent performance attainments which are influencing and being influenced by effort, persistence and perseverance. This is illustrated in a study conducted by Collins (as cited in Pajares, 1996) on selected children at three levels of mathematical ability – low, medium and high – and she asked them to judge themselves if they were at high or low self-efficacy on each of the three levels of mathematical ability as they were given to solve difficult math problems. At each ability level there were children who were assured

in their perceived math self-efficacy and others who had self-doubts. The results of the study show that at each level of ability, children of high self-efficacy and those who believed strongly in their capabilities performed better, were quicker to discard faulty strategies, and chose to rework some of the problems they failed and did so more accurately than did children of equal ability who were overwhelmed by self-doubts. This study was able to show that positive attitudes or beliefs (toward mathematics), as highlighted in the social cognitive theory, were better predicted by perceived self-efficacy than by actual ability. As this study showed, “people who perform poorly may do so because they lack the skills or they have the skills but they lack the sense of efficacy to use them well” (Bandura, 1993). However, Wentzel (1999) has noted that although positive self-efficacy may be important for academic performance, it will not produce competent performance (by itself) in the absence of prerequisite skills and knowledge.

Other studies have found that self-efficacy also enhances students’ memory performance by enhancing persistence (Berry, 1999). Similarly, studies of college students who pursued science and engineering courses have shown that high self-efficacy beliefs influence the academic persistence necessary to maintain high academic achievement (Lent et al., 1984, 1986). Furthermore, research findings by Pintrich and Garcia (1991) suggest that students with high self-efficacy who believe they are capable of performing academic tasks persist longer on a given task and use more cognitive and metacognitive strategies than those who do not. Furthermore, Pintrich and DeGroot (1990) found that academic self-efficacy correlated with academic outcomes such as final year examination scores. Similarly, Schunk (1991) indicated in his research that high self-efficacy individuals worked harder on accomplishing a task and persisted longer

when they encountered difficulties, while low self-efficacy individuals tended to quit or avoid a task. In the same context, Bandura (1993) found that individuals with a low sense of self-efficacy were more likely to give up when challenged by a difficult situation, while individuals with a high sense of self-efficacy were more likely to attempt different strategies or develop new ones.

Research on academic self-efficacy in other subject areas showed similar results. For example, Pajares and Johnson (1996) studied high school students' writing self-efficacy performance and found that their writing performance was directly affected by their self-efficacy beliefs and as theorized by the Social Cognitive Theory, it assumed a mediational role. A study conducted by Pajares and Valiante (1997) found similar relationships with fifth grade students' writing self-efficacy, as did Pajares (1996) when he examined the relationships between self-efficacy judgments and math problem solving of middle school students in an algebra class.

Research on science self-efficacy conducted by Britner and Pajares (2006) on middle school students, found that science self-efficacy beliefs predicted science achievement. This study in particular showed that mastery experiences, as emphasized in Social Cognitive Theory, predicted science self-efficacy. The study highlighted the idea that students were able to carry positive feelings of competence from past assignments into current science project assignments. Furthermore, students who had previous positive experiences with science assignments earned a higher grade on the assignments and were less likely to turn in the assignment late or incomplete. These findings support Bandura's (1986) contention that efficacy beliefs play a mediational role and affect the

skills, and other self-beliefs on subsequent performances by influencing effort, persistence, and perseverance (Schunk, 1981; Lent et al., 1984; Schunk & Hanson, 1989).

Based on available research mentioned above, it can be observed that there are strong relationships between self-efficacy and academic performance. The majority of this research has focused the various specific forms of academic self-efficacy, such as mathematics self-efficacy, writing self-efficacy, science self-efficacy and others (Pajares, 1996; 2002). Also, the research has been limited to populations of K-12 students or undergraduate college students. One area that has received relatively limited study is the dissertation process. The purpose of this study is to determine whether the constructs of self-efficacy extend to the dissertation task and completion in a manner similar to the other academic domains.

Dissertation Self-Efficacy

Completion of all doctoral coursework and passing of the doctoral comprehensive exams marks the transition to doctoral candidacy. As a doctoral candidate, the student's final task is to complete the dissertation which involves mostly independent work. It has been assumed that doctoral students must be prepared to transition to this type of independent work once they have completed the course work and successfully passed the comprehensive exams (Cash & Sanches, 1992). However, it seems that a relatively high percentage of dropouts occur at candidacy stage. According to Sternberg (1981), the doctoral dropouts at this stage are between one fourth and one-half of all doctoral students.

Several studies have indicated that having difficulties with dissertations is one of the primary reasons students leave doctoral study or fail to complete their programs

(Garcia et al., 1988). Findings from a study conducted by Lovitts (2008) indicate that many doctoral students feel unprepared to make the transition from course-taker to independent scholar/researcher because success in the classroom does not always translate to success during the dissertation process. Some students, such as those with a high degree of analytic intelligence but with low levels of practical and creative intelligence, may find the transition very difficult for having to go from a high sense of self-efficacy during the coursework to a low sense of self-efficacy during the writing and research stage of the dissertation process (Faghihi, 1999).

According to Varney (2003) a strong sense of self-efficacy is required in order to accomplish the specific demands of writing and defending a dissertation. He defined dissertation self-efficacy as the belief in one's capability to accomplish specific tasks related to the academic demands of writing the dissertation. Some of the various tasks involved in the dissertation process are: topic selection, writing the literature review, collecting dissertation data, writing the methodology, interpreting the results after the statistical analyses, and writing the results.

According to Bandura's self-efficacy theory (1977) individuals are more likely to engage in a given behavior or task that they believe they have the ability to complete successfully. Efficacy expectations evolve from different sources, such as previous experiences with the task, modeling or observing other people's actions, or verbal information and emotional reactions such as fear and anxiety. The degree of effort an individual exerts in engaging in a particular task will depend on the degree or magnitude of self-efficacy. In other words, the degree of effort a doctoral student exerts in the

dissertation process will depend on his efficacy expectations and the degree of his dissertation self-efficacy.

Bandura (1977) distinguished between efficacy expectations – beliefs of whether an individual can effectively perform the behaviors necessary to produce the outcome – and outcome expectations – beliefs that certain behaviors will lead to certain outcomes. The difference between these two kinds of expectancy beliefs is that some individuals may believe that a certain behavior will produce a certain outcome (e.g. outcome expectation such as doctoral degree completion), but they may not believe they can perform that behavior (e.g. efficacy expectation such as dissertation writing and research). Indeed, Bandura proposed that the major determinant of goal setting, activity choice, willingness to expend effort, and persistence is an individual's efficacy expectations (Eccles & Wigfield, 2002).

Researchers such as Bridgmon (2007), Varney (2003) and Zimmerman (2000) observed that the dissertation efficacy construct has been studied only in general academic settings and not in the context of doctoral programs, although self-efficacy was considered to play an important role in whether students completed dissertations or remained ABD. Very few studies have examined self-efficacy of doctoral candidates during the dissertation experience, or dissertation self –efficacy. Faghihi (1999), Colvin, (2012), Harsch, (2008), and Varney (2003, 2010) are the only researchers to date who have explored in their studies the construct of self-efficacy during the dissertation experience. All four researchers found that dissertation self-efficacy significantly and positively related to dissertation progress, and suggested that the more doctoral students

believed in their ability to complete their dissertations, the more progress they made (Varney 2003, 2010).

Since self-efficacy is found to be essential during the dissertation process, Varney (2003) created the Dissertation Self-Efficacy Scale (DSES), whose items were developed to measure directly the self-efficacy level required for dissertation completion. This instrument has been used by Varney (2003, 2010), Colvin (2012) and Harsch (2008) in their research and all of them found dissertation self-efficacy to be positively and significantly related to dissertation progress. Furthermore, Varney (2003) suggested that dissertation self-efficacy appears to have the mediating effect originally predicted by the self-efficacy theory, and he pointed out that the greater the dissertation self-efficacy of doctoral students, the more progress they showed in writing their dissertation. Additionally, he suggested that dissertation self-efficacy may positively influence doctoral students' dissertation progress regardless of how they feel about their doctoral program components (being in a cohort, being mentored, dissertation preparation experiences).

Harsch (2008) examined the differences in self-efficacy between doctoral student groups, such as completers and non-completers, and found that completers scored significantly higher than non-completers on the construct of dissertation self-efficacy. However, Harsch (2008) pointed out that based on her study it was difficult to establish a link between dissertation self-efficacy and dissertation completion. The reason for this is due to the fact that dissertation completers provided their feedback after they had completed the dissertation and their perceptions about dissertation self-efficacy may have been influenced by their dissertation completion success as well as by "other factors

besides self-efficacy, such as an individual's high level of self-confidence or high level of resiliency" (Bandura, 1984, Harsch, 2008, p.87).

Similar to the other two researchers, Colvin (2012) found dissertation self-efficacy to be significantly and positively related to dissertation progress. Additionally, based on her research results, she found academic help-seeking attitudes and achievement goal orientations to be directly related to dissertation self-efficacy but not with dissertation progress. She also found that academic discipline and being a part-time or full time (full-time status was only close to significance, $\alpha=.05$, in predicting dissertation progress) doctoral student, or a research assistant did was not a significant predictor for dissertation progress.

It is already known that the dissertation process requires good research and writing skills in order to be successful in accomplishing the dissertation specific tasks. Based on Bandura's self-efficacy theory, individuals will engage in performing specific tasks only if they believe they have the ability complete it successfully. For this reason, the concepts of research self-efficacy and writing self-efficacy will be examined next in the context of dissertation process.

Research Self-Efficacy

Research has been defined in many different ways, but in the broadest sense, research refers to "any gathering of data, information and facts for the advancement of knowledge" (Shuttleworth, 2008). The concept of self-efficacy has been receiving growing attention in educational research over the past years, since graduate students are required to conduct research as part of the thesis or dissertation submission for fulfillment of a degree. In general, self-efficacy helps individuals to decide how much effort they

will spend on a task, how long they will persist on it when they encounter difficulties, and how resilient they will be in detrimental situations (Bandura, 1977; van Dinther, Dochy, & Segers 2011). According to self-efficacy theory, when individuals believe they have the ability to successfully complete a given behavior/task, then they will be more likely to engage in that behavior (Bandura, 1977).

The term self-efficacy has extended to the research domain as well, and a growing body of literature has explored and documented the importance of research self-efficacy in the research training of students (Gelso & Lent, 2000). Research findings have pointed out that research self-efficacy plays a central role in task completion and in individuals' beginning and completing research projects (Gelso & Lent, 2000).

Research self-efficacy has been defined by Varney (2003) as "one's confidence in being able to successfully complete various aspects of the research process" (Varney, 2003, p. 10). Research self-efficacy has been found to play a central role in task completion and in individuals' beginning and completing research projects (Gelso & Lent, 2000). Also, it has been suggested that research self-efficacy is related to research productivity among students (Kahn, 2001; Bard, Bieschke, Herbert, & Eberz, 2000) and very helpful in predicting students' interest in conducting research (Bishop & Bieschke, 1998; Kahn & Scott, 1997). Research has also shown that low research self-efficacy can affect students' research training and their willingness to conduct research (Love, Bahner, Jones, & Nilson, 2007). Furthermore, researchers have found that high research self-efficacy is an important factor in students' academic journey and their successful conducting of research, as well as their interest in pursuing research beyond graduate study (Forester, Kahn, & Hesson-McInnis, 2004). An accurate assessment of research

self-efficacy may also be helpful for faculty and dissertation advisors in identifying a student's self-identified strengths and weaknesses regarding graduate/dissertation research and guidance, and mentoring him/her through the dissertation research process (Kahn, 2001) .

Writing Self-Efficacy

Writing is a very complex task, very important in the academic setting and crucial in accomplishing the task of dissertation writing. Thus, doctoral students may feel either empowered or hindered by their writing skills in the process of writing their dissertations. In the available literature, we can find several research studies related to writing self-efficacy beliefs. Most research findings consistently showed over time that writing self-efficacy beliefs and writing performances are related (Pajares, 2003). Also, researchers have found that writing anxiety can affect writing self-efficacy beliefs. Researcher suggested that students with high levels of writing self-efficacy were less likely to experience writing anxiety, and more likely to finish their projects and turn them in on time (Pajares & Johnson, 1996).

In general, writing apprehension (as a form of writing anxiety) generally correlated with writing performance. However, this particular study conducted by Pajares and Valiante (1999) showed that the influence of apprehension was nullified when self-efficacy beliefs were controlled. These research results support Bandura's (1986) findings that anxiety was mediated by self-efficacy beliefs. In other words, self-efficacy beliefs have an important role in decreasing writing apprehension/anxiety and improving writing performance. In this regard, Pajares and Valiante (1999) suggested that writing

ability could be improved and anxiety decreased by using interventions designed to increase writing self-efficacy.

The majority of the research findings in this area have consistently shown that writing self-efficacy beliefs are correlated with writing performances (Pajares, Britner, & Valiante, 2000). Most writing self-efficacy studies were conducted on school age children (Pajares, Miller, & Johnson, 1999), and a few studies involved undergraduate level students (Hetthong & Teo, 2013). However, no research to date has studied the relation between writing self-efficacy and doctoral students' dissertation progress.

Because writing is such an important task in dissertation completion, doctoral students could benefit tremendously from the writing self-efficacy literature and studies as they write their dissertations.

Locus of Control

The concept of locus of control was developed by psychologist Julian Rotter (1966) as part of the Social Learning Theory. The main driving force of this theory is that personality represents an interaction of the individual with his or her environment, since, according to Rotter, behavior is influenced by both the individual and the environment. Rotter (1966) defined locus of control as the extent to which individuals perceive they have control over the expectancies of reinforcement and are responsible for the outcomes, success and failures in their lives. He hypothesized that the development of a person's locus of control depends on his/her reinforcement history. In other words, people tend to connect their actions with the reinforcements (positive & negative) they have received over time.

Also, Rotter (1966) proposed that one of the most important components of the locus of control construct is the belief that individuals can influence their behavior or situations. Certain expectations are created based on the reinforcements received. Research has shown that how people respond to situations or decide to adopt one behavior or another greatly depends upon expectations (Bergvik, Sorlie, & Wynn, 2012; Brown, Garavalis, Fritts, & Olson, 2006; Marecek & Frasc, 1977; Ng, Sorensen, & Eby, 2006).

Based on Rotter's (1966, 1975) research, the construct of locus of control can be measured on a continuum from high internal to high external. Most people tend to fall somewhere between these extremes. Rotter (1966) also suggested that individuals with a strong internal locus of control are inclined to take more responsibility for the outcomes in their life, and attribute their success or failure to their own efforts and decisions. When these individuals reach a goal, they feel that they are responsible, and likewise when they fail to reach a goal, they also accept responsibility. In contrast, individuals with an external locus of control orientation tend to believe that their own efforts have little impact on the amount of reinforcement they receive and that outcomes such as success and failures in their life are controlled by luck, circumstances, fate, or powerful others. They believe that what happens is beyond their control. They feel that no matter what they do, their successes and failures in life are predetermined (Rotter, 1966).

Rotter (1954) believed that individuals with an internal locus of control orientation experience *typical* shifts in expectations following success or failure, which means that people who succeed have increased expectancies following success and

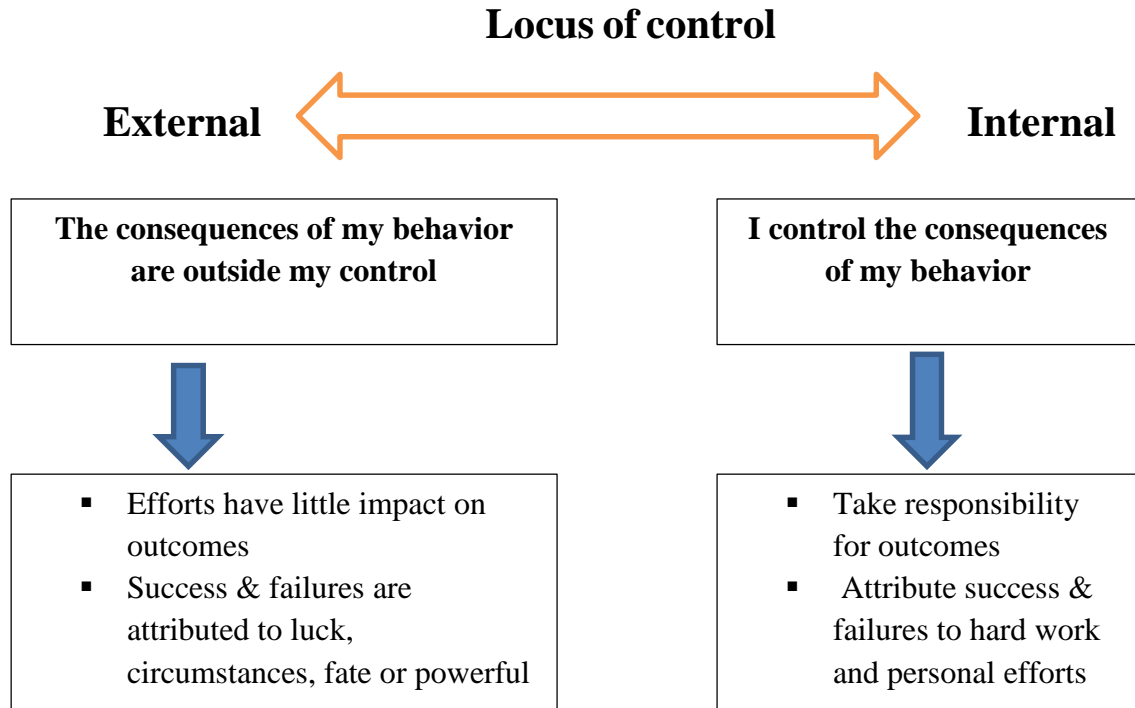


Figure 4. A depiction of Rotter's (1966) locus of control theory. Adapted from www.boundless.com

decreased expectancies following failure. In contrast, he suggested that individuals with an external locus of control show more *atypical* expectancy shifts, and they tend to exhibit decreased expectancies of success following success and increased expectations of success following failure.

Locus of control has generated a lot of research across various fields including educational psychology, health psychology and clinical psychology in order to observe individuals and predict behaviors. Researchers have been studying the construct of locus of control in a variety of subject areas in order to find out its potential influence. Locus of control has been found to have an influence in a variety of areas including academic achievement (Findley & Cooper, 1983), motivation (Anderson, Hattie, & Hamilton, 2005), self-efficacy (Harsch, 2008), stress (Schmitz, Neumann, & Oppermann, 2000),

and dissertation completion (Koiner, 1992; McDermott, 2002; Wagner, 1986; Wentzel, 1987). In the following section I will present an overview of some of the studies in the area.

Locus of Control and Academic Achievement

Phares (1973) reviewed studies linking locus of control and achievement in children and found empirical evidence for this hypothesis. Most of these studies used the Intellectual Achievement Responsibility (IAR) Scale (Crandall, Katkovsky, & Crandall, 1965) as a measure for locus of control and grades or standardized test scores as indexes for academic achievement. Based on his review, he concluded that children with internal locus of control showed superior academic performance.

Similarly, Bar-Tal and Bar-Zohar (1977) reviewed literature that included studies of both children and adults. In their review they observed a trend which indicated a relationship between the perception of locus of control and academic achievement. They concluded that “this trend suggests that the more internal the individual’s orientation, the higher the individual’s achievement” (p.132). On the other hand, Stipek and Weisz (1981) after reviewing about 35 published studies concluded that any definite assertions regarding this relationship were difficult to make (cited in Findler & Cooper, 1983). Some studies reviewed by these authors suggested that locus of control questionnaires predicted grades stronger than standardized achievement test scores. However, other studies reported non-significant relationships between locus of control and academic achievement.

A more rigorous review has been conducted by Findley & Cooper (1983) on approximately 100 studies investigating the relationship between locus of control and

academic achievement. Their review included studies of all ages and used explicit quantitative techniques for drawing conclusion and included all of the mediators suggested by the other reviewers. The authors of this review concluded that a) locus of control and academic achievement are significantly positively related, and b) the magnitude of this relation is small to medium. Based on the characteristics of the participants in the reviewed studies and the nature of the locus of control and academic achievement measures used as mediators for the investigation, it resulted that the relation tended to be stronger for adolescents than for adults and children, and the relation was more substantial among males than among females.

More recent studies conducted on university students show similar results. Park and Kim (1998) have conducted two studies to investigate the relationship between behavior patterns, locus of control and academic achievement. Their first study analyzed behavior patterns and locus of control in both university honor students and low achievers or students on probation. Findings from this study revealed that honor students showed higher internal locus of control and lower external locus of control when compared with students on academic probation, and they attributed their success to effort and the influence of other people. Their second study focused on interrelationship between locus of control and academic achievement in three groups: Korean, Chinese and Korean-Chinese students. Findings showed a positive relationship between internalized locus of control and academic achievement in favor of the Korean and Chinese students with higher academic grades. Other researchers, such as Majzub, Bataineh, Ishak, and Rahman (2009) found similar results with positive relationships

between locus of control and academic achievement in Jordanian and respectively Turkish university students.

To understand if locus of control changes over time from pre-test to post-test scores depending on the quality of feedback received on task performance or if locus of control is a stable trait, Wolfe (2011) conducted a study on psychology students at the University of Minnesota Duluth. Results of the study suggested that there were no significant differences between pre-test internal and external locus of control and that locus of control orientation did not change based on the quality of post-test feedback. These results might be conflicting with Schmitz and Skinner's (1993) research suggesting that perceived success and failure does influence locus of control orientation.

Very few studies investigating locus of control and academic achievement have been conducted on graduate students. Nejati et al. (2012) investigated the relationship between locus of control and academic performance of the master's students of the University of Yazd. Their findings indicated that locus of control is significantly related to the academic performance of the graduate students from their institution.

More recent studies conducted on college students show similar results. In a study conducted by Park & Kim (1998) on both honor students (GPA - grade point average of 4.0 or higher and the top 5% of the student body) and students under probation (GPA lower than 1.7) from a university near Seoul showed that honor students were more likely to attribute their academic success to effort and to significant others while students on probation were more likely to attribute their failure to ability and significant others.

Locus of Control and Dissertation Completion

The construct of locus of control refers to the extent to which individuals believe they are responsible for the outcomes in their lives, and is one of the three causal dimensions in the attribution theory, along with stability and controllability. People have a tendency to search for the cause of an event or behavior and attribute different reasons to outcomes. Similarly, doctoral students might search for reasons as to why they succeeded or failed at completing their dissertation, and they might attribute these causes to personal reasons or environmental circumstances (Kluever & Green, 1998).

Dissertation represents the transition from course-taker to independent scholar/researcher and many doctoral students feel unprepared for this type of independent work that must meet specific guidelines (Lovitts, 2008). According to Kluever and Green (1998), completion of the doctoral dissertation is a specific indicator of independence and responsible behavior, with some students having great difficulty in demonstrating and assuming this independence and responsibility. Some doctoral students are more internally controlled and take responsibility for each task involved in the process of dissertation completion, while others are more externally motivated and assume that the university (advisor/committee) is responsible to provide the initiative for completing each task and they blame the university or others for failure to complete specified tasks.

Kluever and Green (1998) suggest that in the dissertation process there are two main parties involved: the student and the university (advisor and committee), and very often the tasks involved in dissertation completion require joint responsibilities with each party playing some part in carrying out the different tasks. These authors suggest that an

agreement is necessary between the two parties in order to know who is responsible for each task involved in dissertation completion.

Kluever and Green (1998) developed the Dissertation Responsibility Scale (DRS) in order to assess the responsibility dimension subsumed under locus of control and associated with dissertation completion. The DRS was administered to doctoral candidates from a private college of education in a western state, and items were designed to investigate the perceptions of doctoral candidates concerning who (themselves or the university) was responsible for 16 different tasks associated with dissertation and degree completion. Subjects of the study had to respond to each item of the scale twice: the first response to indicate the student's impression of "how it is now" and the second response to indicated "how is should be." Additionally, two other scales were administered to subjects. One was a 45-item dissertation barriers scale designed by the same authors with the purpose of assessing students' perceptions of factors that facilitated or seemed to be barriers to dissertation completion. The second one was the 43-item Procrastination Inventory comprising 11 subscales and designed by Muszynski and Akamatsu (1991). Significant differences were found in perceptions of graduates and doctoral students for individual scale items, and also in subscale scores. Overall, student ratings suggested more university responsibility for dissertation tasks as opposed to student responsibility.

Furthermore, other researchers have also investigated the relationship between locus of control and dissertation completion. Wentzel (1987) and McDermott (2002) have found significant correlations between measures of internal locus of control and dissertation completion, while Smith (1985) and Wagner's (1986) research found non-

significant correlations between these variables. These discrepant results may be due to the fact that Wentzel (1987) used a different locus of control measure than Wagner (1986), and she focused on education doctoral students rather than psychology students or university wide random students studied by Wagner (1986). On the other hand, Koiner (1992) found no correlation between doctoral students' locus of control and their progression through the doctoral milestones. However, he suggested that there are some indications that the balanced locus of control (BLOC) oriented student may be even more successful in completing a doctoral degree than the distinct internal (ILOC) oriented student. He argued that this is based upon "the identified role of the ILOC orientation through the passing of the preliminary exam milestone and the change to or need for a powerful others locus of control (PLOC) orientation to finish the latter milestones dealing with the student's dissertation and the oral defense of it." He concluded that a "balance" between ILOC and PLOC may prove more advantageous to students who pursue doctoral degrees.

