

Fall 11-14-2017

Discovering Psychological Components of a Ph.D.; the Road to Success

Kathryn L. Bode 4803290
University of New Mexico

Follow this and additional works at: https://digitalrepository.unm.edu/oils_etds



Part of the [Adult and Continuing Education Commons](#), and the [Other Psychology Commons](#)

Recommended Citation

Bode, Kathryn L. 4803290. "Discovering Psychological Components of a Ph.D.; the Road to Success." (2017).
https://digitalrepository.unm.edu/oils_etds/46

This Dissertation is brought to you for free and open access by the Electronic Theses and Dissertations at UNM Digital Repository. It has been accepted for inclusion in Organization, Information and Learning Sciences ETDs by an authorized administrator of UNM Digital Repository. For more information, please contact disc@unm.edu.

Kathryn L. Bode

Candidate

Organization, Information, and Learning Sciences

Department

This dissertation is approved, and it is acceptable in quality and form for publication:

Approved by the Dissertation Committee:

Patricia Boverie, Chairperson

Frances Wilkinson

Nick Flor

Robert Grassberger

Mary Cooley

**DISCOVERING PSYCHOLOGICAL COMPONENTS OF A
PH.D.; THE ROAD TO SUCCESS**

by

KATHRYN L. BODE

B.A., Psychology, George Mason University, 1983
M.A., Special Education, The University of New Mexico, 1997

DISSERTATION

Submitted in Partial Fulfillment of the
Requirements for the Degree of

**Doctor of Philosophy
Organization, Information, and Learning Sciences**

The University of New Mexico
Albuquerque, New Mexico

December, 2017

© 2017 Kathryn Bode

DEDICATION

To my husband, Roger Carman, your optimism has been my lighthouse.

To my children and my grandchildren, you are my inspiration. Your encouragement through this process has meant everything! Always keep learning, and reach for the stars!

To my parents, John & Diane Bode, you are my pillars; you've modeled perseverance, resilience, and a joy of learning. You are the grittiest people I know and I couldn't have asked for better parents!

To my mentors, Dr. Patsy Boverie, Dr. Grassberger, Dr. Flor, Dr. Cooley, and Dr. Wilkinson, you have continuously encouraged and believed in me. I am transformed, and forever grateful to each of you.

**DISCOVERING PSYCHOLOGICAL COMPONENTS OF A PH.D.; THE ROAD TO
SUCCESS**

By

Kathryn L. Bode

B.A., Psychology, Psychology, George Mason University, 1983

M.A., Special Education, University of New Mexico, 1997

Ph.D., Organization, Information, and Learning Sciences, University of New Mexico, 2017

ABSTRACT

This was a descriptive study which examined the psychological components involved in the completion of a Ph.D. journey. I used a phenomenological approach to investigate doctoral program experiences (n=23), seeking to identify strategies, skills, and experiences commonly shared by successful Ph.D. students through a lens of Transformational Learning, Psychological Capital (PsyCap), and Emotional Intelligence (EI). Assessment measures included interviews, questionnaires, and the administration of both the Emotional Intelligence Appraisal (EIA) and Psychological Capital Questionnaires (PCQ). Findings revealed the presence of Grit, adequate support systems, balance, positive self-talk, and a moderately high level of PsyCap. A correlational analysis indicated a moderately strong positive correlation ($r = 0.62$) between EI and PsyCap. Finally, suggestions were provided for graduate departments to help support doctoral success.

Table of Contents

Discovering Psychological Components of a Ph.D.; the Road to Success	v
ABSTRACT	v
Problem Statement.....	2
Conceptual Framework.....	3
Transformational Learning Theory.....	4
Emotional Intelligence.....	4
Psychological Capital	5
Purpose of Study.....	8
Chapter 2: Literature Review.....	9
Doctoral Program Attrition.....	9
Content Theories of Motivation.....	18
Process Theories of Motivation	20
Self-Determination Theory of Motivation	21
Self-Directed Theory and Doctoral Pursuit	23
Predictors of Workplace Success.....	23
Research Gap	31
Chapter 3: Methods	32
Rationale for Phenomenological Method	32
Research Questions.....	33
Instrument Selection	34
Participants	35
Risks	37
Procedure	37
Data Analysis.....	39
Chapter 4 Results.....	41
Demographics.....	41
Interview Results	43
Doctoral Success Questionnaire Results.....	49
Psychological Capital Quotient (PCQ) Results	52
Emotional Intelligence Appraisal (EIA) Results	56
Correlation PsyCap and EI	62
Missing Data.....	62
Chapter 4 Summary	63
Chapter 5, Discussion, Implications, & Summary.....	64
Discussion.....	64
Study Limitations	69
Statement of Researcher Positionality	70
Future Research	70

Recommendations	71
Study Summary	71
Appendix A Email Recruitment	74
Appendix B Recruitment Verbal Script.....	76
Appendix C IRB Approved Consent to Participate	78
Appendix D Demographic Questionnaire.....	82
Appendix E Doctoral Success Questionnaire	84
Appendix F Doctoral Success Interview Questions.....	87
Appendix G Permission to Use the PCQ for Research	88
Appendix H IRB Approval Letter	89
References	93

List of Figures

Figure 1	The synergy of Psychological Capital	07
Figure 2	STEM vs Social Science, Humanities 10-yr Completion Rate	10
Figure 3	Historical Evolution of Emotional Intelligence (EI)	26
Figure 4	Challenges Encountered in Doctoral Problem	44
Figure 5	Doctoral Success Frequency Distribution	51
Figure 6	PCQ Scores Box and Whisker Plot	53
Figure 7	PCQ Doctoral Success Frequency Distribution	53
Figure 8	PCQ Score Comparison Student vs Doctor	54
Figure 9	PCQ Score Comparison by Gender	54
Figure 10	PCQ Score Comparison by Age Group	55
Figure 11	PCQ Score Comparison by Time in Program	56
Figure 12	EIA Score Distribution	58
Figure 13	EIA Score Box and Whisker Plot	58
Figure 14	EIA Score Comparison Student vs Doctor	59
Figure 15	EIA Score Comparison by Gender	59
Figure 16	EIA by Age	60
Figure 17	EIA Score Comparison by Time in Program	61
Figure 18	PCQ and EIA Correlational Analysis	62

List of Tables

Table 1	Cumulative 10-year Doctoral Completion Rates by Broad Field	09
Table 2	Emotional Intelligence Appraisal Measurement Tool	28
Table 3	Student Demographics	42

Table 4	Doctoral Graduate Demographics	42
Table 5	Psychological Strengths Theme 1: Balance	46
Table 6	Psychological Strengths Theme 2: Action	47
Table 7	Psychological Strengths Theme 3: Support	48
Table 8	Psychological Strengths Theme 4: Beliefs/Self-talk	50
Table 9	Operational Definitions of Psychological Skills	51
Table 10	PCQ Scores - Central Tendency	52
Table 11	PCQ Mean Score Comparison Summary- All Areas	56
Table 12	Central Tendency EIA all Participants	57
Table 13	EIA Mean Score Analysis Summary	61

Discovering the Psychological Components of a Ph.D.; the Road to Success

Earning a Ph.D. can yield many personal and professional benefits, such as better job opportunities, greater flexibility, better working conditions, higher income, greater knowledge production and distribution, social and economic growth, and innovation (Litalien & Guay, (2015). The decision to begin such a journey is serious because the journey itself is a long, challenging, and complicated process which involves ongoing efforts to continue to matriculation (Byers, et. Al, 2014). Yet the difficulty of the process adds respect and meaning to the degree (Byers, et al., 2014) and so students likely entered their programs with enthusiasm and expectations of a successful journey. Despite the positive outcomes associated with completing a Ph.D., the average doctoral graduate in 2003 took approximately 10.1 years to matriculate (NSF, 2006), and only 50-57% of those who started graduated (Council of Graduate Schools, 2008; Cassuto, 2013). This is an alarming statistic, and considering the rigorous admission requirements of doctoral programs could possibly suggest a problem with the selection criteria of potential doctoral students. Perhaps there is more to predicting success in potential doctorate students than tradition dictates?

There is scant research on the requisite skills for success in a doctoral program. There is more evidence of hindrances to doctoral completion, including “time management, persistence, difficulty with program rigor, and mismatched expectations” (Byers, et al., 2014, p. 109). The research on the actual skills required for success are few. The research that does exist regarding what contributes to doctoral success identifies support and encouragement from faculty, family, and peers (Byers, et al., 2014) and a few key psychological skills such as resilience and persistence (Spaulding & Rockinson-Szapkiw, 2012). The dearth of research on this topic begs

the question, are there more psychological skills involved in doctoral success, and if so, what are they?

Problem Statement

Limited research has been conducted to better understand doctoral program attrition rates. Potentially, one key may be the issue of selection for doctoral programs. Data show that attrition rates across disciplines are high. While doctoral program admissions rely on traditional methods of selection, including prior educational grade point averages, intelligence and aptitude tests for graduate level work, letters of reference, letters of interest to assess writing skills, and prior success in work or school endeavors, they do not investigate the psychological skills involved in managing such a long, challenging, and transformational journey. The traditional doctoral program selection method does not appear to be working as intended as reflected by the number of students that drop out. Perhaps there is something the selection processes do not consider, such as pertinent psychological skills related to coping, managing stress, and persistence through such a long, life changing journey.

Common sense might dictate that a certain level of psychological skill is engaged in the successful student's journey, such as self-efficacy, resilience, hope, optimism, self-directed learning, organization, and learning from other student experiences. Along these lines, Litalien & Guay, (2015) created a predictive model of Ph.D. student dropout, opining that perceived confidence, enhanced through support by faculty, advisors, and other doctoral students, is a foundation of doctoral student's perseverance. While the doctoral dropout rate is high in the US, approximately 50%, depending on the area of study (Cassuto, 2013), support from others does not adequately explain all the potential psychological processes involved in the decision to begin and persist in graduate studies.