Perceived Stress

General Perceived Stress

Stress is part of everyday living and affects people of all ages and all walks of life. A poll from the American Psychological Association (APA) from 2014 revealed that 49% of Americans reported significant stress in their lives. This poll indicates that the most common stressors include money (64%), work (60%), the economy (49%), family responsibilities (47%) and personal health concerns (46%). Also, the most commonly reported symptoms of stress included feeling irritable/angry (37%), being nervous/anxious (35%), having a lack of interest/motivation (34%), feeling fatigued

(32%), feeling overwhelmed (32%) and being depressed/sad (32%). Many areas of life are affected by stress including sleep (42%), eating habits (43%), and relationships (41%). On average women report a higher level of stress than men (52% vs. 45%), and stress levels of Millennials (55%) and Gen Xers (54%) is above average stress level (49%) of other generations. (APA, 2015)

The term stress, meaning hardship or adversity, can be dated back to the 14th century (Lumsden, 1981). However, it hasn't achieved technical importance until the 17th century in the work of Robert Hooke, who was a prominent physicist-biologist (Hinkle, 1973). In physics, the main usage of stress referred to the force that produces strain on a physical body. Later, these usages have changed and the term has been adopted in other disciplines, such as physiology, sociology and psychology. Cannon (1939) and later Selye (1973) used the term in physiology to show that stress impacted health and it was a response to the environment. In the 1960's Lazarus and his colleagues started to develop the concept of psychological stress, but it did not get fully under way until the early 1970's (Lazarus, annual reviews).

Lazarus (1966) defined stress as a particular "relationship between the person and environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing." Thus, we become stressed when demands (pressure) exceeds our resources (our ability to cope and mediate stress). According to Lazarus and Folkman (1984), a person's response towards stress depends on whether an event is appraised or interpreted as a challenge or a threat. While challenging stimulus can lead to positive outcomes such as motivation and improved task performance, distress can cause problems and have serious effects on people such as anxiety,

depression, social dysfunction and even suicidal intention. In response to stressful life events, individuals tend to use a variety of coping mechanisms and strategies.

Lazarus (1966) believed that stress did not actually exist in the event but rather as a result of a transaction between a person and his or her environment. He suggested that stress is a two way process – the environment produces stressors and the individual finds ways to deal with these – and it encompasses a set of factors: cognitive, affective, and coping factors. In order to explain this interrelationship of factors Lazarus & Folkman (Lazarus, 1966; Lazarus & Folkman, 1984) developed a transactional theory of stress and coping (TTSC). This model is very important in the field of cognitive psychology because it emphasizes the role of appraisal or self-evaluation on how a person reacts, feels and behaves when faced with stress.

Lazarus and Folkman (1984) emphasized that cognitive appraisal is the primary mediator of person-environment transactions and they identified three types of appraisal: primary, secondary and reappraisal. *Primary appraisal* is considered to be an evaluation of an individual's perception of a situation, based on self-assessment of the possible effects of demands and resources. In case the individual evaluates that demands outweigh the available resources, then he/she may determine that the situation represents either a threat (a potential for harm or loss), a harm (actual harm has already occurred), or a challenge (the situation may have potential for some gain or benefit).

Secondary appraisal is the process used by an individual to evaluate if anything can be done to overcome or prevent harm or to improve the prospects of benefit. Also, at this stage, an individual evaluates and determines the available coping options to deal with a situation or threat and their effectiveness. Very often, primary and secondary

appraisals occur simultaneously and interact with one another in order to determine whether the person-environment transaction is primarily threatening (with the possibility of harm or loss) or challenging (containing the possibility of mastery or benefit) (Lazarus & Folkman, 1984). As the situation evolves, *reappraisal* is used to continually evaluate, change and relabel earlier appraisals. During reappraisal, what previously might have been perceived as a threat may now be viewed as a challenge or irrelevant. There are several factors that may influence appraisals of threat, such as a) situational factors, including their number and complexity; b) an individual's values, goals, self-esteem, social support, coping skills; proximity, intensity, and duration of threat; and c) the controllability of the threat.

Two other important concepts are included into the transactional model for stress: coping and stress emotions. Coping is defined as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person.” (Lazarus & Folkman, 1984, p. 141). According to Lazarus (1984) coping has two major functions: regulating stressful emotions (emotion-focused coping) and altering a person's relation with the environment by causing distress (problem-focused coping). Problem-focused coping strategies are similar to problem-solving skills, and they include efforts to define the problem, generate alternative solutions, weigh the costs and benefits of actions, take action to change what is changeable, and learn new skills if necessary. Problem-focused strategies can be directed outward to alter aspects of the environment, as well as inward to alter aspects of self. On the other hand, emotion-focused coping strategies are usually directed toward decreasing emotional distress. These strategies include such efforts as distancing,

avoiding, blaming, minimizing, venting emotions, wishful thinking, selective attention, exercising, meditating and seeking social support. According to Lazarus and Folkman (1984) emotion-focused coping is the more common form of coping that is used when events are not changeable.

Two previous studies conducted by Lazarus and Folkman (1984) provided strong empirical support for the idea that copying usually includes both functions. One of the studies (Lazarus & Folkman, 1980) found that both forms of coping were represented in over 98% of the stressful encounters reported by middle-aged men and women. The other study (Lazarus & Folkman, 1984) indicated that both forms of coping were represented in about 96% of the self-reports provided by college students on how they coped with a stressful examination.

Emotion, specifically stress emotions, is another construct in Lazarus's (1966, 1991) transactional model. These stress emotions include, but are not limited to, anxiety, anger, sadness, guilt and fear, and affect thoughts, even though thoughts precede emotions (Lazarus, 1966, 1991; Lazarus & Folkman, 1984).

While stress is prevalent in many aspects of daily life, this study focuses on stress associated with academic demands and task completion such as dissertation completion in doctoral students. The pursuit of higher education can cause a great deal of stress, and this appears to be particularly true among graduate students pursuing a doctoral degree, especially at the dissertation stage (Blum, 2010). Transitioning from course-taker to independent scholar/researcher during the dissertation stage constitutes a major challenge and can be very stressful for many doctoral students (Lovitts, 2008). Thus, the next section will present available research on the relationship between perceived stress and

dissertation completion. The focus of the current study was to examine only negative effects of stress factors on dissertation completion. Positive effects of stress will not be assessed.

Perceived Stress and Dissertation Completion

Stress in academic institutions can have both positive and negative consequences if not well managed (Stevenson & Harper, 2006). Much research has been conducted over the years on stress in university students and its effect on academic outcomes. Academic stress has been defined by Bisht (1989) as “a demand related to academics that tax or exceed the available resources (internal or external) as cognitively appraised by the student involved.”

Researchers have found that learning and memory can be affected by stress, and academic stress in higher education is negatively affecting students due to feeling overwhelmed with managing all of their responsibilities (Vlisides, Eddy, & Mozie, 1994). Although an optimal level of stress can enhance learning ability (Kaplan & Sadock, 2000), too much stress can be detrimental and cause physical and mental health problems (Niemi & Vainiomaki, 1999; Laio, Lu, & Yi, 2007) and may affect students' academic achievement (Choi, Abbott, Arthur, & Hill, 2007; Elliot, Shell, Henry, & Maeir, 2005; Hofer, 2007; Trautwein, Ludtke, Schnyder, & Niggli 2006).

Most studies on stress in university students indicated that stress levels are due to academic commitments, financial pressures, lack of time management skills, test anxiety, student teacher interaction, absence of social life including close friends and family, teacher expectations and thinking about job prospects after university (Gadzella, Mastern, & Stacks, 1998; Lim, Heckman, Montalto, & Letkiewicz, , 2014; Misra & McKean,

2000; Misra & Castillo, 2004; Wilks, 2008). When stress is perceived negatively it can have an adverse effect on students (Amirkhan, 1998) and it can affect students' health as well as their academic performance (Stevenson & Harper, 2006). Furthermore, if the pressure is extended over long periods of time and perceived as unmanageable, these experiences have been found to elicit helplessness, depression and stress, at times placing some of the students in fear of academic failure and in danger of jeopardizing their academic futures (Marcos & Tillema, 2006).

A considerable amount of studies conducted to investigate the effect of stress factors on academic outcomes have focused on the GPA of university students and staying enrolled (Lent, Brown, & Larkin, 1984; Zajacova et al., 2005). Generally, stress has been found to be inversely related to academic performance among traditional undergraduates and have a negative influence on GPA (Felsten & Wilcox, 1992; Pritchard & Wilson, 2003; Russell & Petrie, 1992). Most studies show that stress may affect the academic achievement of students (Choi et al., 2007; Marcos & Tillema, 2006; Robbins, Allen, Casillas, Peterson, & Lee, 2006).

On the other hand, some studies have failed to find an association between stress and academic outcomes. Petrie and Stoeber (1997) concluded in their study that stress related to life events was not a significant predictor of academic performance for college student-athletes, and Sandler (2000) found that perceived stress did not predict adult college students' intent to stay enrolled in school. Similarly, Felsten and Wilcox, (1992) found an inverse relationship between self-reported stress level and academic performance.

There are a limited number of studies on the effects of stress on graduate students, especially doctoral students, and those that do exist are almost exclusively on the effects of stress in medical education (Sharma, Patel, Pacheri, & Shri., 2013; Vitaliano et al., 1987). Most of the studies on graduate students indicated that students have to face many stressors and challenges, such as high work load (Stewart, 1995), social isolation (Ali & Kohun, 2007; Lovitts, 2001), low social support (Stewart, 1995), and moderate to high stress (Bedewy and Gabriel, 2015; Lazarus & Folkman, 1984).

Doctoral students in particular are faced with such stressors as, relative poverty, anxiety, fear of failure, examinations, academic demands, sleeplessness and time constraints (Bowman & Bowman, 1990; Esping, 2010). Doctoral students experience high levels of anxiety during the course of their studies, and according to McGrath (2002) anxiety is often considered to be the main cause why students fail to complete their dissertations. However, doctoral students with higher levels of self-efficacy are more confident in their ability to perform during the dissertation process and less anxious than students who are less confident (Griffin, n.d).

A number of studies examined the relationship between critical periods of stress and doctoral degree completion in programs of education (Mcdermott, 2002; Wood, 1978). In general, critical periods of stress were positively related to non-completion, with non-completers reporting more critical periods of stress that led to withdrawal from doctoral study when compared to those who completed doctoral study. These are the sources of critical stress which differentiated completers from non-completers: academic pressures (Wood, 1978), work pressures (Wood, 1978) and required examinations (Tierce, 1984). Additionally, Wood (1978) observed that non-completers reported more

critical periods due to general discouragement, family problems and financial issues compared to completers.

Lovitts (1996) indicated that doctoral students' decisions to leave the program were made for a "constellation of reasons" rather than a single reason (p. 211). She found in her study that students indicated more often personal reasons for non-completion (70%) rather than academic (42%) or financial (29%) concerns. Some of the personal reasons included in her study were too much pressure, burnout, too much work, lack of appropriate motivation, and family factors. Family pressure was observed to be significantly higher for female non-completers than for their counterparts.

Student Satisfaction

Student satisfaction is important because it has been indicated to influence completion of doctoral programs (Hesli et al, 2003). The concept of student satisfaction refers to student perceptions of learning experiences associate with education (Elliot, Shell, Henry, & Maeir, 2005). This study examined students' overall satisfaction with their dissertation process in relation to program completion.

Previous studies indicate that students' satisfaction with their academic programs contributes favorably to doctoral degree completion (Lovitts, 1996). The opposite is true also: when students are dissatisfied with their doctoral programs, they are more likely to become disappointed, consider leaving graduate school and abandon doctoral study (Hesli, Fink, & Duffy, 2003; Lovitts, 1996). According to the meta-synthesis conducted by Bair & Haworth (1999) on factors that contributed to students' satisfaction with their doctoral programs, these are some of the items consistently mentioned in previous studies: quality of the program, communication of students with administration and

faculty, fairness in requirements, consistency in the evaluation of students, treatment of students as professionals and whether students received adequate guidance (Bair & Haworth, 1999).

Doctoral students most likely to complete their programs were those who reported higher levels of satisfaction with their programs, courses and instruction (Ducette, 1990) those who considered the course work to be of high quality and value (Valentine, 1986); those who indicated higher levels of satisfaction and indicated that their expectations had been met (Cooke, Sims, & Peyrefitte, 1995); and those who were not only satisfied with the programs of study, but also had a quality relationship with their advisor and faculty (Lovitts, 2001, 2008; Muszynski, 1988). In fact, Bair & Haworth's (1999) meta-synthesis indicated that the most frequent finding that held true across quantitative, qualitative, and mixed-methodology studies was the critical role played by the student-advisor relationship in doctoral students' decision to complete their dissertations and doctoral programs. Students who had positive relationships with their advisors and other faculty members were significantly more likely to complete their doctoral degrees than those students for whom such positive relationships did not exist (Bair & Haworth, 1999; Lovitts, 2001, 2008; Muszynski, 1988).

Studies on attrition of doctoral students have found that some of the reasons for student's departure were due in part to the fact that they received inadequate or inaccurate advising, the advisor was unavailable to the students or showed lack of interest or active guidance to the students, or because of poor quality, negative or conflictual relationships between the student and advisor (Lovitts, 1996, 2001; Muszynski, 1988; Nerad & Cerney, 1991). Conversely, doctoral students who reported high levels of relatedness to

their advisor, who perceived their advisors as more supportive and more personally interested in them, and those who reported more regular meetings and fewer delays in obtaining feedback, were more motivated and productive than those who did not have such advisors (Lan & Williams, 2005), were more likely to be satisfied with their programs (Hesli et al., 2003; Lan & Williams, 2005; Mason, 2012) and more likely to complete their dissertations (Faghihi et al., 1999) and their doctoral programs (Lovitts, 2001; Muszynski, 1988). Some researchers went so far as to have identified the student-advisor relationship as the most important factor in doctoral attrition and persistence (Girves and Wemmerus, 1988; Presley, 1996).

Linking Student Satisfaction with Self-Efficacy, Locus of Control, and Perceived Stress

Self-efficacy refers to people's beliefs about their capabilities to accomplish different tasks, and it can influence individuals' behaviors either positively or negatively, based on their perception of their abilities regarding particular tasks. Self-efficacy influences the choices people are mostly likely to make, the effort they put forth, and how long they persist when facing challenging situations, obstacles and failure (Bandura, 1986). High self-efficacy beliefs are also related to the expansion of satisfying social relations which bring satisfaction to an individual's life (Bandura, 1997). Thus, satisfaction should be high in self-efficacious individuals.

A few studies conducted on self-efficacy beliefs and life satisfaction in general found significant positive relations between these two concepts (Coffman & Gilligan, 2002; Tong & Song, 2004). Also, studies on self-efficacy and job satisfaction revealed positive relations as well (Klassen & Chiu, 2010; Gkolia, Belias, Koustelios, 2014). However, very few studies on self-efficacy and satisfaction were conducted on college

students (Coffman & Gilligan, 2002; Tong & Song, 2004). According to my knowledge up to this point there is only one study conducted on doctoral students (Overall, Deane, & Peterson, 2011), which assessed how students' satisfaction with different types of doctoral supervision is associated with students' research self-efficacy in counseling psychology students. The results of this study indicate that a supervisory style which encouraged students to think and act autonomously was not associated with students' satisfaction, but was the strongest predictor of students' research self-efficacy. These findings suggest that a supervisory nurturing style and greater levels of personal support may increase student satisfaction, but may limit students' autonomy and their ability to become independent researchers. Additionally, these findings suggest that a combination of greater autonomy and academic and personal support from supervisors will positively affect students' research self-efficacy as well as their satisfaction.

Both self-efficacy and locus of control deal with outcomes. While self-efficacy beliefs influence what outcomes are expected by an individual, the concept of control refers to the overall expectation that outcomes can be controlled. While people with internal locus of control believe that they are in control of outcomes, people with external locus of control believe that the environment or others control the outcomes. On the other hand, highly efficacious individuals expect positive outcomes, and individuals with low efficacy often expect to fail even before they begin a task (Pajares, 2002).

Locus of control by itself has not been found to have significant correlations with academic achievement (Green, 1997). When associations were found between locus of control and academic achievement, these associations were found to be stronger in adolescents compared to adults and children (Findley and Cooper, 1983; Ogunmakin and

Akomolafe, 2013). When studied in combination with self-efficacy, some researchers (Nowicki et al., 2004; Tella, Tella & Adika, 2008) found a correlations between these concepts and academic achievement, while others found no significant relationship between locus of control and academic performance (Choi, 2013; Dinçyürek et al, 2012; Jeffereys, 1998; Raynolds & Weigand, 2010;).

Limited research has been conducted on the influence of locus of control, or locus of control and self-efficacy on student satisfaction. A study conducted by Choi (2013) examined the effects of self-efficacy and internal locus of control on academic performance of college students as well as the moderating role of class satisfaction. The results of the hierarchical regression analyses indicated that self-efficacy had a significant and positive impact on academic performance, but internal locus of control did not. The study also found that class satisfaction had a direct critical impact on the academic performance of college students, and had moderating effects on the relationships between self-efficacy and internal locus of control and academic performance.

The only study available to date on graduate students (Nejati et al., 2012) investigated the relationship between locus of control and academic performance and the role of life quality and life satisfaction on M.A students. The authors developed a conceptual model and analyzed the data by using structural equation modeling and AMOS software. The findings of this study indicated that academic performance is significantly influenced by locus of control. However, there was no relationship between locus of control and satisfaction.

Researchers have found that an optimal level of stress can enhance learning ability (Kaplan & Sadock, 2000), but too much stress can be detrimental and cause

physical and mental health problems (Laio, Lu, & Li, 2007) and may affect students' academic achievement (Choi et al., 2007; Elliot et al., 2005; Hofer, 2007).

Previous research found positive correlations between self-efficacy and academic performance, as well as persistence in college (Lent et al. 1984, 1986; Stuart, 2013; Zajacova, Lynch, & Espenshade, 2005), but negative correlations between perceived stress and academic achievement (Choi, Abbott, Arthur & Hill, 2007; Elliot, Shell, Henry & Maeir, 2005; Hofer, 2007). Limited studies have looked at the combined influence of self-efficacy with academic stress and student satisfaction even though self-efficacy is considered to have an essential role in individuals' capacity to persist during stressful and difficult situations (Hamill, 2003; Schwarzer & Renner, 2000).

Pinugu (2013) has investigated the association between self-efficacy, academic stress and academic satisfaction in college students. The findings of this study showed that there was a positive association between self-efficacy and academic satisfaction and negative associations with academic stress. While self-efficacy and academic stress influenced academic satisfaction independently, there was no combined influence on academic satisfaction. Regarding the positive association between self-efficacy and academic satisfaction, it can be inferred that when students have high levels of efficacy and are confident in their abilities in addressing specific tasks and situations, then they will have the ability to overcome these and they will feel satisfied with their academic experiences. Conversely, if students are not very confident in their ability to perform certain tasks, then they may perceive their overall education experience in a negative light. These findings are similar to another study conducted among Mexican American students and which found that self-efficacy lead to academic progress and positive

outcome expectations and this lead to academic satisfaction (Ojeda, Flores, & Navarro, 2010).

Regarding the negative association between self-efficacy and academic stress, this suggests that when students encounter high levels of stress this can decrease their self-efficacy. Also, when they feel capable of doing certain tasks then they will perceive problems and stressful tasks as non-threatening, but when students perceive tasks as draining and exhausting their belief in themselves to overcome problems can be endangered. This has been observed for both students and educators as well (Vaezi & Fallah, 2011).

According to Pinugu (2013), no significant interaction effects were observed for self-efficacy and academic stress in relation to academic satisfaction. This may suggest that when academic stress is present students may experience anxiety, tiredness, depression, and they may become dissatisfied in the educational experiences they encounter because their perception toward their academic environment and the experiences attached to it would most likely be negative. The author of this study suggests that the lack of combined effect for efficacy and stress on satisfaction may be attributed to other factors closely related to these factors such as coping strategies and social support.

Another study conducted by Civitci (2015) on college students in Turkey found that the students having high college and major belonging (or psychological adjustment) had low perceived stress and high satisfaction. This indicates that college belonging has a “buffer” role (Frazier, Tix, & Barron, 2004) which may decrease the negative effect of perceived stress on satisfaction.

Limited research is available on how self-efficacy and perceived stress influence student satisfaction. The researchers (Coffman and Gilligan, 2002) who investigated these relationships have found that students who reported higher levels of self-efficacy and lower levels of perceived stress also reported higher levels of life satisfaction. This suggests that high efficacious students can cope better with stress and are more likely to report high levels of satisfaction.

Very few studies have focus on self-efficacy and student satisfaction (DeWitz & Walsh, 2002; Torres & Solberg, 2001), but this seems a topic worthy of study since it can enhance the understanding of student satisfaction and optimal academic achievement. The satisfaction that students experience in their academic journeys may be traced to their level of perceived efficacy and the challenges they face, their belief in their own abilities, and the social and academic rewards they gain out of these experiences may lead to their respective academic success (Pinugu, 2013).

Linking Self-Efficacy with Locus of Control

The concept of control plays an important role in several psychological theories. It is central to Rotter's social learning theory, Bandura's self-efficacy theory, Weiner's attribution analysis of motivation and emotion, and Seligman's probability analysis of control (Wise, 1999). Self-efficacy and locus of control can be understood as independent or interrelated constructs. The essence of the interrelations between these two constructs is captured very well by Lefcourt (1992):

Although the authors of these various cognate constructs insist on the uniqueness of their contributions, and draw detailed definitions to disentangle theirs from the terminologies of others, it is evident that there is much overlap in the meanings that are dealt with under these diverse rubrics. (p. 412-413).

Research has indicated that there is a relationship between self-efficacy and locus of control in that higher self-efficacy is correlated with internal locus of control (Cicirelli, 1980; Downey & Moen, 1987; Levenson, 1981; Mirowsky & Ross, 1986; Pincus & Callaha, 1994; 1995). While self-efficacy is the belief that individuals can succeed in a specific area of their lives, locus of control indicates how much control individuals feel they have over the outcomes. Thus, people with high self-efficacy in an area are more likely to persist longer in performing a task and to believe that they can control the outcome of a situation (Strausser, Waldrop, Hamsley, & Jenkins, 1998).

The relationship between self-efficacy and locus of control has been studied in areas such as: self-management of health and emotional conditions (Dunn, Elsom, & Cross, 2007; Sonntag, 2010), goal setting and task performance (Bandura, 1977; Phillips & Gully, 1997; Wood & Bandura, 1989), academic achievement (Akomolafe, 2010; Choi, 2013; Harsh, 2008; Nowicki et al., 2004; Sagone & De Caroli, 2014; Tella, Tella, & Adika, 2008), and stress and coping behavior (Benight & Bandura, 2004; Roddenberry & Renk, 2010).

Based on the fact that external locus of control has been claimed to be related to passivity and learned helplessness (Rotter, 1992), and also the fact that perceived environmental controllability has been found to be related to greater self-efficacy (Phillips & Gully, 1997; Wood & Bandura, 1989), it is proposed that individuals with a more internal locus of control will have a higher self-efficacy than individuals with external locus of control (Phillips & Gully, 1997). Rotter (1966) asserted that locus of control influences people's individual level of performance, and studies have shown that self-efficacy has an effect on an individual's performance. Thus, it will be very unlikely

for an individual to set high performance goals if she doesn't believe that she is capable of performing well, even though she may have the ability to perform well on that particular task (Phillips & Gully, 1997). Based mainly on social cognitive theory, researchers have found that individuals with high self-efficacy set higher goals, are more likely to engage and persist in a given behavior or task that they believe they have the ability to complete successfully, tend to put a great amount of effort into the task, and have higher performance than individuals with low self-efficacy (Bandura, 1977, 1986, 1989, 1991; Bandura & Wood, 1989). Wood, Bandura, & Bailey (1990) also suggest that stronger self-efficacy has been found to lead to higher self-set goals.

The concepts of self-efficacy and locus of control have been recognized by researchers to be factors associated with academic achievement (Nowicki et al., 2004; Tella, Tella, & Adika, 2008). Most available studies indicate that both self-efficacy and locus of control are able to predict academic achievement (Nowicki et al, 2004; Tella, Tella & Adeniyi, 2011; Zimmerman, Bandura, and Martinez-Pons, 1992), while others indicated that they had no impact on academic performance (Reynolds & Weigand, 2010; Dinçyürek et al., 2012). Some studies suggest that higher achievers tend to be more internally controlled and have higher levels of self-efficacy than lower achievers (Findley & Cooper, 1983; Sagone & DeCaroli, 2014), while other studies indicate self-efficacy as a significant predictor of academic achievement but not locus of control (Choi, 2013).

Based on Bandura's (1995) theory of self-efficacy and Rotter's (1966) theory of locus of control, as well as previous studies on the effects of self-efficacy and locus of control on achievement and task performance, it can be inferred that doctoral students with higher self-efficacy and an internal locus of control would generally perceive

themselves as more able to perform and more responsible for their progress and performance on their dissertation completion, while students with lower self-efficacy and an external locus of control would most often blame or thank luck, fate, destiny, or other force beyond their control. McDermott (2002) & Wentzel (1987) found that students with internal locus of control were more likely to complete the doctoral degree than students with an external locus of control. Additional research is needed to study the combined influence of locus of control and self-efficacy on dissertation completion.

Linking Self-Efficacy with Perceived Stress

Self-efficacy is considered to have an essential role in individuals' capacity to persist during stressful and difficult situations, helping to regulate adaptive functioning, and playing an important role in coping and resilience following adverse events (Hamill, 2003; Schwarzer & Renner, 2000). According to Bandura's (1997, 2001) social learning theory, a sense of personal efficacy is the foundation of human agency. Self-efficacy beliefs regulate human functioning through cognitive, motivational, affective and decisional processes, and they determine how individuals will persevere in the face of adversity and stressful situation. During threatening situations, self-efficacy is believed to play a key role in determining individuals' reactions to stress, as well as their quality of coping in stressful situations (Bandura, 1997).