Understanding some pivotal experiences which influence individuals to engage in rigorous doctoral degree processes, and identifying skills which enable them to continue their journey in the face of numerous challenges, can provide meaningful information for potential doctoral candidates. Additionally, graduate departments and students might like to know if applicants possess skills associated with perseverance through the doctoral process.

The doctoral journey is a long, rigorous, and challenging journey. The national attrition rate (across all doctoral programs) is high (50% in 2013 per Cassuto) and even after 10 years in a doctoral program, the completion rate is not much better (Council on Doctoral Completion, 2008). One question that arises when pondering such a high attrition rate is: what skills do the doctoral students who persist in such a journey have that set them apart from those who do not? I predicted that there are certain psychological skill sets that successful doctoral students utilize to persevere through their programs. There are certain psychological constructs, such as Psychological Capital and Emotional Intelligence which can increase well-being, and contribute to positive organizational behavior, and to the bottom-line production of an agency (Bar-On, 2010; Luthans, Youseff & Avolio, 2007). I conjectured that successful students also possess these same skill sets because a student's work is their educational pursuit in terms of the required effort, time spent at the process, and interactions with professors (i.e., bosses) or co-students (i.e., co-workers).

Conceptual Framework

The theoretical framework for this study was a three-fold combination of Emotional Intelligence (E.I.), Transformative Learning Theory (T.L.T.), and Psychological Capital (PsyCap). These three theories evolved from the field of positive psychology which emphasizes what is right with individuals, rather than the traditional focus of illness. These theories

provided a framework of positive psychological skills which can predict positive outcomes including happiness, increased productivity, and overall wellbeing, in individuals, and as proposed in this study, in doctoral students. The following section defines these theories and their components.

Transformational Learning Theory

Transformational learning theory can be defined in numerous ways, depending on perspective. For this study, this theory was defined by a combination of Mezirow & Associates' (1990) definition, a change in what one knows because of an experience which upsets the foundations of what they thought they knew. In other words, something that causes an individual to question what they know and propels them towards a new awareness or change in perception.

Transformational learning plays an integral theoretical role in the doctoral journey. The doctoral process is a transformational one because it significantly changes individuals (Phillips & Pugh, 2010). The way a student responds to the inherent disorienting dilemmas of a doctoral program, or their perceptions of support and belonging, affect whether they will be able to see things optimistically and persevere to the finish line.

Emotional Intelligence

The phenomenon of Emotional Intelligence (E.I.) states that there is much more involved in the prediction of an individuals' potential for life success than a traditional cognitive intelligence quotient used for decades (Goleman, 1995, p. 43) and the emotional ability to interact with others is paramount to work success (Boyatzis, Rochford, & Cavanagh, 2017). Perhaps this "something more" enables individuals to not just survive, but thrive in their everyday lives. This phenomenon is rooted in positivity, enhances one's potential to positively influence others, increases organizational economic gains, and enhances employee job

satisfaction. E.I. is the process of bringing intelligence to emotions and can be viewed in four separate areas: being in touch with one's emotions, being able to handle one's emotions, identifying other people's emotional states, and responding to other people's emotional states (Goleman, 1995). E.I. can include the ability to manage self and relationships (Boyatzis & Saatchioglou, 2008; Boyatzis, Rochford, & Cavanaugh, 2017), can be influenced through organizational leaders' moods and actions (Goleman, Boyatzis, & McKee, 2002), and is a decider when skills are even (Goleman, Boyatzis, & McKee, 2002). It can be developed, and enables people to thrive.

Psychological Capital

People have certain skills which enable them to be more successful in the workplace, and that affect their overall psychological wellbeing (Luthans et al., 2007). Positive psychological capital (PsyCap), also developed out of the field of positive psychology, focuses on behavioral skill sets common among successful, happy individuals.

Luthans, et al (2006) posit that people who are successful appear to have a combination of skills, which, when combined, act in a matter that is synergistic and more collectively powerful than any of the skills individually (Luthans et al., 2006). These state-like psychological capital skills are coined PsyCap Hero skills, can be measured and can change (Luthans et al., 2006; Luthans, Avey, & Patera, 2008). The acronym *HERO* stands for hope, efficacy, resilience, and optimism. Please refer to figure 1 which depicts the synergistic nature of PsyCap.

Hope

Hope can be defined in several ways. For this study, I adopted a state-like definition: a “positive motivational state based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)” (Snyder, 2002, p. 250).

According to this definition, hope is broken into two parts: willpower or determination, and pathways. Determination is what motivates someone to achieve their goals (Luthans, Avey, Clapp-Smith & Li, 2008), while pathways refer to different ways to accomplish goals, a skill which is useful when obstacles are encountered (Luthans, Avolio, Avey & Norman, 2007).

Self- Efficacy

Self-efficacy refers to the confidence one must manage obstacles, or meet challenges. According to Bandura (1994), self-efficacy is the ability one must get the job done regardless of obstacles which may arise. For the purposes of this study I used the following definition of self-efficacy as proposed by Luthans, Youseff, and Avolio (2007), and which encompasses Bandura's meaning. According to Luthans, Youseff, and Avolio (2007), self-efficacy is the self-reliance to begin, and the ongoing efforts to continue to persevere with personal goals, even when faced with challenges or obstacles. Self-efficacy also requires an ability to redirect oneself as needed, and to be resilient when faced with challenges (Luthans, Youseff, and Avolio, 2007).

Resilience

Resilience is defined as a "capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress, and increased responsibility" (Luthans, 2002, p. 702).

It is an important component of coping with stressful situations (Schetter & Dolbier, 2011). It is also defined as an ability to draw on resources to help return to one's starting point after a stressful experience (Schetter & Dolbier, 2011), and (Hobfoll, 2011).

Optimism

Optimism is the ability to see things from a positive perspective, and to believe that good things, not bad, will happen (Luthans et al., 2007). Realistic optimism, the ability to put a

positive spin on things that happen and to believe that good things will happen rather than bad things, builds hope, and enables one to bounce back quickly from setback (Luthans, Avey, Norman, Combs, & Avolio, 2006).

Psychological Capital (PsyCap) Assessment

The PsyCap assessment tool measures the degree of the synergistic effect of its combined subsets. It “predicts performance and satisfaction better than any of the individual strengths that make it up” (Luthans et al., 2006, p. 388). PsyCap can be measured (Luthans, Avolio, & Avey, 2007), and it is amenable to change through instruction (Luthans, et. All, 2006). Perhaps other organizations, such as educational institutions, can measure, and even enhance the PsyCap skills of perspective doctoral students.

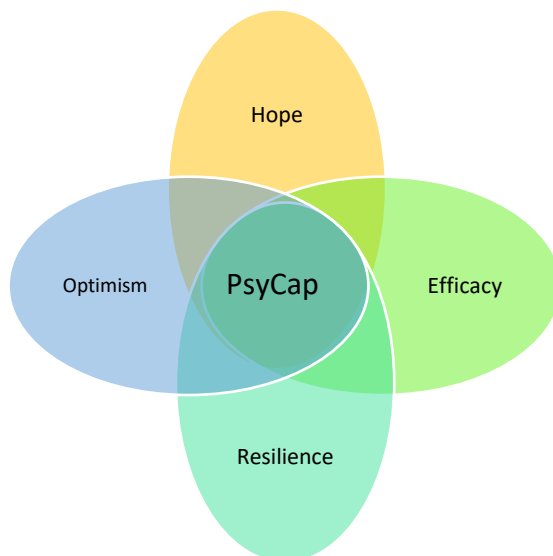


Figure 1 The synergy of Psychological Capital.

Education as “Work”

As previously discussed, the doctoral journey is a long, transformative process that utilizes, and possibly even taxes, a student’s psychological resources. Psychological health is important and is related to the resources one has stored for use in reaching goals (Weyrouch,

2010). Those lacking stored resources may experience performance or health deficits (Weyrouch, 2010). For this reason, doctoral students and graduate schools would benefit from a method to ascertain the amount of stored psychological resources required for a successful Ph.D. journey.

There is evidence that the psychological skills of both E.I. and PsyCap provide a foundation and prediction of success for individuals in the workplace. These same predictors of success could be applied to the doctoral journey because the requirements of success are similar for both situations, considering that the doctoral journey is the students' "work." Work success requires emotional intelligence, the ability to adapt, to be resilient, to persevere, and to maintain positive attitudes, even in the face of challenges (Luthans, Avey, Clapp-Smith & Lu, 2008; Pillay, Buitendach, & Kanengoni, 2014), all skills needed to successfully navigate, and complete the doctoral degree process.

Purpose of Study

The purpose of this descriptive study was to investigate the phenomenon of high doctoral program dropout rates from an angle of doctoral success, and to evaluate the degree of psychological capital and emotional intelligence in the transformational journeys of doctoral students. For this study, doctoral success is defined as completion of formal a doctoral program and conferment of a doctorate degree.

Chapter Summary

This chapter introduced the problem of high doctoral attrition rates as a phenomenon to be investigated. I introduced a theoretical framework which I used to view the problem, including Transformative Learning, Emotional Intelligence, and Psychological Capital.

Chapter 2: Literature Review

This chapter examines the literature as it relates to doctoral success. Sections include doctoral program attrition and relevant literature, Transformative Learning theory, Grit theory, Motivation and Goal theories (including content, process, and self-determination theories), Emotional Intelligence, and Psychological Capital.

Doctoral Program Attrition

Approximately half of doctoral students in the United States dropout (Cassuto, 2013). Despite the personal and professional benefits of a Ph.D. (Litalien & Guay, 2015), it is a long, challenging, and complicated process (Byers, Smith, Hwang, Angove, Chandler, & Christian, 2014). According to a compilation of national data on Ph.D. graduate rates across numerous STEM and Social Science fields (Council of Graduate Schools, 2008), the completion rates after 3, 4, 5, 6, 7, 8, 9, and 10 years in STEM fields range from 4.2% to 59.1% years, after 3, 6, and 10 years, respectively, while in the Social Science and Humanities field completion rates range from 5.0%, 26.0%, and 53.0%. The high attrition rate affects both STEM and Social Science fields. See Table 1 for specifics regarding these completion rate statistics. Figure 2 depicts the Science, Technology, Engineering, and Math (STEM) 10-year completion rates.

Table 1
Cumulative 10-year Doctoral Completion Rates by Broad Field by Percentage

Field	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr
Engineering	7.1	17.1	34.6	48.5	56.8	60.8	62.6	63.0
Life Sciences	4.2	9.4	21.7	42.6	53.7	59.6	61.9	62.9
Math & Physical Sciences	2.5	8.9	23.4	39.3	48.2	52.2	53.9	54.7
Social Sciences	6.7	11.5	20.8	31.0	40.9	47.5	52.7	55.9
Humanities	2.8	6.1	11.8	19.8	29.3	36.7	44.6	49.3
STEM	4.2	11.4	26.4	42.7	51.9	56.3	58.1	59.1
Social Sci/Humanities	5.0	9.1	16.6	26.0	35.8	42.7	49.1	53.0
Total	4.5	10.5	22.5	36.1	45.5	50.9	54.6	56.6

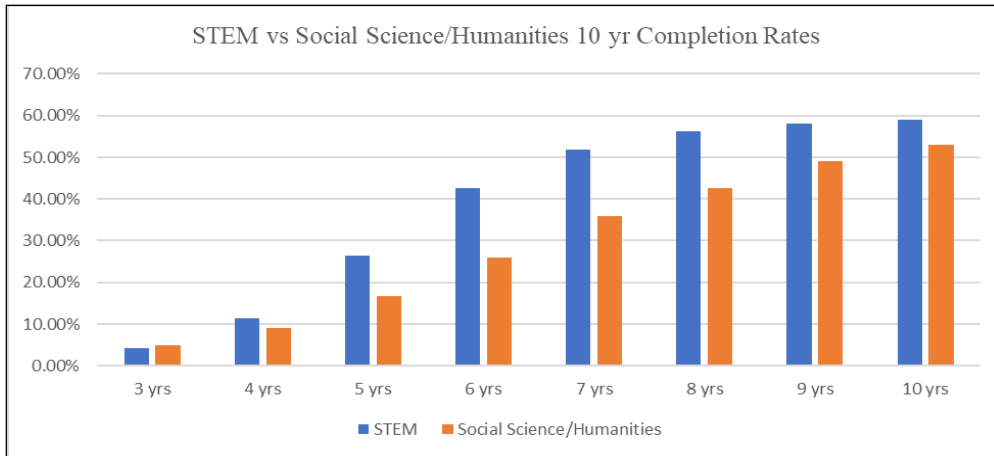


Figure 2. *STEM and Social Science completion rates.*

Earning a Ph.D. can yield many personal and professional benefits, such as better job opportunities, greater flexibility, better working conditions, higher income, greater knowledge production and distribution, social and economic growth, and innovation (Litalien & Guay, (2015). However, the journey to earn a doctorate degree is a long, challenging, and complicated process which involves a serious decision to first embark on the journey, and ongoing efforts to continue the process to matriculation (Byers, et al. 2014 2014). Furthermore, the doctoral study is difficult and is considered lonely, stressful, and challenging (de Valero, 2001; McAlpine & Norton, 2006; Smith et al., 2006). Despite the seriousness of the decision to start a doctoral program, only 50-57% of those who started the journey graduated (Council of Graduate Schools, 2008; Cassuto, 2013).

The doctoral process is transformational because it significantly changes individuals (Phillips & Pugh, 2010). It demands ongoing personal sacrifices in terms of time, money, and relationships (Herzig, 2002), and metaphorically speaking, is a marathon. Yet the difficulty of the process adds respect and meaning to the degree (Byers, et al. 2014). Considering the seriousness of the decision to begin such a journey, and the personal rewards received upon the completed goal, common sense dictates an assumption that most students, having made a highly

personal decision to begin the journey, will persist and graduate regardless of obstacles that might arise. Contrary to this assumption, the attrition rate of doctoral students shows otherwise.

In 2003, the average doctoral student took approximately 10.1 years to complete their degree (NSF, 2006). Additionally, the actual completion rate varies in terms of field of study. According to a 12-year study of over 30 institutions, five fields, 54 different disciplines, 330 programs, and 49 thousand students, the highest Ph.D. matriculation rates are in civil engineering programs where 78% of the students graduate. The social science programs, such as psychology, economics, and sociology, average about 56% graduates, and the lowest graduates are in the political science arena at 44% (Smallwood, 2004; Council of Graduate Schools, 2008;). Furthermore, the attrition rate for doctoral students increases by almost five times after six years in school (Council of Graduate Schools, 2008). Given these statistics, an inherent question is why is there such a large difference between the numbers of students who persevere and graduate in one field as compared to another? Additionally, considering these attrition rates and the large number of students, educational departments, and educational facilities affected by this problem, there is a dearth of research on this problem (Litalien & Guay, 2015). In the humanities fields, one in three will finish, two in three will dropout. Administrators think that some of the attrition is healthy, yet from a business perspective, attrition costs a lot of money, and takes a toll on dropout's lives. There is little known about the problem of high attrition in doctoral programs, and many departments are ignorant of the problem until faced with statistics.

Reasons for Failure

Some reasons for failure in doctoral programs include bad selections by programs, financial concerns, worry about prospective employment post-graduation, poor odds of succeeding, realization that part of the reasons to seek a Ph.D. is to seek external approval,

(Smallwood, 2004) and realizing a mismatch between the purpose for pursuit of a degree and desires (Smallwood, 2004). However valid the reasons for dropout, the personal, organizational, and societal costs are great (Litalien & Guay, 2015). Furthermore, monetary costs are not the only costs associated with failure. A loss in self-esteem, and reduced career offers may also occur (Litalien & Guay, 2015). Additionally, there is a significant loss of time which had been devoted to the process, and cost in loss of time also applies to the student's mentors and others involved in their programs (Litalien & Guay, 2015).

Other factors which are affected by high Ph.D. attrition rates include the effect that it has on the educational programs in terms of their monetary, relational, and time investment in students (Litalien & Guay, 2015). Clearly the student is not the only one affected when they dropout, and some fields are starting to notice that doctoral attrition is a problem.

Herzig (2002) notes that the field of Mathematics has become fed up with the high attrition rate of doctoral students (which ranges from 30-70%), the low percentage of minorities, and the lack of diversity of ethnic groups involved in their programs. This study identifies several difficulties in program completion and ill-preparedness of students. Some of the reasons students appear to be ill-prepared include not being ready to teach at undergraduate levels, which is part of their entry into the field. They are not ready to do research, and they do not utilize available resources (Herzig,2002). Integration into their program's social (socialization with faculty) and academic requirements also seem to be a contributor to risk of attrition because authentic participation in teaching and departmental social activities is a prerequisite of doctoral success (Herzig, 2002). Alternatively, when a cohort demonstrates cohesiveness and fosters bonding or support of social relationships with professors, attrition is reduced. These are

important things a doctoral student should know, yet they are assumed, or implied, and not well stated (Herzig, 2002).

Golde (2000) focuses on the stories of doctoral students and their reasons for dropping out of their programs. Interestingly, while other studies focus on the failures or shortcomings of the students themselves as the reasons for attrition, this study points out that there are departmental/faculty actions or behaviors that may also influence a student's decision to drop out. Additionally, the labels of success or failure, as ascribed to students, and the perceived association of these labels to students while they are still enrolled, may negatively impact student outcomes. Also interesting is the notion that students who do leave are possibly not comfortable with telling faculty exactly why they left. This study sheds light on the importance of departmental behaviors, the degree of involvement with doctoral students, and the impact that the absence of such open discussions can have on a doctoral student's decisions to drop out.

Other interesting research by Brailsford (2010), utilized semi-structured interviews to discover the reasons 11 individuals began and ended their doctoral journeys. These individuals alluded to loneliness as a reason for attrition. Respondents also referred to the role that initial supportive individuals play prior to beginning such a long process, and ignorance about the high attrition rates associated with doctoral programs before they started the process. This study provides responses from participants with prior work experiences, and some of the reasons for beginning this process were related to improving career outlook and proving self-worth. The study emphasizes the need to really fall in love with one's doctoral topic so that it will serve as motivation to persevere through a program.

A similar phenomenological study (Castro, Garcia, Cavazos, & Castro, 2011) also utilized semi structured interview questions to discover issues related to women enrolled in

doctoral programs. This study applied theories of emotional intelligence and resilience, and specifically how women tend to use negative events in their lives (such as rejection, loss, perceived slights, etc.) to drive them to succeed despite odds. Women tend to identify independence, a personalized locus of control, perseverance, proving worth through achievement, support by mentors and family, and a desire to overcome negative experiences such as perceived poor parental role models or support, abusive childhoods, or being separated from family, as reasons for student success. This study is one of the few that identifies psychological components as drivers of success in the pursuit of a doctorate.