Most research in support for the role of self-efficacy in coping with different stressors comes from posttraumatic recovery studies across diverse traumatic experiences, such as natural disasters, loss of life, loss of employment, physical injuries, physical assault, terrorism, military traumatization, interpersonal traumatizations, spousal bereavement and posttraumatic stress (Benight & Bandura, 2004). These studies

emphasize the importance of self-beliefs in managing one's personal functioning and the environmental demands of the aftermath in traumatic events. In other words, self-beliefs are significant contributors to the quality of human functioning, and self-efficacy plays a critical role in stress reactions and quality of coping in threatening situations (Bandura, 1997). Also, locus of control plays an important role in coping with stressful situations and in posttraumatic recovery from victimization. People who believe they can exercise control over threats do not distress themselves, and they display lower physiological arousal and less performance impairment than individuals who believe they lack personal control (Benight & Bandura, 2004).

As already observed in Lazarus' transactional model of stress, personal beliefs such as self-efficacy are extremely important in evaluating demands from the environment. Individuals with high self-efficacy beliefs are more likely to evaluate demands as a challenge (Chemers, Hu, & Garcia, 2001; Lazarus & Folkman, 1984; Pintrich & De Groot, 1990). In other words, people appraise or perceive a given task as either stressful or threatening rather than a challenge, depending on how confident they feel about their competence to handle that particular situation. When a task is appraised as a challenge, an individual is more likely to select an effective coping strategy and to persist at handling and managing the task (Zajacova, Lynch & Espenshade, 2005).

Benight and Bandura (2004) suggest that "those with a high sense of coping efficacy adopt strategies and courses of action designed to change hazardous environments into more benign ones." In other words, individuals with a high sense of self-efficacy are able to overcome obstacles and focus on opportunities rather than threats or failures, and are motivated to produce desirable results even in the least

favorable situations. Thus, it can be inferred that self-efficacy affects the perception of external demands and mediates the relation between external stressors and psychological stress, and it plays an important role in coping and managing stress effectively (Bandura, 1995).

Jex et al. (2001) also supported Bandura's social cognitive theory, which claims that individuals with high self-efficacy are more confident in their abilities to respond to environmental demands and believe that they are in control of the outcomes. Other researchers have indicated that the effect of academic self-efficacy on stress was completely mediated by individuals' evaluations of demands as either a threat or challenge (Chemers, Hu, & Garcia, 2001). On the other hand, studies conducted on physiological arousal states indicate that stress and anxiety may affect self-efficacy judgments of students (Pajares, 1996; Solberg et al., 1998). Thus, there seems to be a negative relationship between self-efficacy and perceived stress. Several studies have consistently shown that self-efficacy and stress among college students have moderate to strong negative correlations (Solberg & Villarreal, 1997; Torres & Solberg, 2001).

Linking Locus of Control and Perceived Stress

Locus of control and stress are believed to be related concepts and some researchers indicate that beliefs about personal control are also implicated in stress and coping (Cohen, 1980; Folkman, 1984). Some studies have suggested that locus of control beliefs are associated with control appraisals and indicated that individuals with an internal locus of control are more likely to appraise a stressful situation as personally controllable and focus on problem-focused coping efforts in contrast with external locus of control individuals (Folkman, 1984; Parkes, 1984; Vitaliano et al., 1987).

Stress can be perceived differently by different people because it depends on how people respond to stress (Lazarus & Folkman, 1984). Several researchers have also found that individuals with internal locus of control are more likely to cope better with stress because they will stick to their goals as they encounter challenges and persevere until they complete a task, they experience less anxiety and they also tend to attain higher academic achievement (Joe, 1971; Lefcourt, 1976; Rotter, 1966).

On the other hand, Rotter (1966) reported that individuals with an external locus of control tend to perceive stress as a threat rather than a challenge, to concentrate on obstacles rather than opportunities and not take responsibility for their success or failure. Also, researchers indicated that externals have been found to exhibit lower self-confidence (Joe, 1971), higher levels of depression and anxiety (Joe, 1971; Molinari & Khanna, 1981; Phares, 1973), and tend to manifest increased distress and be positively correlated with general stress (Averill, 1973; Bernardi, 1997; Brosschot et al., 1998).

Bernardi (2011) conducted a study on newly hired junior auditors' control levels and perceptions about stress experienced in college and also in life in general, and found that the more internal locus of control the subjects had the more they perceived stress as being positive. Also, individuals who perceived stress as a positive factor had higher GPA's. Ruthing, Haynes, Stupnisky, & Perry (2009) have also found that greater perception of control predicted both higher GPA and lower levels of psychological distress. On the other hand, lower levels of control have been correlated with academic burnout in a study of Spanish undergraduates (Salanova, Schaufeli, Martinez, & Breso, 2010). Belief that a situation may be within an individual's control may contribute to

higher levels of confidence and self-efficacy, and lower levels of stress in doctoral students as well, which is the purpose of this study.

Anderson (1977) conducted a study on businessmen who were trying to restore their businesses after being damaged by flood, and found that externals were more stressed than internals and used more “emotion-directed” coping than did internals, and less problem-focused coping in dealing with the consequences of the flood. In a follow up study 2 1/2 years later, Anderson those who were less stressed at the time of the first assessment had been more successful in restoring their businesses than those who more stressed. These findings suggest that beliefs about control are reinforced by experience, and this is in agreement with what is assumed by the social learning theory (Bandura, 1977; Rotter, 1966, 1975).

The role of self-efficacy and control in stress and coping processes has been largely recognized in the cognitive theory of stress and coping (Folkman, 1984; Folkman, Schaefer, & Lazarus, 1979). Folkman (1984) considered locus of control and self-efficacy as appraisal variables that operate as cognitive mediators of stress and stress related adaptive behaviors, with control beliefs influencing self-appraisal under novel conditions.

Academic demands can be very stressful for students, especially for doctoral students, and how students will be able to cope with those demands and stress will impact academic performance and outcomes. Only one study to date has looked at the combined relationship between locus of control and perceived stress as predictors of doctoral degree completion. McDermott (2002) surveyed doctoral students in a leadership program in West Virginia and found a significant relationship between locus of control and critical

stress. The findings of this study suggested that students with an internal locus of control were more likely to complete the doctoral degree than students with an external locus of control, and also, that students who experienced periods of critical stress were less likely to complete doctoral degree requirements. The study pointed out that the more external one's locus of control the greater the likelihood that they experienced a period of critical stress. These findings are consistent with results from other studies conducted on students in general, but not doctoral students (Bernardi, 1997; Vitaliano et al., 1987). Additional research is needed in this area.

While social cognitive theory provides a coherent framework linking self-efficacy, locus of control, perceived stress, and student satisfaction, most research available explored only their independent roles in explaining academic outcomes in college students. No studies to date have examined their joint influence on academic success and more specifically dissertation completion. One of the main contributions of the present study is to examine the joint effect of self-efficacy, locus of control, perceived stress, and student satisfaction on dissertation completion. A model has been proposed for this study (see Figure 1). The model proposes that while locus of control has an effect on both self-efficacy and perceived stress, self-efficacy and perceived stress have a direct effect on dissertation, and self-efficacy has both, a direct and indirect effect on dissertation completion.

CHAPTER 3

METHODOLOGY

Introduction

The present study was designed to investigate the role of self-efficacy, locus of control, perceived stress and student satisfaction on dissertation completion among doctoral students in selected educational psychology programs across the United States. The dependent variable examined in the current study is dissertation completion. The independent variables examined in the current study are: self-efficacy, locus of control, perceived stress, student satisfaction with the dissertation process. The demographics included in the current study are: gender, marital status, employment status, geographic distance from university, financial support, social support, dissertation status, and time limit in completing the dissertation.

This chapter highlights the methodology used within the study. The research design, population, instrumentation, reliability and validity of the instrument, sampling and data collection procedures, and analysis procedures are discussed.

Research Questions

This study attempted to answer the following questions:

1. What are the levels of self-efficacy, locus of control, perceived stress and satisfaction with the dissertation process among doctoral students in Educational Psychology?

2. What is the relationship, if any, between scores of self-efficacy, locus of control, perceived stress, student satisfaction with the dissertation process and dissertation completion?

Research Design

The current study is a correlational study using an online survey research methodology. A convenience sampling has been used to examine the relationship between dissertation completion and self-efficacy, locus of control, perceived stress and satisfaction with the dissertation progress of doctoral candidates and recent graduates in the field of Educational Psychology from selected universities across the United States.

Surveys have been used to describe attitudes, beliefs, opinions and other types of information. Survey research uses a sample of subjects and administers a questionnaire to collect data. The online survey method is the most widely utilized method to gather data from a target audience and a faster way of collecting data from respondents when compared to other survey methods such as paper-and-pencil method and personal interviews. Besides being the fastest way of collecting data, the online survey also presents other advantages as well, such as: 1) *Low cost*. Studies show that online data collection can be significantly cheaper than using the traditional survey methods which often require thousands of dollars to achieve the optimal results; 2) *Automation*. When

using online surveys, responses are automatically stored in a survey database which decreases the possibility of data errors; 3) *Higher response rates*. Online surveys have the ability to collect data from a large number of respondents in a relatively short time. They also tend to be more convenient for respondents than traditional surveys because they can answer the questionnaire at their own pace and chosen time, and this increases the response rate; 4) *No interviewer*. Respondents may more willing to share personal information because they are not disclosing it directly to another person. Also, interviewers can influence responses in some cases; 5) *Flexibility of design*. Internet surveys allow more flexibility for complexity of surveys. Online questionnaires may include more than one type of response format and can be introduced to the respondents in a friendly manner, making it easier for respondents to answer questions without getting discouraged from the changes in the manner they need to respond.

Some of the disadvantages of online surveys are: 1) *Limited sampling and respondent availability*. Certain populations may not have internet access or be less likely to respond to online surveys; 2) *No interviewer*. Online surveys are not suitable for open-ended questions because there is no trained interviewer to clarify and explore the answers of the respondents, and this could possibility lead to less reliable data; 3) *Survey fraud*. This could probably be the heaviest disadvantage of online surveys, since there are people who may be motivated to participate in online research only for the sake of getting an incentive and not necessarily having a desire to contribute to the advancement of research.

Population and Sample

Participants for this study were recruited through a convenience sampling procedure from selected Educational Psychology doctoral programs across the United States. Students from the following emphases within the educational psychology field were included: general educational psychology, human development, developmental psychology, cognitive psychology, behavioral neuroscience, learning and behavior, school psychology, special education, research and evaluation, and psychometric methods. For this study, the population consisted of doctoral candidates or ABD's (non-completers) and recent graduates (completers) in educational psychology from 30 universities across the United States.

Forty-eight universities across the United States were randomly selected and only 30 of them agreed to participate in the research study. By drawing PhD candidates in educational psychology from different states across the country it was hoped to obtain a sample which would represent the target population of PhD educational psychology students nationwide, thus increasing the generalizability of the results.

Participants were contacted by program directors via email and asked via electronic mail if they would be willing to participate in this study and fill out the survey provided. Additional information regarding the process of contacting participants and collecting the data is provided in the sampling procedure section.

Instrumentation

In this section, the measurement instruments will be outlined and discussed. In order to obtain psychometric data for this study, three measurement instruments and a demographic questionnaire were utilized: 1) The Dissertation Appraisal Inventory (DAI;

Varney, 2003); 2) The Dissertation Responsibility Scale (DRS; Kluever & Green, 1998); 3) The Perceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983); 4) A demographic questionnaire.

Dissertation Self-Efficacy Scale

The Dissertation Self-Efficacy Scale (DSES; Varney, 2003; Appendix D) is a self-report measure designed to assess students' beliefs in their ability to complete a dissertation. It has been developed by James Varney (2003) and is the only instrument available that specifically measures dissertation self-efficacy or an individual's belief in his ability to perform dissertation related tasks for the purpose of dissertation completion. The DSES consists of 16 items targeting specific dissertation completion tasks and ask respondents to rate how confident they are in their ability to successfully accomplish those tasks. Examples of such tasks include, (a) selecting a suitable dissertation topic, (b) selecting appropriate statistical methodology, (c) collecting adequate dissertation data records or field notes, (c) writing the results section of the dissertation (Varney, 2003).

Responses are rated on a scale of 0 = "No confidence at all" to 100 = "Completely confident," but for the purposes of this study a scale of 0-10 was used. Scoring of this measure and calculating the dissertation self-efficacy is performed by adding the responses of all 16 items and then dividing by 16 to obtain a mean score. Scores from 0 to 3.3 indicate a low level of self-efficacy, scores from 3.4 to 6.7 indicate a moderate level of self-efficacy, and scores from 6.8 to 10 indicate a high level of self-efficacy (Harsch, 2008). Internal consistency reliability of the DSES was shown by a Cronbach's alpha of .97 in a sample of 29 first-year and 22 second-year education doctoral students from a small Midwestern university (Varney 2003, 2010).

In order to increase reliability and validity of DSES, Varney (2003) employed the following validation procedures: (a) submitted the DSES to a panel of experts, (b) administered the DSES to a pilot group of education doctoral students currently enrolled in or having recently graduated in an Education doctoral program other than the Midwestern university's doctoral program, (c) conducted an item analysis on pilot data, (d) conducted both exploratory and confirmatory factor analysis on pilot data, and (e) provided evidence for DSES construct validity based upon the findings from procedures listed in steps 1-4.

Based on the factor analysis interpretation, Varney (2003) found statistically significant positive relationships between dissertation self-efficacy and dissertation progress ($r = .556, p = .000$) indicating that students with the highest dissertation self-efficacy showed the most amount of dissertation progress, while students with lower confidence in their ability to work on their dissertation showed the least amount of dissertation progress. Although Varney's findings did not indicate a relationship between the three doctoral program components and dissertation progress, he suggested that they are a source of dissertation self-efficacy. In other words, Varney suggested dissertation self-efficacy to be a mediating variable between dissertation progress and the three doctoral program components (doctoral students' perceptions of the value of being part of a cohort, being mentored and being involved in dissertation preparation). Further construct validation of DSES occurred as part of a follow up study conducted by Varney in 2010 and supported the conclusion that there was good dissertation self-efficacy construct validity and that DSES appears to reliably measure a construct consistent with self-efficacy theory.

Harsh (2008) used the DSES (also known as the Dissertation Appraisal Inventory or DAI) developed by Varney (2003) to investigate the role of self-efficacy, locus of control and self-handicapping in dissertation completion. After conducting exploratory factor analysis and investigated one-factor and two-factor solutions, Harsch indicated that the internal consistency reliability estimate in her sample (132 dissertation non-completers and 111 dissertation completers across the United States) or Cronbach's alpha was .90 (compared to Cronbach's alpha of .97 in Varney's 2003 study) and she supported Varney's (2003) single factor solution, namely self-efficacy. Harsch found that completers scored significantly higher than non-completers on the construct of dissertation self-efficacy. However, she indicated that it was difficult to establish a link between dissertation self-efficacy and dissertation completion.

In a more recent study, Colvile (2012) found dissertation self-efficacy to be significantly and positively related to dissertation progress, as well as to academic help-seeking attitudes and achievement goal orientations. Comparable to Varney (2003) and Harsch (2008), Colvile (2012) reported similar internal consistency reliability or Cronbach's alpha of .94 for Investigative and Social doctoral candidates without removing scale items.

Responsibility Scale

The Responsibility Scale (RS; Kluever & Green, 1998; Appendix D) also known as the Dissertation Responsibility Scale is an instrument developed to investigate doctoral candidates' perceptions of who is responsible for 16 different tasks associated with dissertation and degree completion. The RS consists of 16 items targeting specific dissertation completion tasks and asking respondents to rate both, who *is* and who *should*

be responsible for completion of different dissertation tasks. Responses are rated on a 7-point scale, with one end of the continuum (point 1) indicating total student responsibility, and the opposite end (point 7) indicating total university responsibility. Some level of shared responsibility is indicated by points 2 through 6.

Subjects of this study were instructed to respond to each item of the scale twice: the first response indicated the student's impression of "how it is now" and the second response indicated "how it should be." This represents 32 choices for the 16 items. The scale items originated with the authors and they were used in a previous study to compare students and graduates or a doctoral program in education. According to Kluever and Green (1998), each item of the RS represents a real requirement for completion of the dissertation based on the literature available, on college and university guidelines, and on discussions conducted with focus groups consisting of both, graduates and students who had not yet completed their dissertation. Along with the demographics, subjects were administered two other scales: a 45-item dissertation barriers scale constructed by the authors that assessed students' perceptions of what seemed to be barriers to dissertation completion, and the second scale was a 43-item Procrastination Inventory developed by Muszynski & Akamatsu (1991). Scores on the scale range from 16-112, with scores between 16-37 indicating high levels of student responsibility, scores between 38-75 indicating shared student – university responsibility, and scores between 76-112 indicating low levels of student responsibility.

To establish variability of the instrument, a principal components analysis with varimax rotation of the scale with "the way it is" and "the way it should be" were analyzed separately and resulted in similar factor patterns. Two factors were identified in

the way “it is” scale: (a) organization and preparation to complete the dissertation (Is- Preparation), and (b) evaluation and quality control of the process (Is- Evaluation). Both of these two factors accounted for 49.4% of the variance. The same two factors were identified in the way “it should be” scale, and they accounted for 42.5% of the variance. Rasch analysis was performed on each 16-item scale set and their subscales.

Pearson separation reliability for the IS- Evaluation subscale comprised of 4 items was .69, and for the “Should be” – Evaluation subscale Pearson separation reliability was .65. For the 11-item “Is” – Preparation subscale separation reliability was .75, while for “Should be” – Preparation subscale consisting of the same amount of items, separation reliability was .83. Separation reliability was considered acceptable for each subscale separately as well as for the total scale.

When comparing mean scores for each of the 16 items for the two groups, significant differences in perceptions were identified for individual scale items in both groups (students and graduates), as well as significant differences in subscale scores. The students had higher ratings for 11 of the 16 “should be” items in the direction of university responsibility, while the graduates had higher mean scores for only 5 tasks in the direction of university responsibility. On ‘the way it is’ scale, students’ mean scores on all 16 items were in the direction of student responsibility when compared to the ratings of graduates. These findings indicate that even though students accept the fact that dissertation tasks are their responsibility, they still believe that the university should be responsible for more of these tasks. Overall, the RS has value and is a useful instrument in examining students’ perceptions about the dissertation process.

Perceived Stress Scale

The Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983; Appendix D) is one of the most popular and widely used instruments for measuring the perception of stress. PSS is a 10-item self-reported questionnaire and it was designed to measure the extent to which life situations are appraised stressful. The PSS was designed to be used in community samples with at least a junior high school education. Items are general in nature rather than focusing on specific events or experiences and they were designed to evaluate the degree to which respondents find their lives unpredictable, uncontrollable and overloaded. Most questions in the PSS ask about feelings and thoughts during the last month, but the scale also includes a number of direct queries about current levels of experienced stress.

There are three versions of the PSS. The original instrument is a 14-item scale (PSS-14) developed by Cohen et al. in 1983. The second version known as PSS-10 and including only 10 items was introduced five years later after using factor analysis based on data from 2,387 U.S. residents. The third version consisting of only 4 items and known as PSS-4 was developed to be used for phone interviews or situations requiring a very short scale (Cohen & Williamson, 1988).

The PSS-10 version will be used for the purposes of the current study. The PSS-10 is a very economical scale that takes only a few minutes to fill out and is easy to score. The PSS-10 items are introduced with “*In the last month, how often have you felt . . .*” For the purposes of this study this introductory statement has been changed to “*during the dissertation process, how often have you felt . . .*”, and then followed by such items as *nervous and stressed, that difficulties were piling up so high that you could not overcome*

them, and that you could not cope with all the things that you had to. Responses are scored on a five-point Likert-type scale ranging from 1 (never) to 5 (very often). Items 4, 5, 7, & 8 are the positively stated items. Scores are obtained by reversing responses on the four positive items (e.g., 1=5, 2=4, 3=3, 4=2 & 5=1) and then summing across all 10 items to create a psychological stress score, with higher scores indicating greater psychological stress.

The PSS was normed on both college and community samples. Internal reliability (Cronbach's alpha) for the PSS-10 was determined in three separate tests using three samples, two college students samples and one sample including a heterogeneous group in a smoking cessation class, and Cronbach's alpha reliability coefficients ranged from .84 to .86. Additionally, a test-retest correlation was administered to a group of college students from the University of Oregon. The test conducted two days apart and the students were encouraged to strive for accuracy rather than consistency across time. Two test-retest correlation results was found to be .85 (Cohen, 1983).

Validity was determined with extensive normative data on 2, 387 respondents. Correlations of .76 and .65 were found between the PSS and depressive symptoms (Cohen et al, 1983). More recent studies have indicated and validated the potential associations of perceived stress as measure by the PSS and a several outcomes such as stress measures, health behavior measures, self-reported health and health services, smoking status and help seeking behavior (Cohen et al, 1988; Koopman, et al., 2000).

Satisfaction with the Dissertation Process

Satisfaction with the dissertation process has been measured for the purposes of this study by a single, straight forward question on how satisfied doctoral candidates and recent graduates were with the dissertation process. The question was a 5 point Likert scale allowing respondents to express how satisfied or dissatisfied they were with the dissertation process. Responses ranged from (1) “not at all satisfied” to (5) “completely satisfied” (see Appendix D).

Internal consistency reliability has been performed for the purposes of this study for self-efficacy, locus of control, and perceived stress. As noted in Table 1 all final Cronbach’s alphas were acceptable, with estimates ranging from .80 to .95. The widely-accepted social science cut-off is that alpha should be .70 or higher (Schmitt, 1996).

Table 1
Reliability for Self-Efficacy, Locus of Control and Perceived Stress

Scale	No. items	Chronbach’s alpha
Self-efficacy	16	.955
Locus of Control		
Current responsibility	16	.802
Should responsibility	16	.824
Perceived Stress	16	.901

Demographic Questionnaire

The demographic questionnaire used in this study (see Appendix D) collected information regarding participants’ age, sex, ethnicity, marital status, employment status, residence status, dissertation status, program area, time limit in completing the doctoral program, overall satisfaction with the dissertation process, and environmental factors

(finances; emotional support received from friends; family members and committee members). The questionnaire was developed by Harsch (2008) and some items were adapted for the purposes of the current study.

Procedure

Forty-eight universities across the United States offering doctoral degrees in Educational Psychology were randomly selected and contacted for the purpose of collecting data for this study, but only 30 of them agreed to participate in the research study.

After defending the proposal, the researcher of this study submitted a request to the Institutional Review Board (IRB) of Andrews University (see Appendix A) for research approval. Upon IRB approval, department chairs of the selected universities offering Educational Psychology degrees were contacted. They were asked via electronic mail if they would be willing to participate in this study and allow program coordinators to invite via email their doctoral candidates and recent doctoral graduates to fill out the survey provided. After receiving participation approval from department chairs, the researcher of this study contacted the respective program directors and emailed them the study purpose, a prepared survey invitation (see Appendix B), and a link where doctoral candidates and graduates could access the survey. On behalf of the researcher, program coordinators forwarded the information to their doctoral candidates and recent graduates (who graduated within the last 6 years) and invited them to participate in the online survey.

Data for this study was collected via an online survey hosted by SurveyMonkey. The prepared survey invitation included a brief description of the study and an invitation

to participate by accessing the provided link. Once the provided link was accessed, before completing the survey, participants were presented with an Informed Consent Form that described the participation procedure (see Appendix C). Those who agreed to participate were then instructed to check the consent box and proceed to the next page in order to complete the survey. The estimated time for the completion of the survey was 10-20 minutes and this was indicated in the Informed Consent Form. Participants were also informed about their right to withdraw from participation at any time without penalty and about their right to contact the researcher of the study or Andrews University IRB office in case they had any questions about the study. Participants were also assured of confidentiality and anonymity. In order to elicit a higher response rate, on the last page of the survey participants were presented with the option of being included in a random gift card drawing for \$25 gift cards to Amazon.

Treatment of Data

Data were transferred from SurveyMonkey to SPSS through a formatting option which ensured accurate data transfer and eliminated errors from human data entry. Descriptive statistics analysis was conducted to ensure all variables were within appropriate ranges, and means and standard deviations were analyzed to ensure the plausibility of options.

Respondents who did not complete any scale items systematically were deleted. Frequencies indicated some missing data and mean scores were imputed for individuals missing few items to eliminate exclusion from the study.

Data Analysis

Data gathered from the survey was analyzed with the Statistical Package for Social Sciences (SPSS) Version 20.0 for Windows and Analysis of a Moment Structures (AMOS) version 22.0 computer software which has been specifically designed to perform path analysis. Descriptive statistics analysis was performed by frequency, mean and standard deviation. Pearson r correlations and ANOVA were used to test significant differences in the variables of interest of this study and to determine any relationships between the independent variables, or any interaction between different groups of variables. Finally, path analysis was conducted to analyze intercorrelations between the social cognitive factors (self-efficacy, locus of control, perceived stress, and satisfaction with the dissertation process) and dissertation completion in order to determine whether the model developed for this study based on the conceptual framework is valid. Path analysis is a multivariate statistical analysis technique (a combination of factor analysis and multiple regression analysis) used to analyze structural relationships between measured variables and latent variables. This method is preferred by researchers because it allows one to explore intercorrelations between different sets of variables in a single analysis.