While most literature focuses on the failure of students, Grover (2007) identified three components of a successful doctoral student: competence, motivation, and the ability to manage their education. He describes competence as the ability to learn and to utilize tools, motivation as the drive to continue a path despite problems, and management of their program as the ability to successfully negotiate an unpredictable and unstructured journey. He created a prescriptive staged model for successful doctoral journeys (Groover, 2007). This model discusses some challenges students encounter, and how students manage to move through these challenges so that they can complete their programs. Of interest is the observation that students do not have a good understanding of what the doctoral process looks like before they begin (Groover, 2007). The student is often ill equipped to transverse their program because the nature of the Ph.D. program is that it is an ill-structured one, and students are left to figure things out on their own. Having had a great deal of direction in past degrees, this is a new situation, with unique problems (Groover, 2007). While advisors can provide administrative direction, this is not always a sufficient solution. A common set of mistakes is identified by the author, and coupled with prescriptive solutions to avoid these pitfalls. Four stages of doctoral student study are identified:

exploration, engagement, consolidation, and entry (Groover, 2017). Also of interest in this article is the reference to a synergistic effect of both student motivation and student competence as fuel for a well-orchestrated program. Student mistakes include:

- Being too reactive
- Being too independent (not asking for help)
- Failure to build an asset base
- Not being politically astute
- Not creating synergy
- Not carefully evaluating opportunity
- Falling into a lull period
- Not managing doctoral committee
- Not managing advisor
- Being too ambitious
- Not making appropriate tradeoffs
- Leaving program too early

Perhaps, the most interesting, and useful parts of this article is the opinion that the students who leave, leave too soon because they are reactive. For example, reactivity might include receiving a poor grade or unexpected feedback on a paper and not taking time to process emotions before lashing out at a professor, or giving up, something that a well-developed emotional intelligent individual might handle differently. This is another indication that there must be some skills or strategies present in those who do not leave, allowing them to be successful and overcome obstacles.

Doctoral admission processes are competitive, and generally require a minimum grade point average, minimum graduate school exam scores, letters of reference, and interviews. Selection is generally based on the assumption that these requirements are good indicators or predictors of the capacity to complete their programs. If the average student attrition rate is high

across all disciplines, then perhaps the traditional selection procedures may need some review. If they are wrong half the time, these predictors can hardly be considered good indicators for student success. Furthermore, if these traditional methods are faulty half the time, they may not be measuring the meaningful predictors of student completion. Such a screening tool could be used in conjunction with other selection processes to help assist the selection committee with assessing whether an individual possesses the potential to flourish in the program, rather than flounder. The dropout rate is significantly higher in the first three years, possibly due to the rigor of required coursework, so a PsyCap intervention would probably be most useful during those first few years.

Skills Required for Success

There is very little published about the skills needed to be successful in a doctoral program. Literature does discuss some of the things that get in the way of success such as time management, persistence, difficulty with program rigor, and mismatched expectations, etc. (Byers, et al., 2014, p. 109). However, the research of specific psychological skills required for success, or those that are present in successful doctoral graduates, are scarce. The little bit that does exist states that support and encouragement from family and peers is important (Byers, et al., 2014). It also notes that some graduates report that resilience and persistence are present (Spaulding & Rockinson-Szapkiw, 2012).

Grit Theory

There must be other factors that are more indicative of student success than what has been traditionally measured. One current theory explained by Duckworth (2016) says that one of the definitive factors in determining whether an individual will succeed is grit, and that it is two times more important than talent in determining success (Duckworth, 2016). Grit is

independent of talent, changes, is dependent on a combination of hope, passion and perseverance, and is influenced by mindset and self-talk (Duckworth, 2016). Duckworth opines that “flow and grit go hand in hand, and that grittier adults report more flow, not less” (Duckworth, 2016, p. 130) and that gritty people ascribe greater significance to their goals (Duckworth, 2016), meaning they have a special attachment to the goals they establish and work for. Another special component of this theory is that Grit does not depend on a special talent, or solely on intelligence, but on determination and perseverance. It can be influenced by the degree of interest associated to a task and the attitude one has towards learning and those who appreciate learning and appreciate opportunities for life-long learning can impact their grittiness. The theory of Grit might play a role in the accomplishment of the doctoral degree.

Motivation and Goal Theories

Other factors which may influence an individual’s ability to succeed include motivation, goal, and self-determination theories. Motivation theories have evolved over the years as psychologists have postulated numerous theories about what it is that moves the human to act, to do what they do. There are two types of motivation: extrinsic and intrinsic. Extrinsic motivation is the motivation that is tied to something outside, it is not valued from within a person. An example of extrinsic motivation is when a child performs well on a test because she knew her mother wanted her to do well. Intrinsic motivation comes from within (Jones, 2014). It is something that is valued by the individual, and they perform an action because they enjoy it. Motivational theories can generally be divided into two categories; what (content) motivates or how (process) motivated.

Content Theories of Motivation

Hierarchy of Needs

In 1943, Maslow established his Hierarchy of Needs which essentially stated that the motivation to act is a need to satisfy requirements of human survival, and that lower level need satisfaction is prerequisite to higher order satisfaction. Some basic needs include food, shelter, and safety. The highest level of needs is a for self-actualization. Thus, according to Maslow's theory, the motivation to embark upon a process of self-actualization (such as a process of seeking a higher-level degree) is dependent on first having other basic needs met, including self-esteem, love and belonging.

McGregor's "X" and "Y" Theory

In 1957, McGregor wrote about his "X" and "Y" theory of motivation. This theory posited that there are two types of people, those who are ambitious, like work, are creative, and seek responsibility ("Y" people), and those who are complete opposites ("X" people). The "Y" people are self-directed, self-controlled, and do not require intervention or control. They are self-actualized, and do not rely on others. Contrary to "Y", the "X" people require external control, are focused on lower level needs, are not interested in self-actualization. This theory was an attempt to describe two very different groups of people within a work setting (Hattagandi, 2015).

Achievement Theory

McClelland offered an Achievement Theory of Motivation in 1961 which suggests that individuals have a need to achieve, a need for power, and a need to belong with others. The need to achieve includes the desire to better one's self and to succeed. The need for power is defined

by a drive to get things done through a control of other people, and the need to belong is what drives the creation of friendships.

The Equity Theory

The Equity Theory, presented by Adams in 1963, posits that motivation is based on a perception of justice or fairness, and that when things do not seem equitable that people are motivated to change what they can to achieve a perception of equity.

The ERG Theory

In 1969 Aldefer presented a theory based on a modification of Maslow's Hierarchy: The ERG Theory. This theory stated that people are motivated by the need for growth (G), or self-actualization, and that they need to relate (R) to others, and that they need to exist (E). Unlike Maslow's Hierarchy, Aldefer claimed that these needs could be met in any order, at any time. This theory seems more practical than Maslow's in that it provides an explanation for why a person who does not feel a sense of belonging could self-actualize.

Two-Factor Theory

Herzberg's Two-Factor Hygiene theory of motivation (1987) is simple: there are things that motivate workers, and there are things that do not. The things that motivate workers are intrinsic and include challenges, opportunity to grow, opportunity to be promoted, and opportunity to achieve. The motivation items are those satisfying items, but the hygiene items are those extrinsic items that do not satisfy and must be taken care of anyway. Some hygiene items include feeling secure in their job, having health insurance or sick leave, and having a nice office. If hygiene items are not met, they can cause problems (Pegler, 2012).

Content theories of motivation, while interesting, do not adequately explain what psychosocial skills doctoral students use to work for long term goals.

Process Theories of Motivation

Skinner's Reinforcement Theory

The first process theory of motivation was BF Skinner's 1957 Reinforcement theory. This theory is based on the premise that there are two types of behavior, that which is good and desirable, and that which is not desirable. In this theory, motivation originates from an external control of the behavior and is either increased or decreased depending on the application of positive reinforcement or consequences. An undesirable behavior can be decreased or eliminated through negative reinforcement or punishment.

Expectancy Theory

In 1960, Vroom presented the Expectancy theory of motivation which essentially posited that people will make choices based on the value they place on an expected outcome and that choices are meant to either increase pleasure, or decrease pain (Miner, 2015) and that the choices are dependent on three factors; expectancy, instrumentality, and valence (Miner, 2015).

Goal Setting Theory

Locke's Goal Setting theory stated that motivation is dependent on the establishment of a challenging goal and that if the goal is too easy or too hard, it will not be motivational. In his work on "The determinants of Goal Commitment" (Locke, Latham, & Erez, 1988), the importance of commitment to goals is discussed. These determinants include any influences from authority figures (external influences), inclusion in activities (interactive influences), and those that are related to internal rewards (Locke, Latham, & Erez, 1988). Goal Theory suggests that engagement in an activity depends on a combination of one's desire to participate and the meaning they assign to the activity. Meaning is influenced by ability, cultural differences, and perceived rewards (Midgley, 2002).

Achievement Goal Theory

Maehr (2008) proposes that motivation be viewed through a more unconventional lens as a situated social constructivist perspective rather than a state of mind. This Achievement Goal theory suggests that people set goals they want to accomplish based on their beliefs, the activity itself, and the rewards or consequences for achieving their goal (Midgley, 2002). Through this perspective, motivation is the impetus that people create to help reach an identified goal. It is dependent on others, and on the context. Achievement Motivation is a social-psychological group phenomenon and may or may not lineup with an individual's personal desires, and social contexts may upset participation in the goal pursuit Maehr (2008).

While these theories developed from a focus on identification of what motivates people and the processes involved in motivation and goal setting, they do not adequately identify how internal processes of motivation work. In 1999, two psychologists began discussing what internal factors motivate behavior, and this theory has had a major influence on the understanding of behavior.

Self-Determination Theory of Motivation

Edward Deci and Richard Ryan can be credited with establishing the Self-Determination theory (SDT) which shed a new light on the understanding of motivation, including internal and external factors. They point out that "most contemporary theories of motivation assume that people initiate and persist in behaviors to the extent that they believe the behaviors will lead to desired outcomes or goals" (Deci & Ryan, 2000, p. 227). According to these theorists, the amounts of motivation are not important, but the types of motivation are.

Types of Motivation

Deci & Ryan (2000) identified three types of motivation: amotivation (not engaged, no motivation at all), extrinsic motivation (motivation comes from something of external value, such as money), and internal motivation (the natural things people gravitate towards because they are challenging, or they provide what people find most enjoyable). Intrinsic motivation is that which people can get lost in because they love it so much that they lose awareness of time.