Summary

This chapter described the methods used in this study. This study investigated the role of self-efficacy, locus of control, perceived stress and student satisfaction with the dissertation process on dissertation completion. These variables have been measured by the following measures: 1) The Dissertation Appraisal Inventory (DAI; Varney, 2003); 2) The Dissertation Responsibility Scale (DRS; Kluever & Green, 1998); 3) The Perceived

Stress Scale (Cohen et al., 1988); 4) A single, straight forward 5 point Likert scale question on how satisfied doctoral candidates and recent graduates were with the dissertation process; 5) A demographic questionnaire.

Participants were contacted by their respective department chairs or program directors/coordinators, which I initially contacted and asked for permission to participate in the study, and invited them to participate in the online survey hosted by SurveyMonkey. After data collection was completed, analysis was conducted using Statistical Package for Social Sciences (SPSS) Version 20.0 for Windows and Analysis of a Moment Structures (AMOS) version 22.0 computer software which has been specifically designed to perform path analysis.

CHAPTER 4

RESULTS

Introduction

The purpose of this study is to examine the relationship and interrelationships between self-efficacy, locus of control, perceived stress and student satisfaction with dissertation completion. In this chapter I will first focus on the description of the participating sample and demographics of this study. Unless otherwise indicated, percentages are based on the number of respondents reporting. I will then present a report of the findings and the analyses of the data. Only statistically significant results will be discussed. The threshold for significance, which is the acceptable probability for a significant finding to have occurred by chance, was set at $\alpha < .05$.

Description of the Sample

The final research sample included 153 educational psychology students from 30 universities across the United States. One hundred and ninety-one individuals attempted to complete the online survey. However, 38 cases were eliminated due to their large number of missing responses. These individuals quit the survey without completing all the questions and this was interpreted as they revoked their consent to participate in the study and their responses were deleted from the data set. Other missing data from the remaining cases were replaced by the mean values of the corresponding variables. This

resulted in 153 completed and usable surveys that were included in the analysis.

Demographic information about the sample is presented in Table 2.

Table 2

Demographic Characteristics of Participants (N =153)

Demographic Characteristic	N	%
Gender		
Female	115	75.2
Male	37	24.2
Missing	1	0.7
Residence Status		
On campus	9	5.9
Off campus	114	74.5
Out of state	25	16.3
Out of the country	5	3.3
Program Emphasis		
General Ed. Psych	9	5.9
Human Development	8	5.2
Developmental Psychology	20	13.1
Cognitive Psychology	19	12.4
Behavioral neuroscience	5	3.3
Learning & Behavior	12	7.8
School Psychology	43	28.1
Special Education	3	2.0
Research & Evaluation	2	1.3
Psychometric methods	19	12.4
Other	12	7.8
Missing	1	0.7
Doctoral Program Status		
Still doing course work	8	5.2
Completed required courses	4	2.6
Preparing for comprehensive exams	2	1.3
Completed comprehensive exams	6	3.9
Writing dissertation proposal	40	26.1
Dissertation proposal approved	38	24.8
Withdrew from program	1	0.7
Received doctoral degree	54	35.3
Dissertation Status		
Deciding upon a topic	18	11.8
Writing the chapters for proposal	39	25.5
Proposal approved, not collecting data	3	2.0

Table 2 – *Continued*

Demographic Characteristic	N	%
Proposal approved, collecting data	15	9.8
Analyzing data	9	5.9
Writing final dissertation chapters	15	9.8
Successfully defended dissertation	8	5.2
Dissertation submitted/approved by graduate school	46	30.1
Time Limit		
4 years	3	2.0
5 years	26	17.0
6 years	19	12.4
7 years	30	19.6
8 years	17	11.1
9 years	4	2.6
10 years	18	11.8
No time limit	35	22.9
Missing	1	0.7
Employment status		
Full time	47	30.7
Part time	62	40.5
Not employed	43	28.1
Missing	1	0.7
Financial Security		
Not at all secure	2	1.3
Minimally secure	23	15.0
Somewhat secure	41	26.8
Moderately secure	38	24.8
Completely secure	49	32.0
Emotional Support		
None	11	7.2
Below average	30	19.6
Average	47	30.7
Above average	37	24.2
Exceptional	28	18.3
Satisfaction with the Dissertation Process		
Not at all satisfied	7	4.6
Minimally satisfied	23	15.0
Somewhat satisfied	57	37.3
Moderately satisfied	53	34.6
Completely satisfied	13	8.5
Total	153	100.0
*Percent may not add to 100 due to missing values		

Demographics

Table 2 presents the demographic characteristics of the participants. One hundred and fifty-three individuals participated in this study. Specifically, the sample included 75.2% females and 24.2% males with the youngest participant being 22 years old and the oldest 65 years old. The average age of participants was 33.72 years ($SD = 8.45$).

Regarding residence status, out of the 153 participants 9 (5.9%) of them reported living on campus, 114 (74.5%) living off campus/community, 25 (16.3%) living out of state and 5 (3.3%) out of the country.

Under the umbrella of educational psychology there are several emphases. The following is a breakdown of the 153 doctoral students in the field of educational psychology who participated in this study: 9 (5.9%) were general educational psychology, 8 (5.2%) human development, 20 (13.1%) developmental psychology, 19 (12.4%) cognitive psychology, 5 (3.3%) behavioral neuroscience, 12 (7.8%) learning and behavior, 43 (28.1%) school psychology, 3 (2.0%) special education, 2 (1.3%) research and evaluation, 19 (12.4%) psychometric methods, and 12 (7.8%) other emphases in psychology.

In terms of current status in the doctoral program, 54 (35.3%) participants received their doctoral degree within the past 6 years, 1 (0.7%) participant withdrew from the program with no plans to return, 8 (5.2%) were still doing course work at the time of completing the survey, 4 (2.6%) completed required coursework, 2 (1.3%) were preparing for comprehensive exams, 6 (3.9%) completed comprehensive exams, 40 (26.1%) were writing their dissertation proposal, and 38 (24.8%) had their dissertation proposal approved at the time of taking the survey.

In terms of current dissertation status, 18 (11.8%) were still deciding on a topic, 39 (25.5%) were writing the chapters for the proposal, 3 (2.0%) had their proposal approved but were not collecting data, 15 (9.8%) had their proposal approved and were collecting data, 9 (5.9%) were analyzing data, 15 (9.8%) were writing final dissertation chapters, 8 (5.2%) successfully defended their dissertations, and 46 (30.1%) had their dissertation submitted and approved by the graduate school.

Regarding the average time limit allowed by their respective universities for completing a doctoral degree, out of the 153 participants who responded to this question, 35 (22.9%) indicated that their respective universities required “no time limit”, 18 (11.8%) indicated a 10-year time limit, 4 (2.6%) indicated a 9-year time limit, 17 (11.1%) indicated an 8-year time limit, 30 (19.6%) indicated a 7-year time limit, 19 (12.4%) indicated a 6-year time limit, 26 (17.0%) indicated a 5-year time limit, and 3 (2.0%) indicated a 4-year time limit. The average time limit reported by participants was 4.91 years ($SD = 2.27$).

During the majority of their doctoral studies, 47 (30.7%) participants reported that they were employed full time, while 62 (40.5%) of them reported being employed part time and 43 (28.1%) being unemployed.

Regarding financial security during the dissertation process, out of 153 respondents 49 (32.0%) indicated that they were ‘completely secure,’ 38 (24.8%) were ‘moderately secure,’ 41 (26.8%) were ‘somewhat secure,’ 23 (15.0) were ‘minimally secure,’ and 2 (1.3%) were ‘not at all secure.’ On average, participants indicated that they were ‘moderately secure’ financially ($M = 3.71$) during the dissertation process.

When asked to rate the degree of emotional support participants received from their dissertation advisor, out of the 153 respondents 11 (7.2%) indicated that they received no emotional support, 30 (19.6%) received “below average’ emotional support, 47 (30.7%) indicated that they received ‘average’ emotional support, 37 (24.2%) received ‘above average’ emotional support, and 28 (18.3%) indicated that they received ‘exceptional’ emotional support. Participants of this study indicated that they received ‘average’ emotional support ($M = 3.27$) from their advisor during the dissertation process.

Asked about the overall satisfaction with the dissertation process, out of the 153 respondents 7 (4.6%) indicated that they were ‘not at all satisfied,’ 23 (15.0%) were ‘minimally satisfied, 57 (37.3%) were ‘somewhat satisfied,’ 53 (34.6%) were ‘moderately satisfied,’ and 13 (8.5%) were ‘completely satisfied.’” Participants of this study indicated that they were ‘somewhat satisfied’ ($M = 3.27$) with the dissertation process.

Index for Dissertation Completion

A linear index has been developed to show progress on dissertation completion (see Table 3). On the progress index, a 1 indicates ‘still doing coursework and deciding upon topic;’ 2 – ‘completed required coursework or still doing coursework and writing proposal chapters;’ 3 – ‘completed coursework, preparing to take comprehensive exams and writing dissertation proposal;’ 4 – completed coursework and comprehensives, and writing dissertation proposal;’ 5 – ‘writing proposal chapters;’ 6 – ‘proposal approved, not collecting data;’ 7 – ‘proposal approved and collecting data;’ 8 – ‘proposal approved, analyzing data;’ 9 – ‘writing final dissertation chapters;’ 10 – ‘successfully defended

dissertation, dissertation submitted to graduate office.’ The linear index suggests that the more advanced a student is in his doctoral program, the more progress he makes on his dissertation and the closer he is to completing the doctoral program.

Table 3

Dissertation Progress Index (N = 153)

Characteristic	N	%
Dissertation Progress Index		
Still doing course work/ deciding upon topic	6	3.9
Still doing coursework/ completed coursework & writing proposal chapters	6	3.9
Completed coursework/preparing for comprehensive & writing proposal chapters	3	2.0
Completed coursework & comprehensive/writing proposal	1	0.7
Writing proposal	39	25.7
Proposal approved not collecting data	5	3.3
Proposal approved collecting data	15	9.9
Proposal approved, analyzing data	8	5.3
Writing final dissertation chapters	15	9.9
Successfully defended dissertation/diss. submitted	54	35.5
Missing	1	0.7
Total	153	100.0
*Percent may not add to 100 due to missing values		

Results by Question

Research Question 1

Research question 1: What are the levels of self-efficacy, locus of control, perceived stress and satisfaction with the dissertation process among students in Educational Psychology?

Self-Efficacy

The Dissertation Self-Efficacy Scale (DSES) is a self-reported measure designed to assess doctoral students' beliefs or perceptions of their ability to complete a dissertation. The DSES was originally constructed as a 100-point Likert scale but used for this study as a 10-point Likert scale. It consists of 16 items and responses are rated on a scale of 0 = "no confidence at all" to 10 = "complete confidence." Scoring of this measure and calculating dissertation self-efficacy is performed by adding the responses of all 16 items and then dividing by 16 to obtain a mean score. Scores of 0 – 3 indicate a low level of self-efficacy, scores from 3.4 – 6.7 indicate a moderate level of self-efficacy, and scores from 6.8 to 10 indicate a high level of self-efficacy (Harsch, 2008).

Table 4 shows the variable means and standard deviations, and self-efficacy shows a total mean of 7.05 out of a possible score of 10. The standard deviation of this scale was 1.85. Scores of 6.8 to 10 indicate a high level of self-efficacy and the score of 7.05 indicates that the sample used in this study had a high level of self-efficacy. Table 5 shows that there were no significant differences in self-efficacy between male and female as determined by one-way ANOVA [$F(1,150) = 0.96, p = 0.32$]. However, one-way ANOVA presented in Table 6 revealed a significant difference in self-efficacy between doctoral candidates and graduates [$F(9,142) = 1.97, p = 0.04$], with graduates ($M = 7.56, SD = 1.80$) showing higher levels of self-efficacy than doctoral candidates ($M = 6.76, SD = 1.83$).

Table 4

Variable Means and Standard Deviations (N = 153)

Variable	Mean	SD	Skewness
Age	33.72	8.45	
Time limit	4.91	2.27	
Degree you were financially secure	3.71	1.11	
Degree of emotional support	3.27	1.18	
Dissertation Progress Index	7.23	2.73	
Satisfaction with dissertation process	3.27	0.97	-.318
Self-efficacy	7.05	1.85	-.683
Locus of control - current	2.08	0.61	.422
Locus of control - should	2.68	0.80	.123
Perceived stress	3.11	0.68	.026

Locus of Control

The Responsibility Scale, also known as the Dissertation Responsibility Scale, has been developed to measure doctoral students' perceptions of who is responsible for 16 different tasks associated with dissertation and program completion. The scale consists of 16 items and responses are rated on a 7-point scale with one end of the continuum (point 1) indicating total student responsibility, and the opposite end (point 7) indicating total university responsibility. Some level of shared responsibility is indicated by points 2 through 6.

Current responsibility shows a mean of 2.08 (SD = 0.61), and should responsibility shows a mean of 2.68 (0.80) out of a possible score of 7. Scores of 2.08 and 2.68 indicate low levels of shared responsibility, suggesting that the sample used in this study believes that students rather than the institution should be in control and take responsibility for the tasks associated with dissertation completion. The one-way ANOVA revealed no gender difference in locus of control [$F(1,150) = 1.08, p = 0.30$]

(see Table 5), and no significant differences between doctoral candidates and graduates [F(9,142) = 1.35, p = 0.21] (see Table 5).

Table 5

Male vs. Female Comparisons (N= 152)

	Group	N	Mean	SD	F	Sig	Effect Size
Self-Efficacy	Male	37	7.28	2.13	0.96	0.32	-0.00251
	Female	115	6.92	1.83			
	Total	152	7.01	1.91			
Locus of control (Current)	Male	37	2.15	0.58	1.08	0.30	0.00053
	Female	115	2.03	0.61			
	Total	152	2.06	0.60			
Locus of control (Should)	Male	37	2.68	0.78	0.00	1.00	-0.01164
	Female	115	2.68	0.81			
	Total	152	2.68	0.80			
Perceived Stress	Male	37	2.99	0.78	1.53	0.21	0.00442
	Female	115	3.15	0.64			
	Total	152	3.11	0.68			
Satisfaction with Dissertation Process	Male	37	3.27	0.96	0.00	0.92	-.017
	Female	115	3.29	0.98			
	Total	152	3.28	0.97			

Perceived Stress

The Perceived Stress Scale (PSS) consists of 10 items and it was designed to measure the perception of stress. Responses are scored on a 5-point Likert scale ranging from 0 (never) to 5 (very often). Scores are obtained by reversing responses on the 4 positive items (4, 5, 7, & 8) and then summing across all 10 items to create a psychological stress score. Higher scores indicate greater psychological stress.

Perceived stress shows a total mean of 3.11 out of a possible score of 5 and the standard deviation of this scale was 0.68. A score of 3 indicates moderate levels of perceived stress and suggests that both doctoral candidates and graduates felt “sometimes” stressed during the dissertation process. The one-way ANOVA revealed no gender difference in perceived stress [$F(1,150) = 1.53, p = 0.21$] (see Table 5) and no differences in perceived stress between doctoral candidates [$F(9,142) = 1.53, p = 0.14$] (see Table 6).

Table 6

Completers vs. Non-Completers Comparisons (N = 153)
Variable Mean and Standard Deviation

Variable	N	Mean	SD	F	Sig
Self-efficacy					
Non-completers	98	6.76	1.83		
Completers	54	7.56	1.80		
Total	153	7.05	1.85	1.97	0.04
Locus of control – current					
Non-completers	98	2.03	0.61		
Completers	54	2.15	0.61		
Total	153	2.08	0.61	1.35	0.21
Locus of control – should					
Non-completers	98	2.65	0.80		
Completers	54	2.75	0.81		
Total	153	2.68	0.80	0.86	0.55
Perceived stress					
Non-completers	98	3.13	0.71		
Completers	54	3.09	0.61		
Total	153	3.11	0.68	1.53	0.14
Satisfied with Dissertation Process					
Non-completers	98	3.02	0.87		
Completers	54	3.78	0.92		
Total	153	3.29	0.96	3.40	0.00

Student Satisfaction with the Dissertation Process

The single, straight forward question was created to find out how satisfied doctoral candidates and recent graduates were with the dissertation process. The question was developed as a 5-point Likert scale with responses ranging from 1 (not at all satisfied) to 5 (completely satisfied). Student satisfaction shows a total mean of 3.29 out of a possible score of 5. The standard deviation of this scale was 0.96. Scores of 3.3 indicate a moderate level of satisfaction with the dissertation process. The one-way ANOVA revealed no gender differences in satisfaction with the dissertation process [$F(1,150) = 0.00, p = 0.92$] (see Table 5). However, one-way ANOVA indicated significant differences in satisfaction with the dissertation process between doctoral candidates and graduates [$F(9,142) = 3.40, p = 0.00$], with graduates ($M = 3.78, SD = .925$) showing higher levels of satisfaction than doctoral candidates ($M = 3.02, SD = .873$).

Table 4 shows the variable means and standard deviations, Table 5 shows the ANOVA comparisons for males and females by variable, and Table 6 presents the ANOVA results for both doctoral candidates and recent graduates on all 4 variables.

Research Question 2

What is the relationship, if any, between scores of self-efficacy, locus of control, perceived stress, student satisfaction with the dissertation process and dissertation completion?

Descriptive statistics and bivariate correlations among self-efficacy, locus of control, perceived stress, student satisfaction and dissertation completion are presented in Table 7. Bivariate analysis indicated theoretical associations among the variables, with

only four reporting no statistical significance. There was a significant positive correlation between dissertation progress/completion and self-efficacy ($r = .209, p < .05$), and dissertation progress/completion and satisfaction with the dissertation process ($r = .289, p < .05$), suggesting increase on one variable resulted in increase on the other variable. There was also a significant positive correlation between self-efficacy and satisfaction with the dissertation process ($r = .455, p < .05$), suggesting that higher self-efficacy was associated with more satisfaction. A significant negative correlation between perceived stress and self-efficacy ($r = -.410, p < .05$), and between perceived stress and satisfaction ($r = -.445, p < .05$) suggests that higher levels of self-efficacy and satisfaction are associated with lower levels of stress.

Table 7

Bivariate Correlations among Variables

Variables	M	SD	2	3	4	5	6
(1) Dissertation ProgressIndex	7.23	2.73	.289**	.209**	.077	.025	-.094
(2) Satisfaction with dissertation process	3.27	0.97		.455**	.122	-.162*	-.445**
(3) Self-efficacy	7.05	1.85			-.089	-.169*	-.410**
(4) Locus of control current	2.08	0.61				.210**	-.070
(5) Locus of control should	2.68	0.80					.074
(6) Perceived stress	3.11	0.68					

Note: ** $p < .01$, * $p < .05$

The hypothesized model presenting the inter-relationship among self-efficacy, locus of control, perceived stress, satisfaction with the dissertation process and dissertation completion is presented in Figure 5 below. To examine the validity of this hypothesized model, path analysis using AMOS was employed. The path coefficients of the full model are presented in Figure 6A modified or re-specified model is shown in Figure 7.

Notice in Figure 5, locus of control is not connected to dissertation completion. Some studies indicate that locus of control might be connected to dissertation completion, but other studies found no direct relationship with dissertation completion. However, locus of control can indirectly explain dissertation completion and satisfaction with the dissertation process, and directly explain self-efficacy.

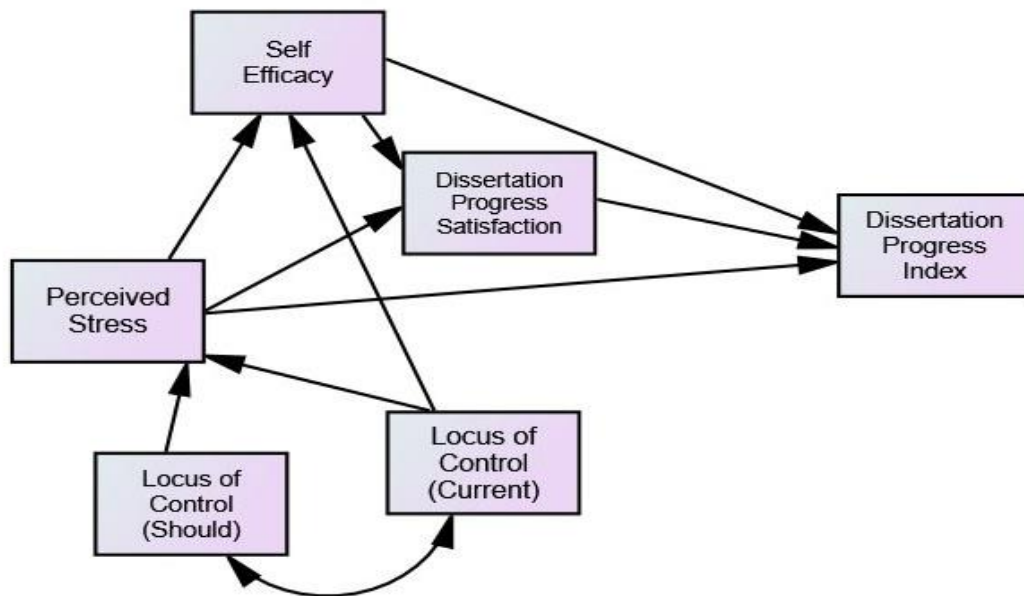


Figure 5. Hypothesized Model

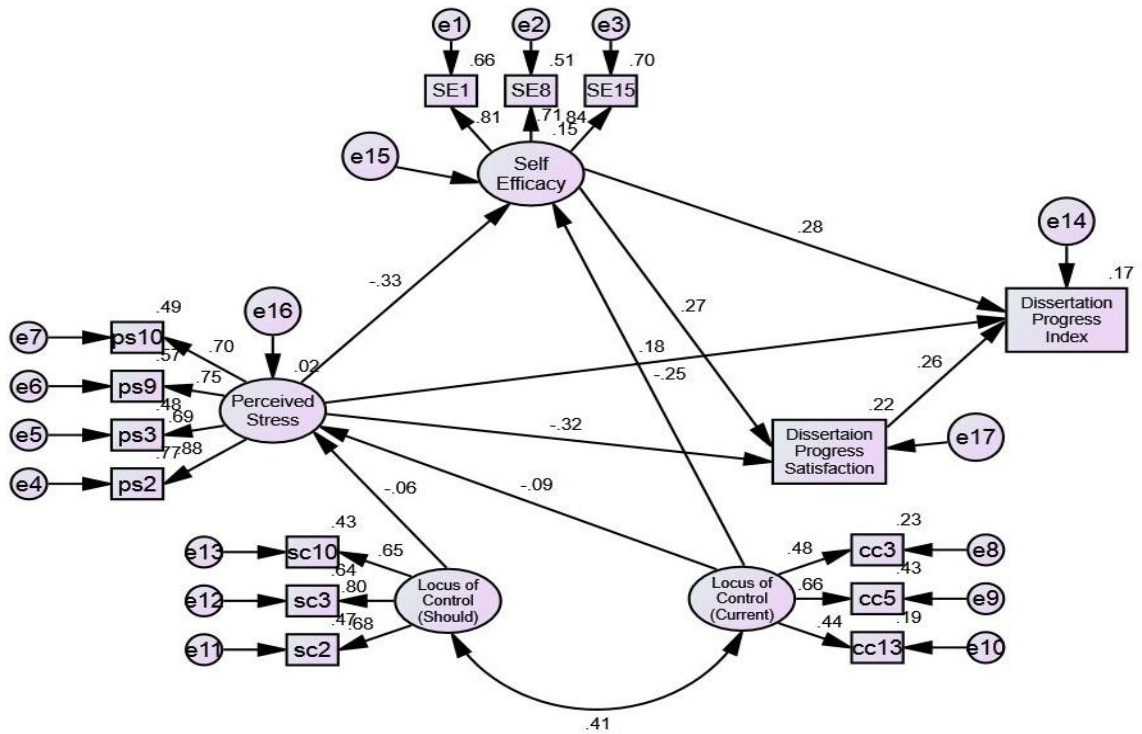


Figure 6. Path coefficients of full model

An explanation of the most highly correlated variables in Figure 6 (SE1, SE8, SE15, CC3, CC5, CC13, PS2, PS3, PS9, PS10) with the latent variables (Self-Efficacy, Locus of Control, and Perceived Stress) is presented in Table 8.

Table 8

Table Guide to Explain Highly Correlated Variables with Latent Variables

Latent Variable	Most Highly Correlated Variables
Self-Efficacy	SE1 Select a suitable dissertation topic
	SE8 In order to effectively write a review of the Literature, review and synthesize the scholarly literature in your area of study.
	SE15 Formulate a dissertation research question or statement

Table 8- *Continued*

Latent Variable	Most Highly Correlated Variables	
Locus of Control	CC3	Responsibility for locating and acquiring relevant research materials relating to the dissertation topic.
	CC5	Responsibility for submitting a protection of human subjects application.
	CC13	Responsibility for contacting experts whose background may contribute to the dissertation.
Perceived Stress	PS2	During the dissertation process, how often have you felt that you were unable to control the important things in your life?
	PS3	During the dissertation process, how often have you felt nervous and stressed?
	PS9	During the dissertation process, how often have you been angered because of things that were outside of your control?
	PS10	During the dissertation process, how often have you felt difficulties were piling up so high that you could not overcome them?

The hypothesized model was evaluated using AMOS 22 using the following indices: the chi-square test, the comparative fit index (CFI), the goodness of fit index (GFI) and the root mean square error of approximation (RMSEA). Meyers et al. (2006) and Loehlin (2004) suggest that the criteria used to determine an acceptable model fit is as follows: Absolute fit indices (Chi square, $p < .05$; GFI of 0.90 or greater, RMSEA of 0.08 or smaller); Relative fit indices (CFI $> .95$; NFI $> .95$); and parsimonious fit indices (AGFI > 0.90 ; PGFI > 0.5). Furthermore, for path coefficients to be considered for practical significance, Meyers et al. (2006), suggests a 0.3 or greater. However, the same authors suggests that when the model being tested is the first of its kind in the literature,

the importance of beta weights should not be downplayed even when they are below the benchmark for practical significance.

The hypothesized model was assessed using AMOS 22.0. The path coefficients are presented in Figure 6 and reported in Table 9. Fit indices ($\chi^2 = 80.288$, $df=82$, $p=.533$, $NFI=0.889$, $CFI=1.00$, $GFI=0.936$, and $RMSEA=0.00$) indicate that all indices fit almost perfectly with the hypothesized model.

Table 9

Raw Regression Weights Hypothesized Model

Variable		Estimate	S.E.	C.R.	P
PS	← SC	-.060	.121	-.493	.622
PS	← CC	-.194	.286	-.678	.498
SE	← PS	-.696	.201	-3.470	***
SE	← CC	-1.084	.544	-1.994	.046
SAT	← PS	-.326	.088	-3.715	***
SAT	← SE	.133	.043	3.117	.002
SE1	← SE	1.000			
SE8	← SE	.918	.107	8.590	***
SE15	← SE	1.003	.105	9.570	***
PS2	← PS	1.000			
PS3	← PS	.613	.068	9.044	***
PS9	← PS	.853	.085	10.023	***
PS10	← PS	.821	.089	9.181	***
CC3	← CC	1.000			
CC5	← CC	2.094	.647	3.238	.001
CC13	← CC	1.096	.349	3.142	.002
SC2	← SC	1.000			
SC3	← SC	1.017	.159	6.413	***
SC10	← SC	.873	.138	6.307	***
DissProgressIndex	← SAT	.736	.248	2.968	.003
DissProgressIndex	← PS	.542	.270	2.010	.044
DissProgressIndex	← SE	.400	.131	3.049	.002

Notes. ***. Significant at the 0.01 level (2-tailed).

SE (self-efficacy)

PS (perceived stress)

CC (locus of control current)

SC (locus of control should)

SAT (satisfaction dissertation process)

Both raw and standardized coefficients were examined and it was determined that some of these path coefficients were negligible or not statistically significant. As a result, a re-specification of the model was undertaken and paths that were weak and non-significant were deleted.

Re-Specified Model

The final re-specified model is shown in Figure 7 below. The fit indices for the re-specified model are shown in Table 10, and the standardized coefficients are reported in Table 11.

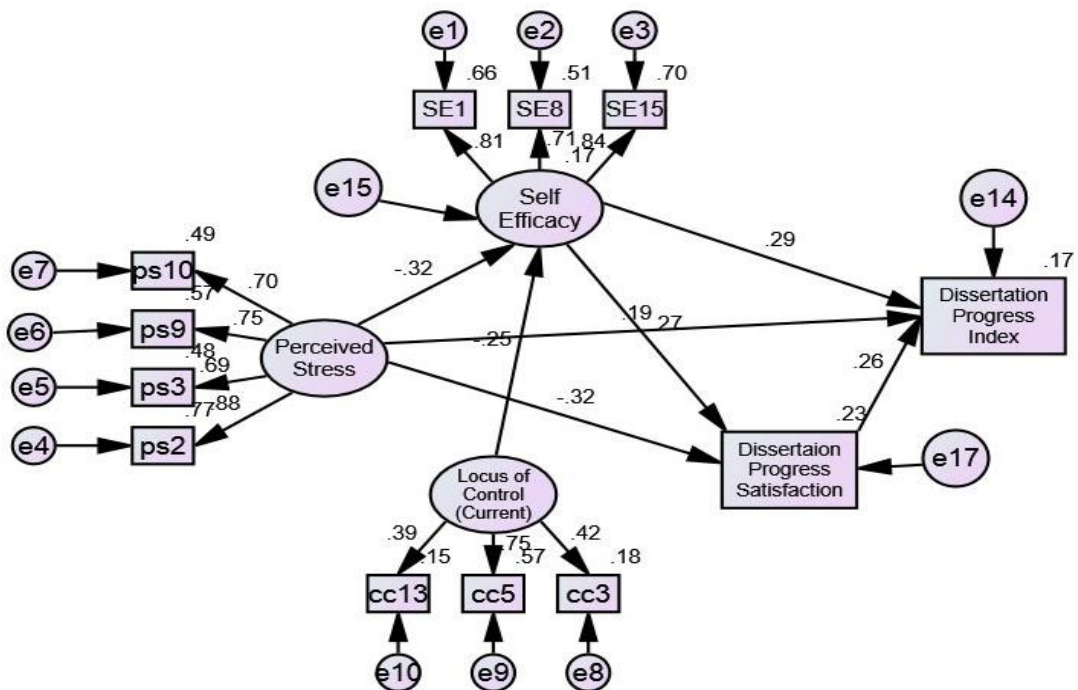


Figure 7. Re-specified model

Table 10

Re-Specified Model Fit Indices

Absolute	Relative	Parsimonious
$\chi^2=47.602$ p=.530 GFI = .953 RMSEA = 0.00	CFI = 1.00 NFI = .917	AGFI = .925

Table 11

Re-Specified Model Standardized Regression Weights

Variable		β
SE	← PS	-.320
SE	← CC	-.252
SAT	← SE	.267
SAT	← PS	-.317
SE1	← SE	.813
SE8	← SE	.713
SE15	← SE	.837
PS2	← PS	.880
PS3	← PS	.691
PS9	← PS	.754
PS10	← PS	.700
CC3	← CC	.422
CC5	← CC	.754
CC13	← CC	.392
DissProgressIndex	← SAT	.259
DissProgressIndex	← SE	.287
DissProgressIndex	← PS	.186

Note: SE (self-efficacy) SC (locus of control should)
 PS (perceived stress) CC (locus of control current)
 SAT (satisfaction dissertation process)

The Goodness of Fit Index (GFI), an absolute fit index which is sometimes substituted for Chi-square (Hooper, et al., 2008) was 0.953. Comparative Fit Index (CFI),

which “is a revised form of the NFI which takes into account sample size” (Hooper, et al., 2008) was 1.000. Both GFI = 0.953 and CFI = 1.000 indicate an almost perfect fit of the model. Finally, the Root Mean Square Error of Approximation (RMSEA), which “tells us how well the model, with unknown but optimally chosen parameter estimates would fit the population’s covariance matrix” (Hooper, et al., 2008) was 0.000 indicating an almost perfect fit. This measure should be 0.08 or below in order to indicate a good fit (Meyers et al., 2006).

An interpretation of the model shows that 17% of the variance in dissertation progress/completion can be explained by the model, primarily by the direct effects of self-efficacy, perceived stress and student satisfaction, and indirectly by locus of control. The model suggests that participants are more likely to make progress on their dissertation and complete it if they report greater satisfaction with the dissertation process ($\beta = .26$) and high self-efficacy ($\beta = .29$), and they report low levels of institutional responsibility ($\beta = -.090$) versus personal responsibility and low or optimal levels of stress ($\beta = .19$). High levels of stress appear to decrease both self-efficacy ($\beta = -.32$) and satisfaction with the dissertation process ($\beta = -.32$). Twenty-three percent (23%) of variance in satisfaction with the dissertation process can be explained by the model primarily by the direct effects of self-efficacy and perceived stress. Participants who report greater levels of self-efficacy ($\beta = .27$) and lower or optimal levels of stress ($\beta = -.32$) are more likely to be satisfied with the dissertation process and complete their dissertations ($\beta = .26$). Seventeen percent (17%) of the variance in self-efficacy can be explained by the direct effects of perceived stress and locus of control. The model suggests that participants are less likely to be confident and self-efficacious if they report

high levels of stress ($\beta = -.32$) and if they don't feel in control and don't take personal responsibility for specific dissertation tasks ($\beta = -.25$). Causal effects of the re-specified model are shown in Table 12, raw regression weights are presented in Table 13.

Table 12

Re-Specified Model Causal Effects

Outcome	Determinant	Causal Effects		Total
		Direct	Indirect	
Diss. Completion ($R^2 = .17$)	SE – DC	.287	.069	.356
	PS – DC	.186	-.196	-.010
	CC – DC	--	-.090	-.090
	SAT- DC	.259	--	.259
	SE – PS	-.320	--	-.320
	SE – CC	-.252	--	-.252
	SE - SAT	.267	--	.267
	PS- SAT	-.317	-.085	-.403
	CC - SAT	--	-.067	-.067

Notes. SE (self-efficacy)
 PS (perceived stress)
 CC (locus of control current)
 DC (dissertation completion)
 SAT (satisfaction dissertation process)

Table 13

Re-Specified Model Raw Regression Weights

Variable		Estimate	S.E.	C.R.	P
SE	← PS	-.668	.195	-3.429	***
SE	← CC	1.271	.609	-2.088	.037
SAT	← SE	.132	.043	3.083	.002
SAT	← PS	-.327	.088	-3.717	***
SE1	← SE	1.000			
SE8	← SE	.917	.106	8.643	***
SE15	← SE	1.002	.104	9.655	***
PS2	← PS	1.000			

Table 13 – *Continued*

Variable		Estimate	S.E.	C.R.	P
PS3	← PS	.610	.068	9.023	***
PS9	← PS	.851	.085	10.021	***
PS10	← PS	.819	.089	9.171	***
CC3	← CC	1.000			
CC5	← CC	2.733	1.120	2.441	.015
CC13	← CC	1.120	.381	2.941	.003
DissProgIndex	← SAT	.738	.248	2.978	.003
DissProgIndex	← SE	.402	.131	3.063	.002
DissProgIndex	← PS	.544	.271	2.010	.044

Notes. ***. Significant at the 0.01 level (2-tailed).

SE (self-efficacy)

PS (perceived stress)

CC (locus of control current)

SC (locus of control should)

SAT (satisfaction dissertation process)

Summary of Major Findings

Major findings from question one indicate that participants in this study reported high levels of self-efficacy, low levels of shared responsibility suggesting that participants believe that students rather than the institution should be in control for tasks associated with dissertation progress; and moderate levels of perceived stress and satisfaction with the dissertation process.

Major findings from question two indicate that the model explains 17% of the variance in dissertation progress/completion, primarily by the direct effects of self-efficacy, perceived stress and student satisfaction, and indirectly by locus of control. The model suggests that doctoral candidates are more likely to make progress on their dissertation and complete their programs if they report greater satisfaction with the dissertation process ($\beta = .26$) and high self-efficacy ($\beta = .29$), and if they indicate low

levels of institutional responsibility ($\beta = -.090$) versus personal responsibility, and low or optimal levels of stress ($\beta = .19$). High levels of stress appear to decrease both self-efficacy ($\beta = -.32$) and satisfaction with the dissertation process ($\beta = -.32$).

CHAPTER 5

SUMMARY, DISCUSSION, AND IMPLICATIONS

Introduction

In this chapter I will summarize the information contained in the previous four chapters by reviewing the purpose of the study, providing an abbreviated literature review, reviewing the statistical methodology employed and presenting the key findings of the present study. Then, the findings of this study will be discussed according to current literature. Implications of this study for practice will be included, limitations will be identified, and recommendations for future research will be also explored.

Purpose of the Study

The purpose of this study was to investigate the role of self-efficacy, locus of control, perceived stress and student satisfaction on dissertation completion (doctoral program completion) among doctoral candidates and recent graduates from selected Educational Psychology programs across the United States. The data from this study contributes to the literature on dissertation completion by examining the complex relationships and interrelationships between self-efficacy, locus of control, perceived stress, student satisfaction and dissertation completion. This area of research is important for the Educational Psychology field because it could expand the knowledge base about the role of cognitive and behavioral factors on task completion and outcomes such as

dissertation completion, and it could provide beneficial educational strategies on how to enhance program completion.

Summary of Literature Review

Doctoral students face a multitude of challenges in the process of completing their degree, with the dissertation often becoming one of the major obstacles for them. In the United States the rate of doctoral student completion has remained 50% over the past four decades (Alin & Kohun, 2007; Lovitts, 2001; Walker, Golde, Jones, Bueschel, & Hutchings, 2008). Many factors contribute to dissertation completion or non-completion, such as situational (finances, family responsibilities, geographic distance from university, priority of earning a PhD, job schedule), institutional or program specific (relationship with the advisor/committee chairperson), cognitive (self-efficacy, self-esteem, locus of control, stress), and affective (depression, anxiety) or personality factors (procrastination and perfectionism) (D'Andrea, 2002; Green, 1997; Muszynski & Akamatsu, 1991).

Researchers have also indicated social cognitive factors such as self-efficacy, locus of control and perceived stress as potential factors in task completion (Bandura, 1986, 1977; Felsten and Wilcox, 1992; Lovitts, 2001; McDermott, 2002; Pajares, 2001; Pintrich & Garcia, 1991; Pritchard & Wilson, 2003; Rotter, 1966; Schunk, 1991; Wentzel, 1987; Zimmerman, 2000; Zimmerman & Ringle, 1981).

Self-efficacy has been found to play an important role in task completion and students who possess higher levels of self-efficacy are more likely to put in more effort when accomplishing different tasks (Bandura, 1986, 1997), more likely to choose more challenging tasks as they are confident that they can accomplish them successfully (Pajares, 2001), more likely to persist longer on a task even when encountering

difficulties (Schunk, 1981; Zimmerman, 2000; Zimmerman & Ringle, 1981), and more likely to make use of cognitive and metacognitive strategies and persist longer in task completion than individuals with lower levels of self-efficacy (Pintrich & Garcia, 1991).

Varney (2003) has indicated that in order to accomplish the specific demands of writing and defending a dissertation a strong sense of self-efficacy is required. According to Bandura (1977) efficacy expectations develop from different sources, such as previous experiences with the task, modeling or observing other people's actions, verbal information or feedback, and emotional reactions such as fear or anxiety. Self-efficacy has been found to be essential during the dissertation process, and to be significantly and positively related to dissertation progress (Colvin, 2012; Faghihi, 1999; Harsch, 2008; Varney, 2003, 2010). The degree of effort doctoral students expend on their dissertations will depend on their efficacy expectations and the degree of their dissertation self-efficacy. Williams and Williams (2010) noted that "individuals with high levels of self-efficacy approach difficult tasks as challenges to master rather than as threats to be avoided" (p.455).

Locus of control is the belief that individuals can influence their behavior or situations based on the reinforcements (positive or negative) they have received in the past. Based on Rotter's (1966, 1975) research, locus of control can be measured on a continuum from high internal to high external. He also suggested that individuals with a strong internal locus of control are more likely to take responsibility for outcomes and attribute their success or failure to their own efforts and decisions, while individuals with external locus of control believe that outcomes are rather controlled by luck,

circumstances, fate or powerful others and that what happens to them is beyond their control.

When studied by itself, locus of control has not been found to be a significant predictor of academic achievement (Green, 1997), and when correlations were found, they were found to be stronger in adolescents compared to adults and children (Findley & Cooper, 1983; Ogunmakin & Akomolafe, 2013). However, when locus of control was studied in combination with self-efficacy, some researchers indicated a correlation between these concepts and academic achievement (Nowicki et al., 2004; Tella, Tella & Adika, 2008), while others found no correlations (Choi, 2013; Dinçyürek et al, 2012; Reynolds & Weigand, 2010).

Limited research has been conducted on the influence of locus of control on dissertation completion. Wentzel (1987) and McDermott (2002) have found significant correlations between measures of internal locus of control and dissertation completion, while Smith (1985) and Wagner's (1986) research found non-significant correlations between these variables. Further research is needed in this area.

Stress has been defined by Lazarus (1966) as a "relationship between the person and environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing." Lazarus believed that stress does not actually exist in the event itself, but it is rather a result of a transaction between a person and his/her environment. Lazarus also suggested that a person's response towards stress depends on whether an event is appraised as a challenge or a threat.

Stress is prevalent in many aspects of life and higher education is no exception especially for doctoral students at the dissertation stage (Blum, 2010). Students

experience stress for different reasons, such as financial pressures, absence of social life including close friends and family, test anxiety, lack of time management skills, student teacher interaction, teacher expectations and job prospects anxiety (Agolla & Ongori, 2009; Gadzella, Mastern, & Stacks, 1998; HanNa et al., 2014; Wilks, 2008).

Studies conducted on the impact of stress on academic performance have found stress to be inversely related to academic tasks and outcomes (Felsten & Wilcox, 1992; Pritchard & Wilson, 2003; Russell & Petrie, 1992), but some researchers have found no correlation between stress and task performance and outcomes (Petrie & Stoeber, 1997). A limited number of studies have been conducted on the effects of stress on graduate students, especially doctoral students. Based on available research, most graduate students face stressors and challenges such as high work load (Stewart, 1995), social isolation (Ali & Kohun, 2007; Lovitts, 2001), low social support (Kaufman, 2006; Stewart, 1995), and moderate to high stress (Bedewy and Gabriel, 2015; Kaufman, 2006; Lazarus & Folkman, 1984; Myers et. al, 2012).

Doctoral students in particular face stressors such as, relative poverty, anxiety, fear of failure, examinations, academic demands, sleeplessness and time constraints (Bowman & Bowman, 1990; Esping, 2010). The highest levels of anxiety experienced by doctoral students are during the course of their studies, and according to McGrath (2002) anxiety is often considered to be the main cause why students fail to complete their dissertations. However, some researchers (Griffin, n.d) have found that doctoral students with higher levels of self-efficacy are more confident in their ability to perform during the dissertation process and less anxious than students who are less confident.

Studies conducted on critical periods of stress for doctoral students indicated that non-completers reported more critical periods of stress that led to withdrawal from doctoral study when compared to those who completed doctoral study. Some of the sources of critical stress that differentiated completers from non-completers are: academic pressures, work pressures, required examinations, general discouragement, family problems and financial issues (Tierce, 1984; Wood, 1978). Lovitts (1996) also emphasized that doctoral students' decisions to leave the program were made of a "constellations of reasons" rather than a single reason (p. 211).

Another factor observed to influence dissertation completion is student satisfaction with the dissertation process, and in particular the student-advisor relationship (Aguinis, Nesler, Quigley, Lee, & Tedeschi, 1996; Bair & Haworth, 1999; D'Andrea, 2002; Hoskins & Goldberg, 2005; Maher, Ford, & Thompson et al., 2004; Spaulding and Rockinson-Szapkiw, 2012; Tinto, 1993).

Researchers have found student satisfaction to be positively associated with student success (Noel-Levitz, 2011), student retention (Hatcher, et al., 1992; Love, 1993), quality and overall effectiveness of a university program (Astin, Korn, & Green, 1987; Bailey, Bauman, & Lata, 1990; Love, 1998), and also with dissertation completion and program completion among doctoral students (Bair & Haworth, 2004; Bloom et al, 2007; Garcia et al., 1988; Goulden, 1991; Lovitts, 2001).

Researchers have indicated that doctoral students who were more likely to complete their degrees were those satisfied with their program of study, the quality of instruction received, and their relationship with their advisor. Specifically, the student interaction with their advisor is critical. Doctoral students' satisfaction with their

advisor/dissertation chair has been found to influence students' successful completion of their dissertations and programs of study (Bair & Haworth, 1999; Council of Graduate Schools and Educational Testing Service, 2010; Garcia et al., 1988; Lovitts, 2001, 2008; Muszynski, 1988; Neale-McFall, & Ward, 2015).

When doctoral students fail to complete their degrees, there is a rise in attrition rates, and both programs and students suffer (Green, 1997; Neale-McFall & Ward, 2015). Thus, the focus of this study was to examine the relationship between self-efficacy, locus of control, perceived stress, and student satisfaction with dissertation completion, and find ways to decrease attrition and increase dissertation/doctoral program completion.

Summary of Methodology

The present study employed a non-experimental, correlational research design using a survey research method. Participants of this study completed surveys that measured their (a) self-efficacy, (b) locus of control, (c) perceived stress, and (d) satisfaction in relation to dissertation/program completion.

In order to test a proposed model of the relationship between participants' self-efficacy, locus of control, perceived stress, satisfaction and dissertation/program completion, path analysis was used. Dissertation self-efficacy was measured with the Dissertation Self-Efficacy Scale (DSES; Varney, 2003). Locus of control was measured with the Responsibility Scale (RS; Kluever & Green, 1998). Perceived Stress was measured with the Perceived Stress Scale (PSS; Cohen, Kamarch & Mermelstein, 1983). Student Satisfaction was measured by a single, straight forward question on how satisfied doctoral candidates and recent graduates were with the dissertation process. The question was a 5 point Likert scale allowing respondents to express how satisfied or dissatisfied

they were with the dissertation process. Responses ranged from (1) “not at all satisfied” to (5) “completely satisfied”. The sample was collected using convenience sampling. Participants were randomly recruited from a number of universities across the United States offering doctoral degrees in educational psychology and asked to complete the online survey hosted by SurveyMonkey.

Summary of Major Findings

Respondents’ Demographic Characteristics

A total of 191 individuals attempted to complete the online survey. However, a number of 38 cases were eliminated due to large number of missing responses and other missing data from the remaining cases were replaced by the mean values of the corresponding variables. The final sample consisted of 153 participants who met the criteria of being doctoral candidates or recent graduates in educational psychology and its respective emphases. Seventy-five percent of participants were female. Participants ranged in age from 22 to 65, with a mean of 33.72. Sixty-five percent of the participants identified themselves as doctoral candidates at different stages in terms of dissertation status, and 35% of the participants graduate within the past 6 years from an Educational Psychology program.

The average time limit for completion reported by participants was 4.91 years, with 22.9% indicating that their respective universities required “no time limit.” Thirty percent of the participants reported being employed full time during the majority of their doctoral studies, while 40.5% reported being employed part time and 28.1% being unemployed. The majority of participants ($M = 3.75$) indicated being moderately secure financially during their doctoral studies, and receiving average emotional support ($M =$

3.27) from their advisor during the dissertation process. Respondents also indicated that they were ‘somewhat satisfied’ ($M = 3.27$) with the dissertation process.

Research Question 1

Conclusions and Discussion

Research question 1: What are the levels of self-efficacy, locus of control, perceived stress and satisfaction with the dissertation process among students in Educational Psychology?

1. Participants in this study reported high levels of self-efficacy with a mean score of 7.05 on a scale of 0 to 10.

In general, this finding aligns with Bandura’s (1986, 1997) theory that individuals with high self-efficacy are more likely to expend more effort and persist longer on a given task even when faced with obstacles and failures. What this finding suggests is that doctoral students with high levels of self-efficacy, who believe they have the ability to complete their dissertations, are more likely to make more progress on their dissertations. These findings are supported by the work of previous researchers such as Pintrich and Garcia (1991) who found that students with high self-efficacy who believed they were capable of performing academic tasks persisted longer on a given task and used more cognitive and metacognitive strategies than those who did not. Similarly, Schunk (1991) found that high self-efficacy individuals worked harder on accomplishing academic tasks and persisted longer when they encountered difficulties, while low self-efficacy individuals tended to quit or avoid a task. Along the same lines, Bandura (1993) indicated that individuals with low sense of self-efficacy would be more likely to give up when challenged by a difficult situation, while individuals with a high sense of self-efficacy

would be more likely to attempt different strategies or develop new ones. Other researchers such as Colvin (2012), Faghihi (1998), Harsch (2008) and Varney (2003, 2010) studied self-efficacy in doctoral students and found dissertation self-efficacy to be positively related to dissertation progress.

One way ANOVA indicated no differences in self-efficacy between males and females. However, the analysis of variance revealed a significant difference in self-efficacy between doctoral candidates and graduates, with graduates showing higher levels of self-efficacy than doctoral candidates. This finding supports Varney's (2003) hypothesis that higher levels of dissertation self-efficacy are associated with dissertation progress, and seems to be consistent with Harsch's (2008) work who found significant differences between completers and non-completers on the construct of dissertation self-efficacy. This may be also due to the fact that completers may have a tendency to report higher levels of dissertation self-efficacy because they have already finished the dissertation successfully and based on Bandura's (1984) theory, they already possess mastery experiences in dissertation completion. Besides, there might be other factors besides self-efficacy playing a potential role in dissertation completion, such as locus of control, perceived stress and satisfaction with the dissertation process.

2. Participants in this study reported low levels of shared responsibility with mean scores of 2.08 for current responsibility and 2.68 for should responsibility on a scale of 1 to 7. These findings suggest that the sample of this study believes that students rather than the institution should be in control and take responsibility for tasks associated with dissertation completion. According to Rotter (1966, 1975), individuals with a strong internal locus of control accept responsibility for the outcomes in their life and attribute

their success or failure to their own efforts and decisions, while individuals with an external locus of control tend to believe that outcomes in their lives are controlled by luck, circumstances, fate, or powerful others. The findings of this study are consistent with Rotter's theory and suggest that both doctoral candidates and graduates have high levels of internal locus of control since they believe that it is the student's responsibility to be in charge of the tasks associated with dissertation progress/completion. This finding is also consistent with McDermott's research (2002) who found that students with an internal locus of control were more likely to complete the doctoral degree than students with an external locus of control.

One way ANOVA indicated no significant differences in locus of control between males and females in the present study. This finding supports McDermott's (2002) study who found no sex differences in locus of control between completers and non-completers. However, this finding does not support prior studies which found differential effects of gender upon locus of control (Wagner, 1986; Wentzel, 1987).

The analysis of variance revealed no difference in locus of control between doctoral candidates and graduates. This finding supports Harsch's (2008) study who found no significant differences between completers and non-completers on locus of control. However, this finding is not consistent with Green and Kluever's (1998) research who found differences between students and graduates scores. More precisely, Green and Kluever (1998) found that students had higher ratings for 11 of the 16 "should be" items in the direction of university responsibility when compared with only 5 items indicated by graduates. However, students' means scores on all "locus of control current" 16 items were in the direction of student responsibility on all 16 items compared to the ratings of

graduates. This suggests that even though students recognize and accept that dissertation tasks are their responsibility, they tend to believe that more of the dissertation tasks should be university responsibilities.