Motivation Continuum

Another new idea proposed with this theory is that motivation occurs on a continuum and that it depends on a combination of a person's feelings of control, their ability, and how connected they feel to a task (Deci & Ryan, 2000). A sense of autonomy is the amount of control one has over their actions. Competence is what they believe they can do well, and relatedness is the degree to which one feels like they belong with friends, coworkers, family, etc. SDT theory posits that when these three items are present that interest and subsequently, intrinsic motivation is present because humans instinctually have a need to solve these types of challenges (Deci and Ryan,2000). The degree of motivation is determined by the degree of control people believe they have, and the amount of value placed on the activity. Therefore, according to a continuum of motivation, if a person is challenged to reach a goal in which he feels he has no autonomy, no interest, and no relatedness towards, he will not be motivated at all (amotivation), and if a person feels they have a lot of autonomy, have an interest and value the activity, and feel connectedness, they will be intrinsically motivated.

Self-Directed Theory and Doctoral Pursuit

The Self-directed theory of motivation might play a part in understanding the desire to begin a Ph.D., but it does not adequately describe the psychological tools one would use to navigate through the rough times when the goal of the Ph.D. does not seem to match up with all the tasks involved in obtaining a Ph.D. None of these motivation theories adequately explain the skills that Ph.D. students report as drivers to succeed and persevere through their programs (Castro, Garcia, Cavazos, & Castro, 2011), nor do the explanations for dropping out include an absence of goals (Grover, 2007).

While there is some research on the high attrition in doctoral programs and some explaining factors which influence attrition, there is scant research on the specific psychological skills required to navigate such a long and transformational process. Admissions processes traditionally rely on standardized achievement tests, grades, and letters of recommendation, while little attention is paid to what is really required to be psychologically fit for such a journey. Considering the amount of department resources dedicated to accepted students, it is in the best interest of graduate schools to investigate other predictors of success in Ph.D. graduates.

Perhaps the educational system can borrow some of the psychological assessment measures employed in business to predict whether an applicant has the capacity to succeed at work, such as Emotional Intelligence and Psychological Capital skills.

Predictors of Workplace Success

Emotional Intelligence (EI)

Emotion has not always been considered a good thing in relation to success or the workplace. While the role of emotion has not always been considered in a positive manner, early philosophers, such as Aristotle, Plato, and Descartes, realized it was not something to be ignored

(Wilkinson, 2016). They viewed emotions from the perspectives of psychological, political (Aristotle), spirited (Plato), or regulatory natures (Descartes) (Wilkinson, 2016). In other words, they realized that emotions played some role in human nature.

The role of emotions and their influence on work was an evolutionary process. In 1958, Wechsler thought that something more than intelligence influenced success, and in 1962 Tomkins viewed emotions as a positive thing related to a person's whole being (Wilkinson, 2016). Emotions continued to be considered in writings on communication, and on how they influenced behavior and thoughts. This evolution proceeded into ideas about how emotion is related to success, and then to theory driven models of Emotional Intelligence with assessment measures. Please refer to figure 3 (adapted from Wilkinson, 2016, Petrides & Furnham, 2000), which depicts the evolution of the theory of Emotional Intelligence.

While there are different theories on Emotional Intelligence, it is important to note that research has consistently noticed that the presence of EI does make a difference in both personal, and work lives. For instance, Boyatzis, Rochford, & Cavanagh (2017) pointed out that an engineer's success might depend less on their actual intellectual ability, and more on their ability to get along with others, how they feel about their work, and whether they believe they are working with others on something important.

In a meta-analysis of over a 20-year period, Boyatzis & Saatchioglu (2008), examined the potential outcome of direct instruction of skills associated with successful individuals. These skills included the ability to combine the traditional cognitive intelligence with both emotional and social intelligence, to both use and to facilitate knowledge. Significant areas of improvement were noted in how aware individuals were of themselves, how they managed

themselves, and in how aware they were of others, and how they managed interactions with others.

EI theory has noted that the ability to manage emotions is important not only for individuals, but for leaders as well. The emotional state of a leader has the potential to significantly impact organizational disposition and output (Goleman, Boyatzis, & McKee, 2002). Thus, the leader's ability to control and to utilize emotions has the potential to inspire creativity and positive environments, or to stifle creativity and performance. A leader's emotional intelligence appears to be a powerful factor when it comes to successful organizations, and is more important when skills are matched (Goleman, Boyatzis, & McKee, 2002).

Models of EI.

There is general agreement that EI is an important component of success, but not agreement on where this ability is generated or managed. The disagreement in EI theory lies in the opinions about whether it is related to cognitive abilities (the ability model), to personality traits (the trait model), or to a mixture of both (the mixed model), and subsequently, in the ways that it is measured (Petrides & Furnham, 2000). Numerous assessment measures for EI have been developed and it is important to recognize their different theoretical perspectives. Please refer to table 2 for details about the various EI measurement tools.

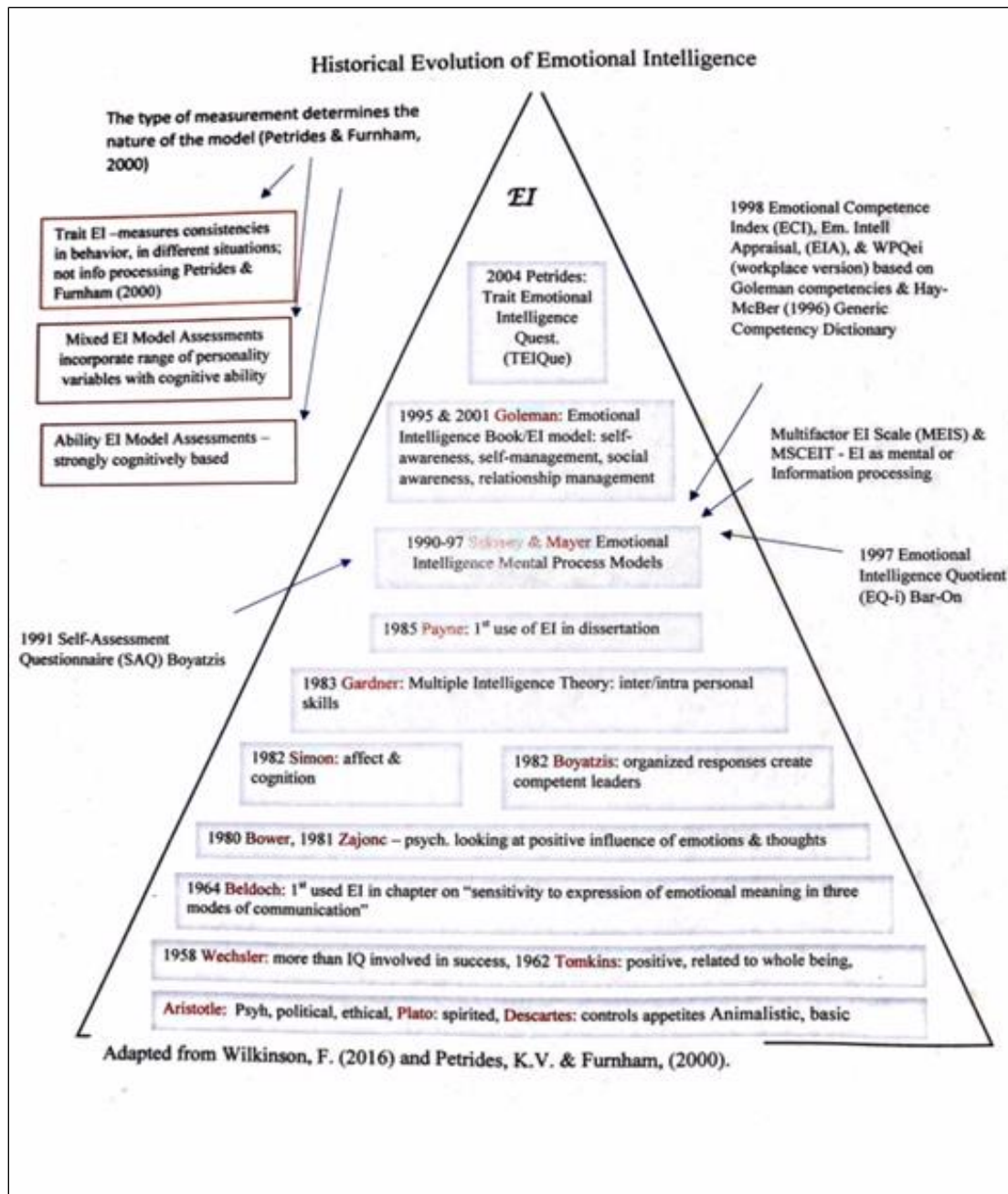


Figure 3. Historical evolution of Emotional Intelligence.

The Ability Model.

The ability model, based on theory by Mayor, Salovey, & Caruso (1997), is a mental information processing model. This model focuses on the relationship of emotions to cognitive ability. One evaluation measure of this model is the Mayer-Salovey-Caruso Emotional Test (MSCEIT) which evaluates performance on tasks that measure how well an individual performs when at his/her best (Stys & Brown, 2004; Petrides, Furnham & Mavroveli, S. (2007).

The Trait Model

The trait model, measures consistencies in behavior between different situations and places (Petrides & Furnham, 2000). It views EI as a personality trait and unlike the ability model, focuses on perceptions of emotions from self-reports. The Trait Emotional Intelligence Test (TEIQue) is a measurement of this EI theory and is based on Petrides & Furnham's initial theory of trait EI.

The Mixed EI Model.

The mixed model combines both performance potential and perceptions and is based on EI theories developed by Goleman, Boyatzis, and Bar-On. The assessments for these models examine competencies required for successful work performance. Goleman's assessments measure four competency areas (he modified his initial theory starting with 5 competency areas but later excluded motivation) which include awareness and management of self and awareness and management of emotions related to others. This EI theory recognizes that the ability to be aware of, and to manage, both self and responses to other emotions, is a critical element of workplace success, and that these abilities are consistent between situations. It also states that this ability is amenable to change through intervention and can be evaluated via self-report, or through the reports of others. Boyatzis & Goleman created the Emotional Competency index

(ECI) which utilized more than one rater, while both the Emotional Intelligence Appraisal (EIA) and the Work-Profile Questionnaire (WPQEI) are both based on Goleman's theory and are self-reported. The EIA has an option for another rater as well.