3. Participants in this study reported moderate levels of perceived stress during the dissertation process with a mean score of 3 on a scale of 1-5.

Generally, studies have found stress to be inversely related to academic performance among traditional undergraduates (Felsten & Wilcox, 1992; Pritchard & Wilson, 2003). However, researchers such as Kaplan & Sadock (2000) have found that an optimal level of stress can enhance learning, and most of the studies on graduate students reported moderate to high levels of stress (Bedewy and Gabriel, 2015; Kaufman, 2006; Lazarus & Folkman, 1984; Myers et. al, 2012). Thus, the finding indicating that students reported moderate levels of stress is consistent with existing research.

One way ANOVA indicated no gender differences in perceived stress. Also, one way ANOVA reported no significant differences in perceived stress between doctoral candidates and graduates. This finding does not support McDermott's (2002) findings that doctoral candidates reported significantly higher levels of critical stress than graduates. This may be due to the fact that both groups in the current study indicated moderate levels of stress. Further study is needed to look at these differences.

4. Participants in this study reported moderate levels of satisfaction with the dissertation process with scores of 3.3 on a scale of 1 to 5. This finding is consistent with existing literature suggesting that doctoral students with higher levels of satisfaction with the doctoral program, courses/instruction, and advisor/faculty are more likely to complete

their dissertations and their doctoral programs (Faghihi et al., 1999; Lan and Williams, 2005; Lovitts, 1996, 2001, 2008; Mason, 2012; Muszynski, 1988).

One way ANOVA indicated no gender differences in student satisfaction with the dissertation process. However, the analysis of variance revealed significant differences in satisfaction between doctoral candidates and graduates, with graduates showing higher levels of satisfaction than doctoral candidates. An explanation for this finding might be that the satisfaction that students experience in their academic journeys may be traced to their personal experiences with the environmental factors such as their doctoral program, faculty and advisor. Also, student satisfaction may depend on personal levels of perceived efficacy, the challenges they face, and their belief in their own abilities (Pinugu, 2013).

In conclusion, participants in this study reported high levels of self-efficacy, low levels of shared responsibility indicating that participants believe that students rather than the institution should be in control for tasks associated with dissertation progress; and moderate levels of perceived stress and satisfaction with the dissertation process.

Research Question 2

Conclusions and Discussion

Research question 2: What is the relationship, if any, between scores of self-efficacy, locus of control, perceived stress, student satisfaction with the dissertation process and dissertation completion?

Path analysis was used to determine whether there were any relationships and interrelationships between the variables. Path analysis indicated that even though the original model was a good model, it could also be improved. Re-specification of the

model was undertaken and paths that were weak or non-significant were deleted. The revised model fit the data adequately, as indicated by the following criteria: Goodness of Fit Index ($GFI \geq .90$), Normed Fit Index ($NFI \geq .95$), Comparative Fit Index ($CFI \geq .95$), and Root Mean Square Error of Approximation ($RMSEA \leq .08$). Overall, the model accounted for 17% of the variance in dissertation progress/completion which can be explained primarily by the direct effects of self-efficacy, perceived stress and student satisfaction, and indirectly by locus of control.

The revised model fit my hypothesized model very well, and it also clarified the relationships between the variables. Self-efficacy, perceived stress and satisfaction have a direct effect on dissertation progress/completion, while locus of control has only an indirect effect on dissertation progress/completion. This indicates that locus of control does not affect dissertation progress/completion directly. This supports the research of Smith (1985), Wagner (1986) and Koiner (1992) who found that locus of control does not influence dissertation progress/completion, but it does not offer support to Wentzel's (1987) and McDermott's (2002) finding that locus of control is significantly related to completion of the doctoral dissertation/program. However, the model indicates that locus of control explains self-efficacy and has an indirect effect on dissertation progress/completion. This finding supports the research of Nowicki et al. (2004) and Tella, Tella and Adika (2008) who found a correlation between the joint relationship of self-efficacy and locus of control with academic achievement. This is also consistent with the findings of Phillips and Gully (1997), and Wood and Bandura (1989) who suggested that perceived environmental controllability is related to greater self-efficacy. Thus, it is expected that doctoral students with higher levels of personal responsibility or

internal locus of control will have higher self-efficacy and will be more likely to put in more effort and persist in the task of dissertation writing when they believe they have the ability to complete it successfully, even in the face of adversity. More specifically, this suggests that doctoral students who take personal responsibility for certain tasks (locating and acquiring relevant research materials relating to the dissertation topic, submitting a protection of human subjects application, and contacting experts whose background may contribute to the dissertation) will be more efficacious and will persist longer on specific dissertation tasks (select a suitable dissertation topic, write a review of the literature and synthesize the literature in the area of study, and formulate three dissertation questions) and thus complete their dissertations/programs.

An important finding of the current study is the direct positive relationship between self-efficacy and dissertation progress/completion, with self-efficacy being the most important predictor of dissertation progress/completion ($\beta = .29$) among all the variables. This suggests that self-efficacy plays a very important role in dissertation progress/completion. This finding supports previous research that has established a significant and positive correlation between self-efficacy and dissertation progress/completion (Faghihi, 1999; Colvin, 2012; Harsch, 2008; & Varney, 2003, 2010). This suggests that the more doctoral students believe in their ability to complete their dissertations, the more progress they make (Varney 2003, 2010).

The theory of self-efficacy, originally developed by Bandura (1977), offers good support as to why self-efficacy might be related to dissertation progress/completion. The more self-efficacy an individual has, the more effort and persistence he or she will put into reaching their goal, even in the face of adversity (Bandura, 1997). Thus, it is implied

that a doctoral student with high self-efficacy would be more likely to believe in his/her ability to complete their dissertations and would put a great deal of effort into progressing on the dissertation even when the task is difficult.

The model also indicates that seventeen percent (17%) of the variance in self-efficacy can be explained by the direct effects of perceived stress and locus of control. This suggests that the more stressed doctoral students are and the less personal responsibility they take toward specific dissertation tasks, the less self-efficacious they are and the less they believe they have the ability to do specific dissertation tasks. More specifically, doctoral students' beliefs in their ability to perform specific dissertation tasks (select a suitable dissertation topic, write a review of the literature, review and synthesize the scholarly literature in their area of study, and formulate the required research questions or statements) will be negatively affected if they have difficulty controlling stressors in their lives (personal life stress, personal difficulties, feelings of anger and nervousness because of things outside of their control) and if they don't take personal responsibility toward specific dissertation tasks (locating and acquiring relevant research materials relating to the dissertation topic, submitting a protection of human rights subjects application, and contacting experts whose background may contribute to the dissertation).

Another significant correlation indicated by the model is the positive relationship between satisfaction with the dissertation process and dissertation progress/completion, with satisfaction being the second most important predictor in my model for dissertation progress/completion ($\beta = .26$). This suggests that satisfaction plays an important role in the dissertation progress, and that students who report greater satisfaction are more likely

to make good progress on their dissertation and complete their program. This finding supports previous research which established that student satisfaction with the academic program (Lovitts, 1996) and with the relationship with the faculty and advisor (Lovitts, 2001, 2008; Muszynski, 1988) contributed favorably to dissertation and doctoral degree completion (Faghihi et al., 1999; Lovitts, 2001).

Twenty-three percent (23%) of variance in satisfaction with the dissertation process can be explained primarily by the direct effects of self-efficacy and perceived stress. This suggests that doctoral students who report greater levels of self-efficacy ($\beta = .27$) and lower or optimal levels of stress ($\beta = -.32$) are more likely to be satisfied with the dissertation process and complete their dissertations/programs ($\beta = .26$). Efficacy has been found to be a major predictor of academic satisfaction, and this finding is consistent with the findings of Ojeda, Flores, & Navarro (2011) and Pinugu (2013) who found self-efficacy to be directly linked to academic satisfaction. Thus, the more an individual perceives himself as capable in addressing specific dissertation tasks, the higher the satisfaction and the more positive his perception toward academic experiences will be. At the same time, higher levels of stress have been associated with lower levels of academic satisfaction (Pinugu, 2013). The combined effects of stress and self-efficacy on satisfaction were studied (Pinugu, 2013) and it has been indicated that self-efficacy and academic stress can predict academic satisfaction. Thus, the finding in this study that satisfaction can be explained by higher levels of self-efficacy and lower levels of stress is consistent with the findings of Pinugu (2013). More specifically, the more confident doctoral students are in their ability to perform specific dissertation tasks (to select a suitable dissertation topic, write a review of the literature and synthesize the literature in

the area of study, and formulate the dissertation questions), and the more they can control stressors in their lives (personal life stress, personal difficulties, feelings of anger and nervousness because of things outside of their control) the more satisfied they will be with the dissertation process.

In summary, the findings from research question two highlight the importance of dissertation self-efficacy and satisfaction with the dissertation progress, as well as locus of control and perceived stress in dissertation progress. Based on these findings, a doctoral student will be more likely to be successful during the dissertation process and complete the doctoral program if a) he/she believes that he/she believe he/she has the ability to do certain dissertation tasks and complete the program; b) he/she takes personal responsibility for the dissertation tasks involved; c) he/she controls their stress and perceive it as a challenge rather than a threat, and d) he/she is satisfied with the dissertation process.

Importance and Significance of Study

Prior research mainly studied the individual influence of self-efficacy, locus of control, perceived stress, and student satisfaction with the dissertation process on dissertation completion. However, the current study was the first of its kind to investigate the joined relationship between these variables and dissertation/program completion in educational psychology students in particular, and it also added to existing literature.

The findings of this study suggest that in order to increase dissertation/program completion and reduce attrition, it is vital that doctoral candidates as well as advisors and administrators understand the importance of the direct and indirect relationships between

these variables and all the implications. High levels of dissertation self-efficacy, low levels of shared responsibility, moderate or optimal levels of stress, and moderate levels of student satisfaction with the dissertation process could enhance program completion of educational psychology doctoral students. Specifically, both the students and the institutions should focus on increasing doctoral candidates' dissertation self-efficacy, establishing who is responsible for each task involved in the dissertation process, maintaining moderate or optimal levels of stress and reducing high stress when necessary, and also increasing student satisfaction with the dissertation process by maintaining program quality and encouraging positive and supportive student - advisor relationships.

Limitations

Results of this study will be constrained by the specificity of the convenience sample utilized - doctoral students in Educational Psychology programs from the selected universities across the United States. Thus, results could be generalized to other doctoral programs in Educational Psychology of similar/comparable program structure, but beyond this, care should be taken in regards to the population to which these findings are generalized.

A second limitation of this study was the low number of participants in spite of the large number of universities which participated in the study. The majority of the nationwide universities which offer Educational Psychology programs tend to accept only a limited number of students, 5-10 students per year, with about half of them being at the dissertation stage.

A third limitation of this study is the use of only one straight forward question to measure doctoral students' satisfaction with the dissertation process. A more in depth measure would be helpful to understand the different areas of satisfaction and how they interrelate.

A fourth limitation of this study could be that some of the participants who had already completed their dissertations or those who had been ABD for a long period of time had to retrospectively recall their dissertation experience and selective memory may influence their reporting of their perceptions of self-efficacy, locus of control, perceived stress and satisfaction with the dissertation process.

Lastly, as a descriptive correlational study, no causality was implied between or among the variables.

Implications for Practice

Based on the current study, there are a few recommendations and implication for practice that could be made.

The findings indicating that dissertation self-efficacy and satisfaction with the dissertation process directly and positively impact dissertation progress suggests that the student and the institution should collaborate to increase doctoral candidates' levels of self-efficacy (in addition to doctoral candidates' necessary skills and knowledge) and satisfaction with the dissertation progress (program quality, adequate instruction, positive and supportive relationship with the advisor). The implications for dissertation progress and program completion could be: providing doctoral candidates with opportunities for mastery experiences and using verbal persuasion methods to raise competence and confidence. According to Bandura (1997), efficacy beliefs influence the level of

accomplishment individuals attain based on the choices they make, how much effort they will expend on given tasks, how they will respond to stress and how long they will persevere in the face of adversity.

Path analysis used to assess the relationship between self-efficacy and dissertation progress/completion, suggests three major factors which could influence self-efficacy levels: selection of a suitable dissertation topic; ability to write a review of the literature, review and synthesize the scholarly literature in the area of study; and ability to formulate dissertation research questions. According to Varney (2003), these factors fall into three categories: dissertation design skills, practical research skills and data analysis skills. An accurate assessment of research and writing self-efficacy may also be helpful for faculty and dissertation advisors in identifying doctoral candidates' strengths and weaknesses regarding dissertation research and mentoring them through the dissertation research process (Kahn, 2001).

The present study investigated student satisfaction with the dissertation process in general and indicated that moderate levels of satisfaction have a positive and direct effect on dissertation completion. Prior research indicated that doctoral students who were satisfied with quality of their programs, the quality of instruction, and their relationships with their advisors, were more likely to make progress on their dissertation and complete their degrees. This suggests that universities should strive to maintain high quality of their programs and instruction, and advisors should consider maintaining positive and supportive relationships when assisting doctoral candidates in their dissertation process. Faghihi (1998) indicated that advisee's relationship with their dissertation advisors was significantly related to the advisee's dissertation progress. Also, graduate program

directors and administrators could check with their students annually to assess the students' feelings of satisfaction with their respective programs and advisors.

Additionally, the findings regarding the negative relationship between perceived stress and dissertation completion suggests that universities and advisors might be able to provide support and recommendations to students on how they could maintain optimal levels of stress and reduce negative stress (personal life stress, personal difficulties, feelings of anger and nervousness because of things outside of their control). Advisors could monitor doctoral students with high levels of stress and anxiety, and provide them with support and resources. Given the relationship between self-efficacy and perceived stress with student satisfaction with the dissertation process, universities should also offer programs and services that would enhance self-efficacy of students and lessen their academic stress in order to guarantee their academic satisfaction (Pinugu, 2013).

A positive indirect relationship between locus of control and dissertation progress/completion has been indicated by the structural equation model of this study. The findings suggest that doctoral students with higher levels of internal locus of control, who take personal responsibility for certain dissertation tasks (locating and acquiring relevant research materials relating to the dissertation topic, submitting a protection of human subjects application, and contacting experts whose background may contribute to the dissertation), will be more efficacious and will persist longer on specific dissertation tasks and thus complete their dissertations/programs. Kluever and Green (1998) suggest that during the dissertation there are two parties involved in the process, the student and the university, even though some tasks require joined responsibilities. These authors

suggest that an agreement should exist between the student and the dissertation advisor in order to know who is responsible for each task involved in the dissertation process.

Implications for Future Research

The findings of this study suggest that self-efficacy plays a very important role in dissertation progress/completion. As also indicated by Colvin (2012), Harsch (2008) and Varney (2003, 2010), the current study investigated the concept of self-efficacy in doctoral candidates and recent graduates at a certain point in time, but not in a longitudinal manner. Future research could focus on the longitudinal aspects of dissertation self-efficacy and how acquired general self-efficacy influences and transfers to the dissertation process. According to Bandura (1997), self-efficacy can shift over time and possibly increase or decrease in specific situations depending on task difficulty and on previously acquired mastery experiences.

Another important finding of this study was the importance of satisfaction with the dissertation process on dissertation progress/completion. The current study investigated doctoral student satisfaction with the dissertation process in general, and the results indicated moderate levels of satisfaction. Future research should investigate the concept of doctoral student satisfaction with the dissertation process more in depth, and possibly indicate what level of student satisfaction is needed to support dissertation progress/completion for the tasks involved. Moreover, there appears to be different types of doctoral satisfaction (e.g. with the program, instruction, faculty, advisor) and it would be helpful to understand how these types of satisfaction interrelate. Lastly, the concept of student satisfaction with the dissertation process would benefit from qualitative research (students' thoughts, feelings, behaviors) in order to shed more light on the impact of the

different factors involved in students' satisfaction which ultimately play a central role in dissertation/program completion.

The current study has found an indirect relationship between locus of control and dissertation completion through self-efficacy. Previous research is indecisive regarding the role of locus of control on academic achievement in general in adult populations and dissertation outcomes in particular. Additional research should particularly focus on the combined influence of locus of control and self-efficacy on dissertation completion and the influence of these two variables on doctoral students' dissertation progress.

Future research could also investigate simultaneously students and their respective advisors' self-efficacy, locus of control, perceived stress and satisfaction with the dissertation process to better understand how both perspectives may impact dissertation progress and program completion. Also, longitudinal studies on larger samples conducted at the same stage of their studies would greatly expand the knowledge base and understanding of how the importance of these variables changes throughout the doctoral program.

APPENDIX A
IRB APPROVAL LETTER

June 19, 2015

Alina Gabriela Dumirescu
Email: gabriela@andrews.edu

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS
IRB Protocol #: 15-088 **Application Type:** Original **Dept.:** Graduate Psychology & Counseling
Review Category: Expedited **Action Taken:** Approved **Advisor:** Elvin Gabriel
Title: Self-efficacy, locus of control, and perceived stress as correlates of dissertation completion.


This letter is to advise you that the Institutional Review Board (IRB) has reviewed and approved your IRB application of research involving human subjects entitled: "*Self-efficacy, locus of control, and perceived stress as correlates of dissertation completion*" IRB protocol number 15-088 under Expedited category. This approval is valid until June 19, 2016. If your research is not completed by the end of this period you must apply for an extension at least four weeks prior to the expiration date. We ask that you inform IRB whenever you complete your research. Please reference the protocol number in future correspondence regarding this study.

Any future changes (see IRB Handbook pages 10-11) made to the study design and/or consent form require prior approval from the IRB before such changes can be implemented. Please use the attached report form to request for modifications, extension and completion of your study.

While there appears to be no more than minimum risk with your study, should an incidence occur that results in a research-related adverse reaction and/or physical injury, (see IRB Handbook page 11) this must be reported immediately in writing to the IRB. Any project-related physical injury must also be reported immediately to the University physician, Dr. Reichert, by calling (269) 473-2222. Please feel free to contact our office if you have questions.

Best wishes in your research.

Sincerely



Mordekai Ongo
Research Integrity & Compliance Officer

Institutional Review Board - 4150 Administration Dr Room 322 - Berrien Springs, MI 49104-0355
Tel: (269) 471-6361 Fax: (269) 471-6543 E-mail: irb@andrews.edu

APPENDIX B

SURVEY INVITATION

SURVEY INVITATION

Date:

Dear Department Chair/Program Coordinator,

My name is Gabriela Dumitrescu. I am a PhD candidate in Educational Psychology at Andrews University and I need to collect data for my dissertation. The purpose of my dissertation is to determine the relationship between self-efficacy, locus of control and perceived stress, and dissertation completion among Psychology doctoral students. I need to collect data from **150 PhD/EdD candidates** (who have successfully completed their required coursework and comprehensive exams and are currently working on their dissertations) and **150 PhD/EdD graduates** (who have completed their degrees in Psychology within the last 5 years) with emphases in either (general educational psychology, developmental psychology or human development, school psychology, cognition & development, special education, and psychometric methods).

The reason for this email is to ask your help in inviting your PhD/EdD candidates and PhD/EdD graduates in the field of Psychology (cognitive psychology and quantitative measures) to complete my anonymous online survey at <https://www.surveymonkey.com/r/XHRM3ZS>. Please let me know if you would be willing to send an email to potential respondents. The survey will take approximately 15 minutes to complete. Information pertaining to participants' demographics (excluding their names, and contact information), self-efficacy, locus of control and perceived stress will be collected. Participants will not be required to provide the name of the university where they are enrolled.

I have included a sample email invitation if you would be willing to invite your students to participate in this study. Feel free to use the included sample or create your own. I would greatly appreciate it if you could reply to this email to let me know about your willingness to invite potential participants. If you have any questions or concerns regarding this study or about the survey, please feel free to contact me via email at gabriela@andrews.edu or my advisor, Dr. Elvin Gabriel, at gabriel@andrews.edu, or call 269-471-6223.

Thank you so much for your time and help in distributing this survey to your students. Your help is greatly appreciated.

Gabriela Dumitrescu

Sample email for potential participants:

As part of her dissertation, Gabriela Dumitrescu is interested in collecting information about potential factors influencing dissertation completion. The purpose of her study is to determine the role of self-efficacy, locus of control and perceived stress on dissertation completion. She anticipates that the results will provide suggestions for decreasing doctoral attrition and increasing dissertation completion rates.

If you are a **PhD/EdD candidate in the field of Psychology** with emphases in either general educational psychology, developmental psychology or human development, school psychology, **cognition & development**, special education, or **psychometric methods**, and have completed your coursework and comprehensive exams and are working on your dissertation, you are invited to participate in this study <https://www.surveymonkey.com/r/XHRM3ZS>.

If you are a **PhD/EdD graduate** and have completed your degree within the past 5 years in the field of Psychology with emphases in (general educational psychology, developmental psychology or human development, school psychology, **cognition & development**, special education, and **psychometric methods**) you are also invited to participate and complete the 15-minute survey at <https://www.surveymonkey.com/r/XHRM3ZS>. After completing the survey you can participate in a random gift card drawing of \$25.00. Also, if you know other PhD/EdD candidates or PhD/EdD graduates in the field of Psychology, please forward them this survey invitation in order to have as many respondents as possible.

Thank you in advance for your participation.
Gabriela Dumitrescu

APPENDIX C
INFORMED CONSENT

Andrews  University
School of Education

INFORMED CONSENT FORM

I am a doctoral student at Andrews University and I am conducting research about potential factors influencing dissertation completion. Your participation will be of great value to the completion of this study.

If you are a PhD candidate in the field of Educational Psychology (general educational psychology, developmental psychology, school psychology, cognition & development, special education, and psychometric methods) and have completed your comprehensive exams and are working on your dissertation, you are invited to participate in this study.

If you are a PhD graduate and have completed your degree within the past 5 years in the field of Educational Psychology (general educational psychology, developmental psychology, school psychology, cognition & development, special education, and psychometric methods) you are also invited to participate in this study.

Also, if you know other PhD candidates or PhD graduates in the field of Educational Psychology please forward them this survey invitation in order to have as many respondents are possible.

The questionnaire can be accessed at <https://www.surveymonkey.com> and it will take about 15 minutes to complete. The purpose of the questionnaire is to determine the role of self-efficacy, locus of control and perceived stress on dissertation completion. I anticipate the results to provide suggestions for decreasing doctoral attrition and increasing dissertation completion rates.

Your scale packet is coded to allow for possible follow-ups only, as well as the drawing for \$25 amazon gift cards. Your responses will be kept strictly confidential. Your participation is voluntary. By completing and returning the questionnaire you are giving your consent to participate in this study.

Please take a few minutes to complete the questionnaire by July 1, 2015. If you would like any information about my dissertation or the results of the data, please contact me at gabriela@andrews.edu or my dissertation chair, Dr. Elvin Gabriel at gabriel@andrews.edu.

Thank you in advance for taking the time to assist in a fellow doctoral student.

Gabriela Dumitrescu
Andrews University Doctoral Student

APPENDIX D
SURVEY

SURVEY COVER LETTER

About the survey

You are invited to participate in a research study. The purpose of this study is to determine the role of self-efficacy, locus of control, and perceived stress on dissertation completion. I anticipate the results to provide suggestions for decreasing doctoral attrition and increasing dissertation completion rates.

This survey has four sections and is expected to take 10-15 minutes to complete. To participate in this study, you must be a PhD/EdD candidate (completed all course requirements BUT dissertation) in the field of Educational Psychology (general educational psychology, human development or developmental psychology, cognitive psychology, behavioral neuroscience, learning and behavior, school psychology, special education, psychometric methods) or a PhD/EdD graduate who has completed a degree in Educational Psychology within the last 5 years.

We do not anticipate any risks associated with this study. Your responses will be kept strictly confidential. No identifiable information about you will be collected. However, if you would like to be eligible to participate in the random gift card drawing for a \$25 gift card, you will be asked to provide your email address at the end of the survey.

If you have questions at any time about the study or the procedures, you may contact the researcher, Gabriela Dumitrescu at 269-471-6223, gabriela@andrews.edu, or Dr Elvin Gabriel at 269-471-6223, gabriel@andrews.edu.

Your participation in this study is voluntary; you may refuse to participate without penalty.

Informed Consent:

By checking this box, I am indicating that I am voluntarily participating in this study. I understand that the information gathered in this study will be kept completely confidential and that no references will be made in written or oral materials that could link me personally to this study.

SURVEY

1. In what year were you born? (enter 4-digit birth year; for example, 1976)

2. What is your gender?

- Female
 Male

3. What is your current residence status?

- On campus
 Off campus/community

- Out of state
 - Out of the country
4. Which of the following best describe the emphasis of your doctoral program in educational psychology?
- General Educational Psychology
 - Human Development
 - Developmental Psychology
 - Cognitive Psychology
 - Behavioral Psychology
 - Learning and Behavior
 - School Psychology
 - Special Education
 - Psychometric Methods
 - Research and Evaluation
 - Other Psychology Emphasis _____
5. Which statement most accurately describes your employment status during the majority of your doctoral studies?
- Employed full time
 - Employed part time
 - Not employed
6. Which best describes your current status in your doctoral program?
- Still doing course work
 - Completed required coursework
 - Preparing to take comprehensive exams
 - Completed comprehensive exams
 - Writing dissertation proposal
 - Dissertation proposal approved
 - On leave, but planning to return soon
 - Withdrew from the program and have no plans to return
 - Received my doctoral degree (indicate what year) _____
7. Which best describes your current dissertation status?
- Deciding upon a topic
 - Writing the chapters for proposal
 - Proposal approved, not collecting data
 - Proposal approved, collecting data
 - Analyzing data
 - Writing the final dissertation chapters
 - Successfully defended the dissertation
 - Dissertation submitted and approved by Graduate Services office

8. Please provide the month and year you reached All But Dissertation (ABD) status (e.g. completion of all program requirements except the dissertation)

Month _____ Year _____

9. Rate to what degree you are/were financially secure during the dissertation process.

- Not at all secure
- Minimally secure
- Somewhat secure
- Moderately secure
- Completely secure

10. Rate the degree of emotional support you receive/received from your dissertation advisor during the dissertation process.