<u>Test</u>	<u>Theorist</u>	<u>How Measured</u>	<u>Description</u>
Mayer-Salovey-Caruso (MSCEIT)	Mayer & Salovey	Performance	Tasks measure ability Ability model, measures maximum performance
Emotional Quotient Inventory EQ-i	Bar-On	Self-report	133 items measure both ability and personality Mixed model
Emotional Competency Inventory ECI	Boyatzis & Goleman	Self-report other report	Multi-rater Measures behavior aspects of EI Mixed model
Emotional Intelligence Appraisal EIA	Goleman	Self-repot Other -report	Measures 4 components of Theory: Mixed model
Work Profile Questionnaire EI Version WPQei	Goleman	Self-report	Measures Goleman's' competencies required for performance at work Mixed model
Trait Emotional Intelligence TEIQue	Petrides & Furnham	Self-report	Measures Emotions of disposition and perceptions. EI is a personality trait

*Adapted from Stys & Brown (2004), and Petrides, Furnham, & Mavroveli (2007)

Psychological Capital (PsyCap)

People have certain skills which enable them to be more successful in the workplace, and that affect their overall psychological wellbeing (Luthans et al., 2007). Positive psychological capital (PsyCap), also developed out of the field of positive psychology, focuses on behavior skill sets common among successful, happy individuals.

Luthans, et al (2006) posits that people who are successful appear to have a combination of skills, which, when combined, act in a matter that is synergistic and more collectively powerful than any of the individual skills (Luthans et al., 2006). These state-like psychological capital skills make up *PsyCap Hero skills*, are measurable and malleable, and represents hope, self-efficacy, resiliency, and an optimistic attitude (Luthans et al., 2006; Luthans, Avey, & Patera, 2008).

Hope can be defined in several ways. A state-like definition: a “positive motivational state based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)” (Snyder, 2002, p. 250). According to this definition, hope is broken into two parts: willpower or determination, and pathways. Determination is what motivates someone to achieve their goals (Luthans, Avey, Clapp-Smith & Li, 2008), while pathways refer to different ways to accomplish goals, a skill which is useful when obstacles are encountered (Luthans, Avolio, Avey & Norman, 2007).

Self- Efficacy refers to the confidence one has to manage obstacles, or meet challenges. According to Bandura (1994), self-efficacy is the ability one has to get the job done regardless of obstacles which may arise. According to Luthans, Youseff, and Avolio (2007), self-efficacy is the self-reliance to begin, and the ongoing efforts to continue to persevere with personal goals, even when faced with challenges or obstacles. This definition incorporates Bandura’s meaning.

Self-efficacy also requires an ability to redirect ones-self as needed, and to be resilient when faced with challenges (Luthans, Youseff, and Avolio, 2007).

Resilience is defined as a “capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress, and increased responsibility” (Luthans, 2002, p. 702).

It is an important component of coping with stressful situations (Schetter & Dolbier, 2011). It is also defined as an ability to draw on resources to help return to one’s starting point after a stressful experience (Schetter & Dolbier, 2011), and (Hobfoll, 2011).

Optimism is the ability to see things from a positive perspective, and to believe that good things, not bad, will happen (Luthans et al., 2007). Realistic optimism, the ability to put a positive spin on things that happen and to believe that good things will happen rather than bad, builds hope, and enables one to bounce back quickly from setback (Luthans, Avey, Norman, Combs, & Avolio, 2006).

In 2007, Luthans, Avolio, and Avey, developed a PsyCap assessment tool which measures the degree of the synergistic effect of its combined subsets, and say that it “predicts performance and satisfaction better than any of the individual strengths that make it up” (Luthans et al., 2006, p. 388).

Common sense dictates that high PsyCap would benefit individuals in all walks of life. Employees can improve their psychological strength training (Luthans et al, 2006; Weyhrauch, 2010). Perhaps doctoral students can do the same Doctoral programs could potentially save a great deal of time and money if they both create programs to both identify those who need support in these areas at the onset of their journey’s, and then subsequently provide ongoing support in the form of direct instruction, or mentorship. However, with so few resources

available to identify requisite skills for doctoral success, the obvious place to begin is to investigate the phenomenon of the successful doctoral student and their psychological strengths.

Research Gap

A review of available literature on doctoral success showed that attrition is high across all disciplines, and that there is little known about the psychological processes involved in doctoral success. Phillips and Pugh (2010) opined that the doctoral process is transformational. Some studies identify support from family, friends, and peers as components of success (Byers, et al, 2014; Phillips and Pugh, 2010) and that resilience and persistence are involved (Spaulding & Rockinson-Szapkiw, 2012). Deci and Ryan's (2000) theory on self-directed motivation, and Duckworth's (2016) Grit theory may provide some insight into the creation of goals which are truly intrinsic, and potentially sustainable. Finally, theories associated with workplace success, such as Emotional Intelligence and Psychological Capital, might explain behaviors which transfer over into an educational setting, and facilitate requisite skills for doctoral success.

Chapter 3: Methods

This chapter discusses the methodology, research questions, hypotheses, risks, subject identification and selection process, data collection, procedures, data analysis, and how findings were reported.

Rationale for Phenomenological Method

The phenomenon of doctoral success was assessed in a qualitative manner because it was a story which could be told through questionnaires, interviews, and PsyCap and EI assessments. The doctoral student's story is complex, and was best examined from more than one perspective. I used a retrospective and phenomenological study design to collect data through both demographic and reflective questionnaires. This design enabled me to look at the experience of Ph.D. graduates at a basic level, which allowed me to see the nature of these types of experiences as remembered by participants (Savin-Baden & Major, 2012). Phenomenology supported the purpose of this study because I wanted to discover the common experiences of Ph.D. students. Creswell (2007) states that phenomenology is best suited for discovering commonalities amongst peoples. In this study, I explored the phenomenon of what experiences, strengths, skills, and support systems, have helped students remain in, or push through, their Ph.D. programs. Phenomenological research was a natural fit to help me answer my research questions because it allowed me to listen to the stories of the participants, and to evaluate their responses and find patterns that explain the answers to my questions.

Using measurement tools already in place to measure the constructs of PsyCap and EI made sense, but these scores alone would not tell me the whole story about what enables these students to persevere year after year in sometimes extremely challenging circumstances. I sought a whole picture and therefore I needed to use multiple methods to gather information. A

correlational analysis between the E.I. and PsyCap constructs provided some insight into the relationship between the two, and the E.I., PsyCap scores, and demographics were reported in tables and graphs and analyzed for trends between participant groups. Finally, a doctoral success questionnaire and interviews provided rich descriptive data into the thoughts and opinions of doctoral graduates about their journeys and the skills they believed they utilized to succeed.

Research Questions

This study investigated the answers to these research questions:

1. What strengths do Ph.D. graduates believe they utilize to successfully navigate the doctoral program? Are these skills consistent with the synergistic mixture of PsyCap as measured by their PCQ scores?
2. Is there a predictive relationship between Emotional Intelligence Quotients, PCQ scores and the number of years it took participants to graduate?
3. Is there a correlation between E.I. and PsyCap?
4. Do doctoral graduates have higher E.I. and PsyCap than those students just beginning their journeys?

Study Hypotheses

The following hypotheses were established:

H1: Doctoral graduates utilize PsyCap and EI to successfully navigate through their doctoral journeys.

H1₀: Doctoral graduates do not utilize PsyCap and EI to successfully navigate through their doctoral journeys.

H2: There is a predictive relationship between EI and PCQ scores and the number of years it takes students to graduate.

H2₀: There is not a predictive relationship between EI and PCQ scores and the number of years it takes students to graduate

H3: There is a correlational relationship between the EIA and PCQ scores.

H3₀ There is correlation between the EIA and PCQ scores.

H4: Doctoral graduates have higher EI and PCQ scores than students just beginning their journeys.

H4₀: There is no difference between the EI and PCQ scores of doctoral graduates and students just beginning their journeys.

Instrument Selection

Psychological Capital Questionnaire (PCQ)

To evaluate the presence of Psychological Capital, I used the Psychological Capital Quotient (PCQ) developed by Fred Luthans and Associates. Please refer to Appendix G for permission to use this assessment for research purposes. The PCQ consists of 4 items (hope, efficacy, resilience, and optimism) with reliability measures of Cronbach's alphas for each component, measured from four populations, is hope, (.72, .75, .80, .76), efficacy, (.75, .84, .85, .75), resilience, (.71, .71, .66, .72) and optimism, (.74, .69, .76, .79), (Luthans, Avolio, & Avey, 2007, p. 27). Cronbach's alpha for the whole test was consistently above .88. The PCQ has also undergone extensive validity testing (Luthans, Avolio, & Avey, 2007) and it shows both content and criterion validity. Scoring of the PCQ is based on a six-point Likert scale, which begins with a low rating of one, meaning strongly disagree, to a high rating of six, meaning, strongly agree. No score ranges are provided for strong, needs work, etc. Instead, the authors posit higher scores indicate more PsyCap (Luthans, Avolio, & Avey, 2007).

Emotional Intelligence Appraisal (EIA)

To evaluate the presence and level of Emotional Intelligence, I used the Emotional Intelligence Appraisal, ME consultant edition, developed by Bradbury & Greaves (2013). Please refer to Appendix I for permission to use this assessment for research purposes. The E.I.A, is based on Goleman's (2002) awareness and management of self, and awareness and management of emotion in others. This test was developed to test current level of EI, has been validated over a ten year period with significant reliability ($p < .001$) of 500,000 responses, and has both content and construct validity; the Cronbach's alphas for each component of .87 to .98 (Bradbury & Greaves, 2013, p. 21).

The EIA uses a Likert scale of six responses ranging from one (never) to six (always). There is a strong positive correlation between the sub components of this model and both the personal and social competency scores (Bradbury & Greaves, 2013), so the best use of this test is to rely not on the component scores, but the overall EI score (Boyatzis, Goleman, & Rhee, 1999). Scoring is based on normed values from over 10,000 assessments, and are reported in categories with values ranging from 90-100 (strength), 80-89 (strength to improve), 70-79, not a strength, but could be with work, (60-69) should work on this, and 59 or below is a concern to be addressed (Bradbury & Greaves, 2013).

Participants

Since doctoral coursework is generally rigorous during the first three years, and the completion rate more than doubles after year two (Council of Graduate Schools, 2000), one would presume that those sticking with it might have some type of skills that the dropouts do not. Cassuto (2013) reported an attrition rate of 50%. Conversely, per the Council of Graduate

Schools (2008) the average completion rate for five educational fields is only 4.5% after 3 years, 10.5% after 4 years, 22.5% after 5 years, and still only 56.6% after 10 years.

A doctoral journey is long and challenging and significantly changes a person (Phillips & Pugh, 2010), but students who have completed their programs have successfully navigated challenging coursework and overcome rigorous trials which required significant psychological coping skills. For this reason, I defined doctoral success as graduates of a program in an accredited university, who have been conferred with a doctoral degree. To provide an adequate assessment of the doctoral journey, and to evaluate the presence of identified skills at various check points of the journey, I extended my scope from graduates and included currently enrolled doctoral students.

Participants consisted of a purposive sample of doctoral graduates from one small doctoral program at a large research university in the southwest United States. I proposed a small sample size, between 15 and 30 subjects because the doctoral program in this university is small. This number provided a reasonable representation of a small department, and it was consistent with the appropriate sample size for qualitative studies. It allowed me to gather information from the administration of the assessments, and to gather rich supplemental data from participants through questionnaires and semi-structured interviews. This sample size was manageable in terms of conducting interviews, transcribing, and coding interviews, as well as providing opportunities to realize saturation, devote acceptable time to allowing the narratives to unfold, and to avoid reporting artificial findings (Creswell, 2007). I hoped to solicit an equal number of doctoral graduates to current doctoral students for this sample.

I solicited volunteers using snowball method which involved asking students I knew were either graduates, or currently enrolled students in the identified doctoral program, and then

asking them for referrals of other potential participants. I advised that there was no compensation for participation. Consent forms (Appendix C) were distributed to volunteers which explained the study and the potential risks associated with participation.

Risks

Risks are always associated with human subject research. However, there was only minimal risk associated with participation in this project. There was a risk of loss of confidentiality, and a risk of emotional upset related to psychological questions in studies. To mitigate these potential risks, questions posed were open-ended, and I did not probe, nor did I engage in any type of counseling. I was prepared for an unlikely event of emotional upset, and would have asked participants if they wanted to stop. Had subjects responded affirmatively, I would have ceased their participation. Furthermore, all questions in the measurement tools were posed from a positive psychological strength framework, and therefore were unlikely to solicit unhappy or negative emotions. To mitigate the potential loss of confidentiality, I went to great lengths to protect personal information. I stored data in secure locations, and the likelihood of breach was low. I de-identified participant information, and assigned pseudonyms for reporting purposes. I recorded interviews on my personal iPhone which is secured through a locked passcode, and once I transcribed interviews, I deleted the recordings. All online assessments were done using numerical codes. I stored assessment codes in a secure file on a personal password protected computer.

Procedure

The IRB approval was received (see Appendix H) and participation was solicited using the snowball method. Signatures were obtained indicating consent to participate, and any

questions about the study were answered. Signed forms were placed in a secure, personal, password protected computer where they will be stored.

Demographic Questionnaire

Demographic data was collected using a demographic questionnaire (please see Appendix D). In addition to basic demographic questions, these forms also asked about time in the doctoral program and dates that the participants had reached certain milestones, such as the date that they completed their coursework and passed comprehensive examinations. These forms also asked if it was ok if I contacted participants so that I could administer assessments, and schedule semi-structured interviews with doctoral graduates.

EIA and PCQ Administration

Once demographic data was obtained, I assigned numeric codes and pseudonyms to participants. Using both the EIA and PCQ test administration sites, I followed the test technical manuals and created logon information for participants, and scheduled invitational emails to each participant. Participants then logged into their secure sites and took their personal evaluations. Once all EIA and PCQ assessments were complete, I downloaded the scores to excel and completed an analysis. Current doctoral students completed demographic forms and formal assessments (PCQ and EIA) only, while graduates (who were willing) completed an additional doctoral success questionnaires and interviews.

Doctoral Success Questionnaires

Doctoral success questionnaires (Appendix E) were provided to doctoral graduates. Once they were complete, I transferred data (by numeric code only, no names) into an excel spreadsheet for future analysis.

Interviews

Semi-structured interviews were performed in person, or on the phone and did not last more than one hour. They consist of 4 open-ended questions. (Appendix F). Some participants, unable to interview, completed their interview questions by typing their own responses and submitting the form to me. I recorded interviews so that I could transcribe and analyze them later. If a participant became uncomfortable with the interview I provided them the opportunity to stop interview immediately and withdraw from the study. I assured confidentiality by assigning pseudonyms for each participant in data analysis, and any written reports.

Data Analysis

Data from the demographic questionnaires, doctoral success interviews, and EIA and PCQ assessment measures were analyzed using excel worksheets. I transferred data to worksheets and assigned numeric codes, and analyzed data by frequency of responses. I performed a correlational analysis using excel as well, setting my significance level the standards acceptable for my field ($p < .05$).

Upon completion of interviews, I began coding using Saldana's (2013) general coding maxims so that I could begin to work on forming categories and themes from the data. Coding consisted of reading transcripts and assigning codes to meaningful statements. I utilized an excel to assist with coding. When all transcripts were coded, I created categories to group coded responses by relationships. To ensure accuracy of my coding process and trustworthiness of this study, I worked with an independent individual to ensure my codes were appropriately identified. There was agreement on most codes, except for two which were then discussed, and re-coded.

Finally, I identified themes consistent with theme analysis described by Shank (2006) and Corbin & Strauss (2008). This allowed me to identify some common experiences of Ph.D.

students which contribute to their strengths and which help them complete their journeys. I also made personal memos in an excel sheet as I analyzed responses and attempted to discern patterns. I revisited research questions through this process to determine if the data from my research could the desired information and explain the phenomenon of doctoral success. This was an iterative process which required revisiting the coded statements and allowing the emergent themes to solidify.

I reported my findings of the qualitative portion of this study in narrative and summary form, attempting to provide as much detail about the experiences of Ph.D. students as I can, while also attempting to determine and report how frequent and common some of the findings are to the group, and identify what is unique.

I reported the data gathered from the EIA, PCQ, and doctoral success questionnaires, as frequency distributions. I compared the EIA and PCQ scores by ages, gender, time in the doctoral program, and participant type (student vs graduate), and discussed how these constructs affect doctoral student success. I also performed an analysis to determine correlation of the relationship between PsyCap and EIA.

Chapter 3 Summary

This chapter summarized a phenomenological approach to investigating doctoral success, a snowball approach to soliciting participants, the instruments selected (demographic questionnaires, PCQ and EIA, doctoral success questionnaires, and semi-structured interviews), the research questions and hypotheses, risks, procedures, data analysis, and reporting methods.

Chapter 4 Results

A tri-fold theoretical lens was applied to the phenomena of doctoral success. I used a snowball approach to solicit participants from a small graduate department within a large research university in the southwest United States (n = 23). Assessments focused on the examination of psychological strengths involved in a successful doctoral journey via collection of demographic questionnaires, open-ended interviews, success questionnaires, and the administration of the Psychological Capital Questionnaire (PCQ) and the Emotional Intelligence Appraisal (EIA). To provide an adequate picture of both groups and to ascertain differences between the two, both doctoral graduates and currently enrolled doctoral students were included in the demographic inquiry and the psychological assessments. Doctoral graduates participated in an additional interview and success questionnaires so that their success could be described. This section reports the findings of the demographic questionnaire, the themes identified in the interview questions, the success questionnaires, both psychological assessments, the treatment of missing data, analysis of data, the methods used to assure accuracy of data, and a comparison of the findings to major theories.

Demographics

The sample (n = 23) included 14 students and 9 Ph.D. graduates. Of these 14 students, 8 were female and 6 males. Six of the nine total Ph.D. participants were female, and three were males. The average number of years a current doctoral student participant took to reach the ABD milestone was 4.6 years (only seven of the 14 reported) and the PhD graduates reported an average of 4.1 years to reach that same milestone (only seven of nine participants reported), and another 1.7 years to graduate. The average amount of time graduates spent in the PhD program was six years and ranged from four to ten years.

The specifics regarding the average students' ages at program start, race, average number of years spent between acceptance to completion of coursework and comprehensive examinations (ABD) are listed in table 3.

Table 3
Student Demographics

<u>Level</u>	<u>Gender</u>	<u>Number</u>	<u>Race</u>	<u>Avg. Age</u>	<u>YRS to ABD</u>
Students		14		40-50	4.6
		8F		40-50	5.2
		5	White	40-50	4.5
		1	Hispanic	30-40	4
		2	Other	30-40	6
		6M		30-40	3
		3	White	30-40	3
		3	Hispanic	20-25	3

The specifics regarding the average graduates' ages at program start, race, average number of years spent between acceptance to completion of coursework and comprehensive examinations (ABD) and average number of years spent between ABD and graduation are listed in Table 4.