- None
- Below average
- Average
- Above average
- Exceptional

11. How would you describe the structural tasks involved in the dissertation process?

5	4	3	2	1	0
Completely Overwhelming	Moderately Overwhelming	Somewhat Overwhelming	Minimally Overwhelming	Not at all Overwhelming	Does not apply

- Choosing the topic
- Selecting your committee
- Writing the proposal
- Getting institutional review board approval
- Collecting the literature review
- Collecting the data
- Analyzing the data
- Writing the chapters
- Defending the dissertation

12. How satisfied are/were you with the dissertation process?

- Not at all satisfied
- Minimally satisfied
- Somewhat satisfied
- Moderately satisfied
- Completely satisfied

13. From date of admission, what is the time limit in completing the doctoral program at your university or academic institution?

- 4 years
- 5 years
- 6 years
- 7 years
- 8 years
- 9 years
- 10 years
- Not time limit

14. During your program certain critical stressful events may have occurred. To what extent is the following affecting or has affected the completion of your doctoral program?

1 No Influence 2 3 4 5 6 Great Influence

- Family/marital problems
- Family health problems
- Personal health problems
- Pregnancy in family
- Financial problems
- Work pressures
- Academic pressures
- General discouragement
- Required comprehensive examinations
- Program time requirements
- Other please specify _____

15. Each task below is related to successfully writing a dissertation. Rate how confident you are in your ability to successfully accomplish each of the following tasks.

0 No Confidence At all 1 2 3 4 5 6 7 8 9 10 Complete Confidence

1. Select a suitable dissertation topic for study.
2. Effectively select the appropriate statistical methodology or qualitative analysis to answer your research question.
3. Write the Introduction for the dissertation proposal.
4. Effectively run/apply the appropriate statistical or qualitative analyses to answer your research question.
5. Write the Discussion section for the dissertation.
6. Collect adequate dissertation data records or field notes.
7. Select an appropriate research design for your dissertation.

8. In order to effectively write a Review of the Literature, review and synthesize the scholarly literature in your area of study.
 9. Obtain assistance from other researchers in your topic area.
 10. Write the Methodology section of the proposal.
 11. Write the Results section of the dissertation.
 12. Effectively work with your doctoral committee/chair/mentor for needed help and support.
 13. Effectively interpret the results obtained from statistical analyses (quantitative) or content analyses (qualitative)
 14. Effectively use simple quantitative statistics (eg., frequency distribution, correlation, t-test, etc.) or simple qualitative analysis such as coding.
 15. Formulate a dissertation research question or statement.
 16. Operationalize dissertation variables and/or questions.
16. For each of the following dissertation tasks, indicate your impression of the CURRENT state where responsibility rests.

1	2	3	4	5	6	7
Student						University

1. Responsibility for progression through the dissertation.
2. Responsibility for scheduling student-advisor meetings.
3. Responsibility for locating and acquiring relevant research materials relating to the dissertation topic.
4. Responsibility for selecting a dissertation topic.
5. Responsibility for submitting a protection of human subjects application.
6. Responsibility for filling documents for graduation with the university graduate office.
7. Responsibility for locating subjects (or sources) to provide data for the study.
8. Responsibility for analyzing the dissertation data.
9. Responsibility for analyzing the dissertation data.
10. Responsibility for interpreting the data.
11. Responsibility for writing the chapters for the dissertation.
12. Responsibility for evaluating the presentation style of the chapters.
13. Responsibility for contacting experts whose background may contribute to the dissertation.
14. Responsibility for scheduling the pace and time for completing the dissertation.
15. Responsibility for evaluating the content of the dissertation.
16. Responsibility for developing research tools (computer, library, etc).

17. For each of the following dissertation tasks, indicate your impression of the SHOULD state where responsibility rests.

1 Student 2 3 4 5 6 7 University

1. Responsibility for progression through the dissertation.
2. Responsibility for scheduling student-advisor meetings.
3. Responsibility for locating and acquiring relevant research materials relating to the dissertation topic.
4. Responsibility for selecting a dissertation topic.
5. Responsibility for submitting a protection of human subjects application.
6. Responsibility for filling documents for graduation with the university graduate office.
7. Responsibility for locating subjects (or sources) to provide data for the study.
8. Responsibility for analyzing the dissertation data.
9. Responsibility for analyzing the dissertation data.
10. Responsibility for interpreting the data.
11. Responsibility for writing the chapters for the dissertation.
12. Responsibility for evaluating the presentation style of the chapters.
13. Responsibility for contacting experts whose background may contribute to the dissertation.
14. Responsibility for scheduling the pace and time for completing the dissertation.
15. Responsibility for evaluating the content of the dissertation.
16. Responsibility for developing research tools (computer, library, etc).
17. Responsibility for scheduling the pace and time for completing the dissertation.
18. Responsibility for evaluating the content of the dissertation.
19. Responsibility for developing research tools (computer, library, etc).

18. The questions on this page ask you about your feelings and thoughts during your dissertation process. In each case, you will be asked to indicate how often you felt or thought a certain way.

1 Never 2 Almost never 3 Sometimes 4 Fairly often 5 Very often

1. During the dissertation process, how often have you been upset because of something that happened unexpectedly?
2. During the dissertation process, how often have you felt that you were unable to control the important things in your life?
3. During the dissertation process, how often have you felt nervous and stressed?
4. During the dissertation process, how often have you felt confident about your ability to handle your personal problems?
5. During the dissertation process, how often have you felt that things were going your way?

6. During the dissertation process, how often have you found that you could not cope with all the things that you had to do?
7. During the dissertation process, how often have you been able to control irritations in your life?
8. During the dissertation process, how often have you felt that you were on top of things?
9. During the dissertation process, how often have you been angered because of things that were outside of your control?
10. During the dissertation process, how often have you felt difficulties were piling up so high that you could not overcome them?

REFERENCE LIST

- Adams, A. (2014). *Who was the first African American to earn a Ph.D.?* Retrieved from http://www.ehow.com/about_4705002_first-african-american-earn-phd.html.
- Agolla, J. E. & Ongori, H. (2009). An assessment of academic stress among undergraduate students: The case of University of Botswana. *Educational Research and Review*, 4(2), 63-70.
- Aguinis, H., Nestler, M. S., Quigley, B. M., Lee, S. J., & Tedeschi, J. T. (1996). Power bases of faculty supervisors and educational outcomes for graduate studies. *Journal of Higher Education*, 67, 267-297.
- Ali, A. & Kohun, F. (2007). Dealing with social isolation to minimize doctoral attrition: A four stage framework. *International Journal of Doctoral Studies*, 2, 33-49.
- American Psychological Association (2015). *Stress in America: Paying with our health*. Retrieved from <http://www.apa.org/news/press/releases/stress/2014/stress-report.pdf>.
- Amirkhan, J. H. (1998). Attributions as predictors of coping and distress. *Personality and Social Psychology Bulletin*, 24(9), 1006-1018.
- Anderson, A., Hattie, J., & Hamilton, R. (2005). Locus of control, self-efficacy and motivation in different schools: Is moderation the key to success? *Educational Psychology*, 25(5), 517-535.
- Anderson, C. R. (1977). Locus of control, coping behaviors, and performance in a stress setting: A longitudinal study. *Journal of Applied Psychology*, 62, 446-451.
- Ashton, P. T. & Webb, R. B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement*. New York, NY: Longman.
- Astin, A., Korn, W., & Green, K. (1987). Retaining and satisfying students. *Educational Record*, 68, 36-42.
- Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. *Psychological Bulletin*, 80, 286-303.

- Bailey, B. L., Bauman, C., & Lata, K. (1998). *Student retention and satisfaction: The evolution of a predictive model*. Paper presented at the 1998 Annual Forum of the Association for Institutional Research, Minneapolis, MN. (ERIC Document Reproduction Service No. ED 424797).
- Bair, C. R. & Haworth, J. G. (1999). *Doctoral student attrition and persistence: Meta-synthesis of research*. Paper presentation at the Annual Meeting of the Association for the Study of Higher Education, San Antonio, TX. Retrieved from <http://files.eric.ed.gov/fulltext/ED437008.pdf>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122-147.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148.
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (vol.4, pp. 71-81). New York, NY: Academic Press. Retrieved from <http://www.uky.edu/~eushe2/Bandura/BanEncy.html>
- Bandura, A. (1995). *Self-efficacy in changing societies*. New York, NY: Cambridge University Press.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Bandura, A. (2005). Evolution of social cognitive theory. In K. G. Smith & M. A. Hitts (Eds.), *Great minds in management* (pp. 9-35). Oxford, UK: Oxford University Press.
- Bard, C. C., Bieschke, K. J., Herbert, J. T., & Eberz, A. B. (2000). Predicting research interest among rehabilitation counseling students and faculty. *Rehabilitation Counseling Bulletin*, 44(1), 48-55.
- Bar-Tal, D. & Bar-Zohar, Y. (1977). The relationship between perception of locus of control and academic achievement: Review and some educational implications. *Contemporary Education Psychology*, 2, 181-199.

- Bedewy, D. & Gabriel, A. (2015). Examining perceptions of academic stress and its sources among university students: The perceptions of academic stress scale. *Health Psychology Open*, 2(2).
- Benesek, J. P. (1998). *Stress and coping among psychology doctoral students: A comparison of self-reported stress levels and coping styles of PhD and PsyD students*. PhD Dissertation. Available from ProQuest Dissertations and Theses. (UMI No. 9839566).
- Benight, C. C. & Bandura, A. (2004). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behavior Research and Therapy*, 42, 1129-1148.
- Berger, J. (2007). Exploring ways to shorten the ascent to a Ph.D. *The New York Times*, October 3, p. B9. Retrieved from http://www.nytimes.com/2007/10/03/education/03education.html?_r=1&em&ex=1191643200&en=2438decafe04c4d8&ei=5087.
- Bergvik, S., Sorlie, T., & Wynn, R. (2012). Coronary patients who returned to work had stronger internal locus of control beliefs than those who did not return to work. *British Journal of Health Psychology*, 17(3), 596-608.
- Bernardi, R. A. (1997). The relationship among locus of control, perceptions of stress, and performance. *Journal of Applied Business Research*, 13(4), 1-9.
- Berry, J. M. (1999). Memory self-efficacy in its social cognitive context. In Thomas M. Hess and Fredda Blanchard-Fields (Eds), *In Social Cognition and Aging* (pp. 69-96). San Diego: Academic Press.
- Bieschke, K. J. (2006). Research self-efficacy beliefs and research outcome expectations: Implications for developing scientifically minded psychologists. *Journal of Career Assessment*, 15(3), 367-387.
- Bishop, R. M. & Bieschke, K. J. (1998). Applying social cognitive theory to interest in research among counseling psychology doctoral students: A path analysis. *Journal of Counseling Psychology*, 45, 182-188.
- Bisht, A. R. (1989). *Predictors of student stresses*. City, ST/Country: Bhargava Book House.
- Bloom, J. L., Propost Cuevas, A. E., Hall, J. W., & Evans, C. V. (2007). Graduate students' perceptions of outstanding graduate advisor characteristics. *NACADA Journal*, 27(2), 28-35.

- Blum, L. D. (2010). "The All-But-the-Dissertation" student and the psychology of the doctoral dissertation. *Journal of College Student Psychotherapy*, 24(2), 74-85.
- Bourner, T., Bowden, R., & Laing, S. (2001). Professional doctorates: The development of researching professionals. In Bourner, Katz, & Watson (Eds.), *New directions in professional education* (pp. 226-237). Buckingham, UK: Open University Press.
- Bowen, W. G. & Rudenstine, N. L. (1992). *In pursuit of the Ph.D.* Princeton, NJ: Princeton University Press.
- Bowman, R. L. & Bowman, V. E. (1990). Mentoring in a graduate counseling program: Students helping students. *Counselor Education and Supervision*, 30, 58-60.
- Bridgmon, K. (2007). *All but dissertation stress among counseling and clinical psychology students*. Available from ProQuest Dissertations and Theses. (UMI No. 3257723).
- Britner, S. L. & Pajares, F. (2006). Sources of science self-efficacy beliefs of middle school students. *Journal of Research in Science Teaching*, 43(5), 485-499.
- Brosschot, J. F., Godaert, G., Benschop, R., Olf, M., Ballieux, R., & Heijnen, C. (1998). Experimental stress and immunological reactivity: A close look. *Psychosomatic Medicine*, 60(3), 359-361.
- Brown, C., Garavalis, L. S., Fritts, M. L. H., & Olson, E. A. (2006). Computer science majors: Sex role orientation, academic achievement, and social cognitive factors. *The Career Development Quarterly*, 54(4), 331-345.
- Campbell, R. L. & Stevenson, L. W. (1992). Perceived level of stress among university undergraduate students in Edmonton, Canada. *Perceptual and Motor Skills*, 75(2), 552-554.
- Cannon, W. B. (1939). *The wisdom of the body* (2nd ed.). New York, NY: W. W. Simon.
- Cash, T. F. & Sanches-Huches, J. (1992). The dissertation in professional psychology programs. Model and evaluation of preparatory course. Part 2. *Professional Psychology: Research Practices*, 23(1), 63-65.
- Chemers, M. M., Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55-64.
- Choi, W. (2013). The effects of self-efficacy and internal locus of control on academic performance of college students: The moderating role of class satisfaction. *Journal of Convergence Information Technology*, 8(12), 391-396.

- Choi, Y. B., Abbott, T. A., Arthur, M. A., & Hill, D. (2007). Towards a future wireless classroom paradigm. *International Journal of Innovation and Learning*, 4(1), 14-25.
- Cincirelli, V. G. (1980). Relationship of family background variables to locus of control in the elderly. *Journal of Gerontology*, 35, 108-114.
- Civitci, A. (2015). Perceived stress and life satisfaction in college students: Belonging and extracurricular participation as moderators. *Procedia – Social and Behavioral Sciences*, 205, 271-281.
- Coffman, D. L. & Gilligan, T. D. (2002). Social support, stress, and self-efficacy: Effects on students' satisfaction. *College Student Retention*, 4, 53-66.
- Cohen, S. (1980). Aftereffects of stress on human performance and social behavior: A review of research and theory. *Psychological Bulletin*, 88, 82-108.
- Cohen, S., Kamarck, T., & Mermeistein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.
- Cohen, S. & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In E. H. Lee, Review of the psychometric evidence of the perceived stress scale, *Asian Nursing Research*, 6(2012), 121-127.
- Cohn, E. & Rossmiller, E. (1987). Research on effective schools: Implications for less developed countries. *Contemporary Education Review*, 31, 377-399.
- Cole, J. R. (2012). *The great American University: Its rise to preeminence, its indispensable national role, why it must be protected*. New York, NY: Public Affairs.
- Colvin, T. S. (2012). *The role of academic help-seeking attitudes, achievement goal orientations, and dissertation self-efficacy in dissertation progress*. PhD Dissertation. Available from ProQuest Dissertations and Theses. (UMI No. 3570945).
- Cooke, D. K, Sims, R. L., & Peyrefitte, J. (1995). The relationship between graduate student attitudes and attrition. *Journal of Psychology*, 129(6), 677-689.
- Council of Graduate Schools and Educational Testing Service (2010). *The path forward: The future of graduate education in the United States*. Report from the Commission on the Future of Graduate Education in the United States. Princeton, NJ: Educational Testing Service.

- Crandall, V. C., Katkovsky, W., & Crandall, V. J. (1965). Children's beliefs in their own control of reinforcement in intellectual – academic achievement situations. *Child Development, 36*, 91-109.
- D'Andrea, L. M. (2002). Obstacles to completion of the doctoral degree in colleges of education: The professors' perspective. *Educational Research Quarterly, 25*, 42-58.
- DeWitz, S. J. & Walsh, B. W. (2002). Self-efficacy and college student satisfaction. *Journal of Career Assessment, 10*, 315-326.
- DeWitz, S. J., Woolsey, L. M., & Walsh, B. W. (2009). College student retention: An exploration of the relationship between self-efficacy beliefs and purpose of life among college students. *Journal of College Students Development, 50*(1), 19-34.
- Dinçyürek, S., Güneşli, A., & Çağlar, M. (2012). The Relation between assertiveness levels, locus of control and academic success of Turkish language teacher candidates. *Sociology Mind, 2*(1), 61-66.
- Downey, G. & Moen P. (1987). Personal efficacy, income and family transitions: A longitudinal study of women heading households. *Journal of Health and Social Behavior, 28*, 320-333.
- Ducette, M. O. (1990). Variables influencing doctoral student graduation: a path analytic test of Tinto's process model. Dissertation Abstracts International, 52(06A).
- Dunn, K., Elsom, S., & Cross, W. (2007). Self-efficacy and locus of control affect management of aggression by mental health nurses. *Issues in Mental Health Nurses, 28*(2), 201-217.
- Eccles, J. S. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.
- Ehrenber, R. G., Zuckerman, H., Groen, J. A., & Brucker, S. M. (2009). How to help graduate students reach their destination. *The Chronicle of Higher Education, 56*(8), p. A38.
- Elias, S. M. & Loomis, R. J. (2002). Utilizing need for cognition and perceived self-efficacy to predict academic performance. *Journal of Applied Social Psychology, 32*(8), 1687-1702.
- Elliot, A. J., Shell, M. M., Henry, K. B., & Maeir, M. A. (2005). Achievement goals, performance contingencies and performance attainment: An experimental test. *Journal of Educational Psychology, 97*(4), 630-640.

- Encyclopedia Britannica. Retrieved from <http://www.britannica.com/EBchecked/topic/642046/Helen-Magill-White>
- Esping, A. (2010). Motivation in doctoral programs: A logotherapeutic perspective. *The International Forum for Logotherapy, 33*, 72-78.
- Faghihi, F. Y. (1998). *A study of factors related to dissertation progress among doctoral candidates: Focus on student research self-efficacy as a result of their research training and experiences*. Available from ProQuest Dissertations and Theses. (UMI No. 9834228).
- Farmer, H. S., Wardrop, J. L., Anderson, M. Z., & Risinger, R. (1995). Women's career choices: focus on science, math, and technology careers. *Journal of Counseling Psychology, 42*, 155-170.
- Felsten, G. & Wilcox, K. (1992). Influences of stress and situation-specific mastery beliefs and satisfaction with social support on well-being and academic performance. *Psychological Reports, 70*, 291-303.
- Findley, M. J. & Cooper, H. M. (1983). Locus of control and academic achievement: A literature review. *Journal of Personality and Social Psychology, 44*, 419-427.
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology, 46*, 839-852.
- Folkman, S. & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 22*, 457-459.
- Folkman, S. & Lazarus, R. S. (1985). If it changes it must be a process: A study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology, 48*, 150-170.
- Folkman, S., Schaefer, C., & Lazarus, R. S. (1979). Cognitive processes as mediators of stress and coping. In V. Hamilton & D. M. Warburton (Eds.), *Human stress and cognition: An information-processing approach* (pp. 265-298). London, UK: Wiley.
- Forester, M., Kahn, J. H., & Hesson-McInnis, M. (2004). Factor structures of three measures of research self-efficacy. *Journal of Career Assessment, 12*(1), 3-16.
- Frazier, P A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51*(1), 115-134.
- Gadzella, B. M., Masten, W. G., & Stacks, J. (1998). Students' stress and their learning strategies, test anxiety, and attributions. *College Student Journal, 32*, 416-422.

- Garcia, M. E., Malott, R. W., & Brethower, D. (1988). A system of thesis and dissertation supervision: Helping graduate students succeed. *Teaching of Psychology, 15*, 186-191.
- Gelso, C. J. & Lent, R. W. (2000). Scientific training and scholarly productivity: The person, the training environment, and their interaction. In S. D. Brown and R. W. Lent (Eds.) *Handbook of counseling psychology* (3rd ed.) (pp. 109-139). New York, NY: John Wiley.
- Gibson, S. & Dembo, M. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*, 569-592.
- Girves, J. E. & Wemmerus, V. (1988). Developing models of graduate student degree progress. *Journal of Higher Education, 59*(2), 163-189.
- Golia, A. K, Belias, D. A., Tsioli, S., & Koustelious, A. (2013). Organizational culture and leadership in education. University of Crete: *Journal of Education Sciences*, 1-2, 15-31.
- Goulden, N. R. (1991). Report on the perceptions of communication and relationship during the dissertation process by speech communication doctoral advisors and advisees. *Association for Communication Administration Bulletin, 76*, 39-48.
- Graduate Student Happiness & Well-Being Report. (2014). *The Graduate Assembly*. Retrieved from http://ga.berkeley.edu/wp-content/uploads/2015/04/wellbeingreport_2014.pdf
- Gray, A. (2014). *History of the Doctorate: From Auspicious Beginnings to Online Doctorate*. Retrieved from <http://www.worldwidelearn.com/doctorate-degrees/doctoral-guide/doctoral-degree-history.html>
- Green, K. E. (1997). Psychosocial factors affecting dissertation completion. *New Directions for Higher Education, 99*, 57-64.
- Griffin, B. W. (n.d.). *Sample Research Project Manuscript*. Retrieved from: http://www.bwgriffin.com/gsu/courses/edur9131/activities/EDUR_9131_sample_research_study_dissertation_process.pdf_on
- Goyzman, J. (2010). The influence of locus of control and stress on performance. *The Huron University College Journal of Learning and Motivation, 48*(1), 128-144.
- Hall, C. W., Smith, K., & Chia, R. (2008). Cognitive and personality factors in relation to timely completion of a college degree. *College Student Journal, 42*(4), 1087-1098.

- Hamill, S. K. (2003). Resilience and self-efficacy: The importance of efficacy beliefs and coping mechanisms in resilient adolescents. *Colgate University Journal of the Sciences*, 35, 115-146.
- HanNa, L., Heckman, S. J., Letkiewicz, J. C., & Montalto, C. P. (2014). Financial stress, self-efficacy, and financial help-seeking behavior of college students. *Journal of Financial Counseling and Planning*, 25(2), 148-160.
- Harsch, D. M. (2008). *The role of self-efficacy, locus of control, and self-handicapping in dissertation completion*. Available from ProQuest Dissertations and Theses. (UMI No. 3338455).
- Hatcher, L., Kryter, K., Prus, J. S., & Fitzgerald, V. (1992). Predicting college student satisfaction, commitment and attrition from investment model constructs. *Journal of Applied Social Psychology*, 22(16), 1273-1296.
- Hesli, V. L., Fink, E. C., & Duffy, D. M. (2003). Mentoring in a positive graduate positive student experience: survey results from the Midwest Region, Part 1. *PS: Political Science & Politics*, 36(3), 723-729.
- Hetthong, R. & Teo, A. (2013). Does writing self-efficacy correlate with and predict writing performance? *International Journal of Applied Linguistics and English literature*, 2(1), 167-257.
- Hinkle, L. E. Jr. (1973). The concept of stress in the biological and social sciences. *Science, Medicine and Man*, 1, 31-48.
- Hofer, M. (2007). Goal conflict and self-regulations: A new look at pupils' off-task behavior in the classroom. *Educational Research Review*, 2(1), 28-38.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Hoskins, C. M. & Goldberg, A. D. (2005). Doctoral student persistence in counselor education programs: Student-program match. *Counselor Education and Supervision*, 44, 175-188.
- Jex, S. M., Bliese, P. D., & Primeau, J. (2001). The impact of self-efficacy on stressor-strain relations: Coping style as an exploratory mechanism. *Journal of Applied Psychology*, 86(3), 401-409.
- Joe, V. C. (1971). A review of the internal-external control construct as a personality variable. *Psychological Reports*, 28, 619-640.
- Johnson, E. M., Green, K. E., & Kluever, R. C. (2000). Psychometric characteristics of the revised procrastination inventory. *Research in Higher Education*, 41, 269-279.

- Kahn, J. H. (2001). Predicting the scholarly activity of counseling psychology students: A refinement and extension. *Journal of Counseling Psychology, 48*, 344-354.
- Kahn, J. H. & Scott, N. A. (1997). Predictors of research productivity and science related career goals among counseling psychology graduate students. *The Counseling Psychologist, 25*, 38-67.
- Kaplan, H. I. & Sadock, B. J. (2000). *Learning Theory: Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*. Philadelphia, PA: Lippincott Williams and Wilkins.
- Kardatzke, K. N. (2009). *Perceived stress, adult attachment, dyadic coping, and marital satisfaction of counseling graduate students*. Available from ProQuest Dissertations and Theses. (UMI No. 3368788).
- Kauffman, J. (2006). Stress and social support among online doctoral psychology students. *Journal of College Student Psychotherapy, 20*, 79-88.
- Keedy, N. W (2009). *Health locus of control, self-efficacy, and multidisciplinary intervention for chronic back pain*. Available from ProQuest Dissertations and Theses. (UMI No. 3390168).
- Klassen, R. M. & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741-756.
- Kluever, R. C (1997). Students' attitudes toward the responsibility and barriers in doctoral study. *New Directions in Higher Education, 99*, 47-56.
- Kluever, R. C. & Green, K. E. (1998). The responsibility scale: A research note on dissertation completion. *Educational and Psychological Measurement, 58*(3), 520-531.
- Koiner, J. H. (1992). *Relationship of the locus of control orientation of graduate students in education to their success in pursuing a doctorate degree*. (Unpublished doctoral dissertation). Texas A&M University, College Station, TX.
- Koopman, C, Gore-Felton, C., Marouf, F., Butler, L. D., Field, N., & Spiegel, D. (2000). Relationship of perceived stress to coping, attachment and social support among HIV-positive persons. *AIDS Care, 12*(5), 663-672.
- Laio, K., Lu, J., & Yi, Y. (2007). Research on humanized web-based learning model. *International Journal of Innovation and Learning, 4*(2), 186-196.
- Lan, W. & Williams, A. (2005). Doctoral students' perceptions of advising style and development and the relationship between them. *NACADA Journal, 25*(1), 31-41.

- Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York, NY: McGraw-Hill.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer.
- Lefcourt, H. M. (1976) *Locus of control*. New York, NY: Lawrence Erlbaum Associates.
- Lefcourt, H. M. (1992). Durability and impact of the locus of control construct. *Psychological Bulletin*, 112(3), 411-414.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of Counseling Psychology*, 31, 356-362.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. *Journal of Counseling Psychology*, 33, 265-269.
- Levenson, H. (1981). Differentiating among internality, powerful others, and chance. In H. M. Lefcourt (Ed.), *Research with locus of control construct* (pp. 15-63). New York, NY: Academic Press.
- Lim, H., Heckman, S. J., Montalto, C. P., & Letkiewicz, J. (2014). Financial stress, self-efficacy, and financial help-seeking behavior of college students. *Journal of Financial Counseling & Planning*, 25(2), 148-160.
- Loehlin, J. C. (2004). *Latent variable models: An introduction to factor, path, and structural analysis* (4th ed.). Mahwah, NJ: Lawrence Erlbaum.
- Love, B. J. (1993). Issues and problems in the retention of black students in predominately white institutions of higher learning. *Equity and Excellence in Education*, 26(1), 27-37.
- Love, K. M., Bahner, A. D., Jones, L. N., & Nilson, J. E. (2007). An investigation of early research experience and research self-efficacy. *Professional Psychology: Research and Practice*, 38(3), 314-320.
- Lovitts, B. E. (2001). *Leaving the ivory tower: The causes and consequences of departure from doctoral study*. Lanham, MD: Rowman & Littlefield.
- Lovitts, B. E. (2005). Being a good course-taker is not enough: A theoretical perspective on the transition to independent research. *Studies in Higher Education*, 30(2), 137-154.

- Lovitts, B. E. (2008). The transition to independent research: Who makes it, who doesn't, and why. *The Journal of Higher Education*, 79(3), 296-325.
- Lumsden, D. P. (1981). Is the concept of stress of any use, anymore? In D. Randall (Ed.), *Contributions to Primary Prevention in Mental Health: Working Papers* (PAGE #s). Toronto, Canada: Toronto National Office of Canada Mental Health Association.
- Maher, M. A., Ford, M. A., & Thompson, C. M. (2004). Degree process of women doctoral students: Factors that constrain, facilitate, and differentiate. *The Review of Higher Education*, 27, 385-408.
- Majzub, R. M., Bataineh, M. Z. T., Ishak, N. M., & Rahman, S. (2009). The relationship between locus of control and academic achievement and gender in a selected higher education institution in Jordan. *Proceedings of the 7th WSEAS International Conference on Education & Educational Technology*. Retrieved from: <http://www.wseas.us/e-library/conferences/2009/genova/EDU/EDU-36.pdf>
- Marcos, J. J. M. & Tillema, H. (2006). Studying studies on teacher reflection and action: an appraisal of research contribution. *Educational Research Review*, 1(2), 112-132.
- Marecek, J. & Frasch, C. (1977). Locus of control and college women's role expectations. *Journal of Counseling Psychology*, 24(2), 132-136.
- Mason, M. M. (2012). Motivation, satisfaction, and innate psychological needs. *International Journal of Doctoral Studies*, 7, 259-277.
- McDermott, B. J. (2002). *The utility of perceived stress, locus of control, and type A behavior pattern as predictors of doctoral degree completion in a non-traditional EdD program* (Unpublished doctoral dissertation). West Virginia University, Morgantown, WV
- McGrath, E. (2002). *Become more productive now*. Retrieved from: <http://www.dr Drew.com/Topics/article.asp?id=1039>
- McMillan, J. H. & Schumacher, S. (2001). *Research in education: A conceptual introduction*. New York, NY: Addison Wesley Longman.
- Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: Design and interpretation*. Thousand Oaks, CA: Sage Publications.
- Midgley, C., Feldauer, H., & Eccles, J. S. (1989). Change in teacher efficacy and student self and task-related beliefs in mathematics during the transition to junior school. *Journal of Educational Psychology*, 81, 247-258.

- Mirowsky, J. & Ross, C. (1986). Social patterns of distress. *Annual Reviews Sociology*, 12, 23-45.
- Misra, R. & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41-51.
- Misra, R. & Castillo, L. G. (2004). Academic stress among college students: comparison of American and international students. *College Student Journal*, 20, 303.
- Molinari, V. & Khanna, P. (1981). Locus of control and its relationship to anxiety and depression. *Journal of Personality Assessment*, 45(3), 314-319.
- Muszynski, S. Y. (1988). The relationship between demographic/situational factors, cognitive/affective variables, and needs and time completion of the doctoral program in psychology. *Dissertation Abstracts International-B*, 50(3), AAT 8911362.
- Muszynski, S. Y. & Akamatsu, T. J. (1991). Delay in completion of doctoral dissertations in clinical psychology. *Professional Psychology: Research and Practice*, 22(2), 119-123.
- National Science Foundation. (2006). Field choices and demographic characteristics of doctorate recipients. Ch. 3. Retrieved from <http://www.nsf.gov/statistics/nsf06319/chap3.cfm>
- National Science Foundation. (2009). *Doctorate recipients from U.S. universities: Summary report 2007-08*. Chicago, IL: National Opinion Research Center.
- Neale-McFall, C. & Ward, C. A. (2015). Factors contributing to counselor education doctoral students satisfaction with their dissertation chairperson. *The Professional Counselor*, 5(1), 185-194.
- Nejati, M., Abedi, A., Aghaei, A., & Mohammadi, M. (2012). The relationship between locus of control with the academic performance of the M.A. students by considering the role of life quality and satisfaction with life. *Interdisciplinary Journal of Contemporary Research in Business*, 4(5), 254-263.
- Nerad, M. & Cerny, J. (1991). From facts of action: Expanding the educational role of the graduate division. *Communicator*. May, Special edition.
- Nerad, M. & Sands Miller, D. (1997). Rethinking the dissertation process: Tackling personal and institutional obstacles. In L. Goodchild, C. E. Green, E. Katz, & R. C. Kluever (Eds.), *The series new directions in higher education* (pp. 75-90). San Francisco, CA: Jossey-Bass Publishers.

- Niemi, P.M. & Viniomaki, P.T. (1999). Medical Students' academic distress, coping and achievement strategies during the pre-clinical years. *Teaching and Learning in Medicine*, Vol. 11, 125-134.
- Ng, T. W. H., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: A meta-analysis. *Journal of Organizational Behavior*, 27(8), 1057-1087.
- Noel-Levitz, R. (2011). 2011 student retention practices at four-year and two-year institutions. Coralville, IA: Author.
- Nowicki, S., Duke, M. P., Sisney, S., Stricker, B., & Tyler, M. A. (2004). Reducing the drop out rates of at-risk high school students: The effective learning program (ELP). *Genetic, Social and General Psychology Monographs*, 130(3), 225-230.
- Ogunmakin, A. O. & Akomolafe, M. J. (2013). Academic self-efficacy, locus of control and academic performance of secondary school students in Ondo State, Nigeria. *Mediterranean Journal of Social Sciences*, 4(11), 570-576.
- Ojeda, L., Flores, L. Y., & Navarro, R. L. (2011). Social cognitive predictors of Mexican American college students' academic and life satisfaction. *Journal of Counseling Psychology*, 58(1), 61-71.
- Ott, M. D., Markewich, T. S., & Ochsner, N. L. (1984). Logit analysis of graduate student retention. *Research in Higher Education*, 21, 439-460.
- Overall, N. C., Deane, K. L., & Peterson, E. R. (2011). Promoting doctoral students' research self-efficacy: combining academic guidance with autonomy support. *Higher Education Research and Development*, 30(6), 791-805.
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66, 543-578.
- Pajares, F. (2001). Overview of social cognitive theory and of self-efficacy. Retrieved August 3, 2014 from: <http://www.uky.edu/~eushe2/Pajares/efftalk.html>
- Pajares, F. (2002). *Self-efficacy beliefs in academic contexts: An outline*. Retrieved from: <http://www.uky.edu/~eushe2/Pajares/efftalk.html>
- Pajares, F., Britner, S. L., & Valiante, G. (2000). Relation between achievement goals and self-beliefs of middle school students in writing and science. *Contemporary Educational Psychology*, 25, 406-422.
- Pajares, F. & Johnson, M. J. (1996). Self-efficacy beliefs in the writing of high students: A path analysis. *Psychology in the Schools*, 33, 163-175.

- Pajares, F. & Miller, M. D. (1994). The role of self-efficacy and self-concept beliefs in mathematical problem-solving: A path analysis. *Journal of Educational Psychology, 86*, 193-203.
- Pajares, F., Miller, M. D., & Johnson, M. J. (1999). Gender differences in writing self-beliefs of elementary school students. *Journal of Educational Psychology, 91*, 50-61.
- Pajares, F. & Schunk, D. H. (2001). Self-beliefs and school success: self-efficacy, self-concept, and school achievement. In R. Riding & S. Rayner (Eds.), *Self-perception* (pp. 239-266). London: Ablex.
- Pajares, F. & Valiante, G. (1997). Predictive and mediational roles of the self-efficacy beliefs of upper elementary school students. *Journal of Educational Research, 89*, 201-221.
- Park, Y. Sh. & Kim, U. (1998). Locus of control attribution style, and academic achievement comparative analysis of Korean, Korean-Chinese, and Chinese students. *Asian Journal of Social Psychology, 4*, 191-208.
- Parkes, K. R. (1984). Locus of control, cognitive appraisal, and coping in stressful episodes. *Journal of Personality and Social Psychology, 46*, 655-668.
- Petrie, T. A. & Stoeber, S. (1997). Academic and nonacademic predictors of female student-athletes' academic performances. *Journal of College Student Development, 38*, 599-608.
- Phares, E. J. (1973). Locus of control: A personality determinant of behavior. Morristown, NJ: Great Learning Press.
- Phillips, J. M. & Gully, S. M. (1997). Role of goal orientation, ability, need for achievement, and locus of control in self-efficacy and goal-setting process. *Journal of Applied Psychology, 82*, 792-802.
- Pincus, T. & Callahan, L. F. (1994). Associations of low formal education levels and poor health status: Behavioral, in addition to demographic and medical explanations? *Journal of Clinical Epidemiology, 147*, 355-361.
- Pincus, T. & Callahan, L. F. (1995). What explains the association between socioeconomic status and health: Primarily access to medical care or mind-body variables? *Advances: Journal of Mind-Body Health, 11*, 4-36.
- Pintrich, P. R. & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33-40.

- Pintrich, P. R. & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement: Goals and self-regulatory processes*(pp. 371-402). Greenwich, CT: JAI Press.
- Pinugu, J. N. (2013). College self-efficacy and academic satisfaction moderated by academic stress. *The International Journal of Research and Review, 10*, 34-51.
- Polgrow, S. (1978). Program characteristics and use of student data to predict attrition. *College Student Journal, 12*(4), 348-353.
- Presley, C. L. (1996). Individual and institutional factors that affect the success of African-American graduate and professional school students. Dissertation Abstracts International, 56(2006A).
- Pritchard, M. E. & Wilson, G. S. (2003). Using emotional and social factors to predict student success *Journal of College Student Development, 44*, 18-22.
- Redden, E. (2008). Operation transition. Inside higher education. Retrieved from <http://www.insidehighered.com/news/2008/07/10/veterans>
- Reynolds, A. L. & Weigand, M. J. (2010). The relationships among academic attitudes, psychological attitudes, and the first-semester academic achievement of first year college students. *Journal of Student Affairs Research and Practice, 47*(2), 175-195.
- Roddenberry, A. & Renk, K. (2010). Locus of control and self-efficacy: Potential mediators of stress, illness, and utilization of health services in college students. *Child Psychiatry Human Development, 41*(4), 353-370.
- Robbins, S. B., Allen, J., Casillas, A., Peterson, C., & Le, H. (2006). Unraveling the differential effects of motivational and skills, social, and self-management measures from traditional predictors of college outcomes. *Journal of Educational Psychology, 98*(3), 598-616.
- Rotter, J. B. (1954). *Social learning and clinical psychology*. Englewood Cliffs, NJ: Prentice Hall.
- Rotter, J. B. (1966). Generalized expectancies for internal vs. external control of reinforcement. *Psychological Monographs, 80*(1), 1-28.
- Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Counseling and Clinical Psychology, 43*, 56-67.

- Ruffin, R., Ironson, G., Fletcher, M. A., Balbin, E., & Schneiderman, N. (2012). Health locus of control beliefs and healthy survival with AIDS. *International Journal of Behavioral Medicine, 19*(4), 512-517.
- Russell, R., K. & Petrie, T. A. (1992). Academic adjustment of college students: assessment and counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (pp. 485- 511). New York: John Wiley & Sons.
- Ruthig, J. C., Haynes, T. L., Stupinsky, R. H., & Perry, R. P. (2009). Perceived academic control: Mediating the effects of optimism and social support on college students' psychological health. *Social Psychology of Education, 12*(2), 233-249.
- Sagone, E. & DeCaroli M. E. (2014). Locus of control and academic self-efficacy in university students: The effects of self-concepts. *Procedia-Social and Behavioral Sciences, 114*, 222-228.
- Salanova, M., Schaufeli, W. B., Martinez, I., & Bresó, E. (2010). How obstacles and facilitators predict academic performance: The mediating role study burnout and engagement. *Anxiety, Stress & Coping, 23*(1), 53-70.
- Sandler, M. E. (2000). Career decision-making self-efficacy, perceived stress, and an integrated model of student performance: A structural model of finances, attitudes, behavior, and career development. *Research in Higher Education, 4*(5), 537-578.
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment, 8*, 350-353.
- Schmitz, N., Neumann, W., & Oppermann, R. (2000). Stress, burnout, and locus of control in German nurses. *International Journal of Nursing Studies, 37*, 95-99.
- Schmitz, B. & Skinner, E. (1993). Perceived control, effort, and academic performance: Interindividual, intraindividual, and multivariate time-series analyses. *Journal of Personality and Social Psychology, 64*, 1010-1028.
- Schunk, D. H. (1981). Modeling and attributional effects on children's achievement: A self-efficacy analysis. *Journal of Educational Psychology, 73*, 93-105.
- Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26*, 207-231.
- Schunk, D. H., & Hanson, A. R. (1989). Self-modeling and children's cognitive skill learning. *Journal of Educational Psychology, 81*, 155-163.
- Schwarzer, R. & Renner, B. (2000) Social-cognitive predictors of health behavior: Action self-efficacy and coping self-efficacy. *Health Psychology, 19*(5), 487-495.

- Seligman, M. E. P. (1975). *Helplessness: On depression, development and death*. San Francisco, CA: W. H. Freeman.
- Selye, H. (1973). The evolution of the stress concept. *American Psychologist*, *61*, 692-699.
- Sharma, V. J., Patel, P. M., Pacheri, B, J. R., & Shri, B. M. S. (2013). Evaluation of antibacterial activity of methanolic extract of plant Rivea Ornata. *International Research Journal of Pharmacy*, *4*(1), 233-234.
- Sheridan, J., Byrne, A. C., & Quina, K. (1989). Collaborative learning: Notes from the field. *College Teaching*, *37*(2), 49-53.
- Shuttleworth, M. (2008). Definition of research. Retrieved from <https://explorable.com/definition-of-research>.
- Smith, J. M. (1985). Completing the doctoral dissertation in clinical psychology. (Unpublished doctoral dissertation). Adelphi University: Garden City, NY,
- Snyder, C. J. & Lopez, S. J. (2007). *Positive psychology: The scientific and practical explorations of human strengths*. London, UK: Sage.
- Solberg, V. S. & Villarreal, P. (1997). Examination of self-efficacy, social support and stress as predictors of psychological and physical distress among Hispanic college students. *Hispanic Journal of Behavioral Sciences*, *19*(2), 182-201.
- Sonntag, U., Esch, T., von Hagen, L., Renneberg, B., Braun, V., & Heintze, C.(2010). Locus of control, self-efficacy and attribution tendencies in obese patients: Implications for primary care consultations. *Medical Science Monitor*, *16*(7), 330-335.
- Spaulding, L. S. & Rockinson-Szapkiw, A. J. (2012). Hearing their voices: Factors doctoral candidates attribute to their persistence. *International Journal of Doctoral Studies*, *7*, 199-219. Retrieved from <http://ijds.org/Volume7/IJDSv7p199-219Spaulding334.pdf>
- Sternberg, D. (1981). *How to complete and survive a doctoral dissertation*. New York, NY: St. Martin's Press.
- Stevenson, A. & Harper, S. (2006). Workplace stress and the student learning experience. *Quality Assurance in Education*, *14*(2), 167-178.
- Stewart, D. W. (1995). Developmental considerations in counseling graduate students. *Guidance & Counseling*, *10*, 21-27.

- Strausser, D., Waldrop, D., Hamsley, J., & Jenkins, W. (1998). The role of self-efficacy and locus of control in job readiness training programs. *Work, 10*(3), 243-249.
- Struthers, W. C., Perry, R. P., & Menec, V. H. (2000). An examination of the relationships among academic stress, coping, motivation and performance in college. *Research in Higher Education, 42*(5), 581-592.
- Stuart, M. E. (2013). *The relation of fear of failure, procrastination and self-efficacy to academic success in college for first and non first-generation students in a privatenon-selective institution*. Available from ProQuest Dissertations and Theses. (UMI No. 3596272).
- Sumner, D. A. (2008). A measurement of student satisfaction levels as means of program evaluation: An examination of Baker University's educational leadership doctoral program. Retrieved from https://www.bakeru.edu/images/pdf/SOE/EdD_Theses/Sumner_Douglas.pdf
- Tella, A., Tella, A., & Adeniyi, S. O. (2011). Locus of control, interest in schooling and self-efficacy as predictors of academic achievement among junior secondary school students in Osun State, Nigeria. *New Horizons in Education, 59*(1), 25-37.
- Tella, A., Tella, A., & Adika, L. O. (2008). Self-efficacy, locus of control as predictors of academic achievement among secondary school students in Osun State Unity schools. *IFE Psychologia: An International Journal, 16*(2), 120-130.
- Tierce, G. L. (1984). Study of attrition factors in the doctoral programs in educational administration. *Dissertation Abstracts International, 46*(01A).
- Tinto, V. (1993). *Leaving college: Rethinking the causes of cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.
- Tong, Y. & Song, S. (2004). A study on general self-efficacy and subjective well-being of low SES college students in a Chinese university. *College Student Journal, 38*, 637-643.
- Torres, J. B. & Solberg, V. S. (2001). Role of self-efficacy, stress, social integration, and family support in Latino college student persistence and health. *Journal of Vocational Behavior, 59*(1), 53-63.
- Trautwein, U., Ludtke, O., Schnyder, I., & Niggli, A. (2006). Predicting homework effort: Support for a domain-specific, multilevel homework model. *Journal of Educational Psychology, 98*(2), 438-456.
- van Dinther, M. V., Dochy, F., & Segers, M. (2011). Factors affecting students' self-efficacy in higher education. *Educational Research Review, 6*, 95-108.

- Vaezi, S. & Fallah, N. (2011). The relationship between emotional intelligence and burnout among Iranian EFL teachers. *Journal of Language Teaching and Research*, 2(5), 1122-1129.
- Valentine, N. L. (1986). Factors related to attrition from doctor of education program in the College of Human Resources and Education at West Virginia University. *Dissertation Abstracts International*, 47(06A).
- Varney, J. J. (2003). *A study of the relationships among doctoral program components and dissertation self-efficacy on dissertation progress*. Available from ProQuest Dissertations and Theses database. (UMI No. 3171591).
- Varney, J. J. (2010). The role of dissertation self-efficacy in increasing dissertation completion: Sources, effects and viability of a new self-efficacy construct. *College Student Journal*, 44(4), 932-947.
- Vitaliano, P. P., Russo, J., & Maiuro, R. D. (1987). Locus of control, type of stressor, and appraisal within a cognitive-phenomenological model of stress. *Journal of Research in Personality*, 21, 224-237.
- Vlisides, C. E., Eddy, J. P., & Mozie, D. (1994). Stress and stressors: Definition, identification and strategy for higher education constituents. *College Student Journal*, 28, 122-124.
- Walker, G. M., Golde, C. M., Jones, L., Conklin Bueschel, A., & Hutchings, P. (2008). *The formation of scholars: Rethinking doctoral education for the twenty-first century*. San-Francisco, CA: Jossey Bass.
- Wagner, D. V. (1986). *Selected personality characteristics and situational factors as correlates of completion and non-completion of the doctoral dissertation*. Available from ProQuest Dissertations and Theses database. (UMI No. 8621398).
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag.
- Wentzel, M. L. (1987). The relationship of locus-of-control orientation to the academic achievement of doctoral students. *Dissertation Abstracts International*, 48(3), 873989.
- West, I. J. Y., Gokalp, G., Pena, E. V., Fischer, L., & Gupton, J. (2011). Exploring effective support practices for doctoral students' degree completion. *College Student Journal*, 45(2), 310-321.
- Williams, T. & Williams, K. (2010). Self-efficacy and performance in mathematics: Reciprocal determinism in 33 nations. *Journal of Educational Psychology*, 102(2), 453-466.

- Wilks, S. E. (2008). Resilience amid academic stress: The moderating impact of social support among social work students. *Advances in Social Work, 9*(2), 106-125.
- Wise, M. (1999). *Locus of control in our daily lives: How the concept of control impacts the social world*. Retrieved from: <http://www.units.miamioh.edu/psybersite/control/overview.shtml>
- Wolfe, J. F. (2011). *The effects of perceived success or failure on locus of control orientation in college students*. Retrieved from: www.psych.umn.edu/sentience
- Wood, D. J. (1978). Internal and external indicators of attrition in the College of Education doctoral program at the University of Toledo. *Dissertation Abstracts International, 39*(06A).
- Wood, R.E. & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review, 14*(3), 361-384.
- Wood, R. E., Bandura, A., & Bailey, T. (1990). Mechanisms governing organizational performance in complex decision-making environments. *Organizational Behavior and Human Decision Processes, 46*(2), 181-201.
- Woolfolk, A. E. & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82*, 81-91.
- Woolfolk, A. E., Rosoff, B., & Hoy, W. K. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching & Teacher Education, 6*, 137-148.
- Zajacova, A., Lynch, S. M., & Espenshade, T. J. (2005). Self-efficacy, stress, and academic success in college. *Research in Higher Education, 46*(6), 677-706.
- Zimmerman, B. J. (1989). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research and practice* (pp.1-25). New York, NY: Springer.
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R., Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp.13-39). San Diego, CA: Academic Press.
- Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal, 29*, 663-676.
- Zimmerman, B. J. & Ringle, J. (1981). Effects of model persistence and statements of confidence on children's efficacy and problem solving. *Journal of Educational Psychology, 73*, 485-493.

VITA

Gabriela Alina Dumitrescu

gabriela@andrews.edu

11/23/72

EDUCATION:

Andrews University – Berrien Springs, MI

M.A., Educational & Developmental Psychology, 2004

B.A., Religion & Communications, 2002

PROFESSIONAL EXPERIENCE

- | | |
|-------------|---|
| Fall 2013 | Contract teaching at AIIAS (Adventist International Institute of Advanced Studies), Philippines |
| 2009 – 2012 | Executive Assistant for Vice President for Development & University Advancement, Andrews University |
| 2005 - 2010 | Guest Lecturer- Undergraduate Level Courses (Human Development & Educational Psychology), Andrews University |
| 2004 – 2010 | Assessor & Mentor for Conditional Students at the Reading, Learning and Assessment Center, Andrews University |
| 2001-2009 | Office Manager for the Reading, Learning, & Assessment Center, Andrews University |
| 2001-2009 | Secretary for the Educational & Counseling Psychology Department, Andrews University |

PRESENTATIONS

- | | |
|------------------|---|
| October 17, 2015 | Professional Appearance Presentation for Women in Leadership Conference at AIIAS (Adventist International Institute of Advanced Studies), Philippines |
|------------------|---|

- Sept. 26, 2014 Time and Family Management – Presentation to graduate students at AIIAS (Adventist International Institute of Advanced Studies), Philippines
- 2013-present Parenting and Family Seminars at AIIAS (Adventist International Institute of Advanced Studies), Philippines
- Sept. 7, 2013 Women Abuse Presentation for the Women’s Ministries at AIIAS, Philippines
- Oct.26, 2013 Child Development Presentation for the Pathfinder Master Guides, AIIAS Philippines

AWARDS & CERTIFICATIONS

- Certificate of Recognition – Service Award (Andrews University, 2006)
- Advanced Connections Certificate – Quality Service Training (Andrews University, 2005)
- Nominated for Who’s Who among Executives and Professional Women (2007, 2008)
- Nominated for Who’s Who among Students in American Univ. & Colleges (2001 – 2008)
- Member of Lambda Pi Eta since 2002
- Graduated SUMA CUM LAUDE (2002, 2004)
- Dean’s List (2000, 2001, 2002)