Table 4
Doctoral Graduate Demographics

<u>Level</u>	<u>Gender</u>	<u>#</u>	<u>Race</u>	<u>Avg. Age</u>	<u>Yrs. To ABD</u>	<u>YRS ABD to PhD</u>	<u>TTL YRS PRGM</u>
PhD		9		50-60	4.1	1.7	6
	F	6		50-60	3.3	1.8	5.7
		3	White	50-60	5	3	7.3
		3	Other	60-70	2.7	1.3	4
	M	3		50-60	5.3	5.3	6.7
		1	White	60-70	9	1	10
		2	Hispanic	40-49	3.5	1.5	5

Interview Results

To investigate research question number 1, *What strengths do Ph.D. graduates believe they utilize to successfully navigate the doctoral program*, I administered interviews and a doctoral success questionnaire. Nine interviews were performed. Responses to semi-structured questions were transcribed and coded with participant number so that participants would not be identified. Transcribed responses were pasted into an excel worksheet (one page per question) where initial notes were identified by highlights and repetitive responses to each question were highlighted and grouped into categories based on commonalities. After categories were identified, they were entered a coding scheme worksheet for reference.

Codes were created in the coding scheme worksheet and then the text of the interviews were coded. To ensure trustworthiness of this study a consult was performed with an independent individual who was asked to code 3 interviews and compare findings with this researcher's codes. There was general agreement except for 2 codes which were then discussed and adjusted. After the interviews were coded, themes were created, and color coded in excel for easy identification. Several themes emerged, and some appeared to overlap and, so they were combined to make one theme.

Interview Question 1A Results

The first question, "Please describe your doctoral journey, providing some information about challenges you encountered and what you did to overcome the challenges so that you could be successful" yielded three challenging areas encountered during a doctoral journey. Problems with the faculty or program were the largest concern, followed by balance and emotional problems. The challenges encountered are depicted in. See figure 4.

Joe reported problems with the faculty/program: “I lost chair due to death, then another due to retirement. There seemed to be problems with not having enough faculty to teach classes regularly, and I didn't have guidance. There was an assumption that all students had the same background, but I had no contact to go to. This translated into time, and time into money. This is a burden on the student. I am an ESL student and there was no clear path for students like me coming from another environment. There was a lot of difficulty, a lot of back and forth which was very discouraging.”

Program problems were also mentioned by Cindy: “the program was setup around the idea that grad students worked in teams was challenging and there were times that was really a challenge, just having to give up control on that was challenging.” She describes emotional challenges when she reports: “the challenge was believing in myself.”

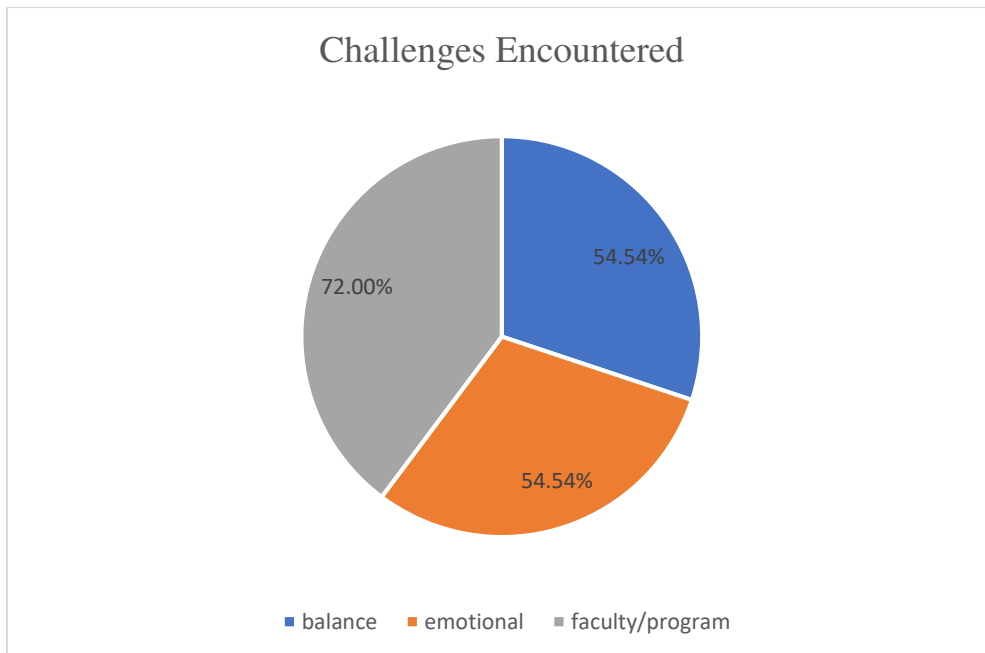


Figure 4. Challenges encountered in the doctoral program.

Lina described balancing rigorous demands of the academics with her “terrible writing blocks” and needing more time for assignments: “when I needed more time for assignments I took incompletes, so I could really learn the material and write the paper.”

Eva said “I did not expect the dissertation to be this much of a challenge. I mean I did not anticipate that it was a psyche cleanser. Bumping into so many things I didn't even know were inside me at the weirdest moments has caused a lot of anxiety.”

Paul disclosed, “You go thru the ups and downs and know you are going to fail. I was intimidated, I was unprepared.”

Interview Question 1B Results

All the participants identified support as the most frequently involved method of overcoming challenges associated with their PhD journeys. Support included role models, mentors, experience, family, friends, and faculty. Please refer to table 5 for details.

Interview Question 2 Results

Four main themes emerged from this question asking the participants to reflect on the psychological skills they used to navigate through their doctoral journey. The themes identified included maintaining balance, actions they took, support they received, and beliefs they held. Please see tables 5-8 for percentages of these responses.

The theme of maintaining balance included items that participants did to make sure they could manage all the demands of school, personal, and professional lives. Eva provides an example of balance and action. “I became an athlete” and started playing “games to provide a distraction; they relieved stress.”

The action theme examples such as this statement from Tom who stated: “I have 25 years life experience which has taught me to adapt, improvise, and overcome” and this quote from Janice

“I journaled to manage anxiety. I had a determination to finish and visualized success with confidence.” Cindy, states “I learned to be resilient in statistics. I learned to overcome the idea that I wasn’t as smart as I thought I was in that area and realized that professors and others I was dealing with had been there and understood what I’m up against and I learned to be resilient, that I would survive.”

All participants expressed that support was a large part of their ability to persist through their doctoral journeys. Lina explained action and support as “Mentors nurtured and believed in me and I began to believe in myself.” Fanny shared “I had a great deal of support from family and I had mentors who helped direct and encourage me along the way. My parents, husband, kids, and friends were all behind me and I knew they were watching me so I plowed ahead, even when I didn't feel like I could. I come from a family of hard workers; we do not quit.”

Table 5
Psychological Strengths Theme 1: Balance, 6/9, 66.7%

Paul

- commitment, routine, planning, being on top of projects
- make sacrifices, give up attendance at a concert

Eva

- became athlete, games provide distraction to relieve stress.

Lina

- took incompletes so I could really learn the material and write the paper

Janice

- journaled to manage anxiety
- participation in extra-curricular activities

Fanny

- learned to schedule time for everyone in my life so that I felt like I was spending time with those who are important to me
- Stayed in the moment instead of worrying about the future
- Identified my boundaries and took care of myself

Tamera

- I had to make sacrifices, sometimes could not do the things I wanted to do
-

Examples from the beliefs theme include Cindy’s example. “I knew I could do it, I wanted to do it and believe I could do it.” Janice shared: Self-assurance helped when I procrastinated...” Joe shares that “I had belief that God wanted good things for me, that He wanted me to finish and that He would help me do it.” Fanny stated “I believed in myself. I knew that if I stayed on track with the plan that I could accomplish anything. I would remind myself that I had what it takes and when I came up against a wall I figured out how to bounce back. I questioned myself along the way, especially when it seemed like things just weren’t making sense, but I never allowed that to stop me because I knew that doubt would undo my resolve to finish.”

Table 6

Psychological Strengths Theme 2: Action, 6/9, 66.7%

Paul

- a lot of multitasking, get things done

Lina

- I’ve had a whole lot of opportunities to learn how to get through things, to learn to be resilient, turn challenges into strengths

Tom

- 25 years of experience
- adapt, improvise, overcome

Janice

- visualized success with confidence
- extra-curricular participation in [department name] activities
- give up on control
- learned to be resilient in statistics

Fanny

- I identified my boundaries and took care of myself
- Stayed in the moment instead of worrying
- Plowed ahead, even when I didn’t feel like I could
- Took breaks when I needed and then got right back into the fray and plowed ahead
- I set short term goals because sometimes the larger ones were overwhelming. Short term goals helped me feel like I had accomplished something, and I rewarded myself with little things along the way.

Eva

- I became an athlete and (playing) games provided distraction
-

Table 7

Psychological Strengths Theme 3: Sources of Support, 9/9, 100%

Paul	Janice
• a lot of encouragement	• faculty, clear expectations, deadlines
Eva	• faculty planned for transitions
• family very supportive	• tremendous support from my husband and children
Lina	Cindy
• Mentors nurtured and believed in me	• my mother was a role model.
Joe	Fanny
• mentor	• Tremendous amount of support from parents, husband, kids, mentor
Tamera	Tom
• several mentors	• Mentor from 1967
	• 25 years of experience

Optimism is the overcomer belief/attitude expressed by Cindy: “I had to learn how to overcome the idea that I wasn't as smart as I thought I was in that area, and realized that professors and others I was dealing with had been there and that they understand what I’m up against....and you learn to be resilient, that you will survive. I sailed through my Bachelors and my Master's and so coming up against these things that suddenly were barriers - that was a whole new- learning opportunity. People in group were just pulling out and disappearing. I'd never had to deal with that kind of thing before. The shock of new barriers challenged to change.”

Interview Question 3 Results

Interview question 3 focused on the faculty and program. The question was “Looking back throughout your time as a doctoral student, please name 1 or 2 things the department or faculty did which helped you be successful.” Two themes emerged in response to this question: a respectful faculty and clear program expectations. Tom explained that “they asked me how I was, they were interested, engaged, and answered my questions. They were open to my concerns, provided time, attention, were approachable and provided clear expectations, deadlines, and made clear transition plans when the faculty left.” Lina stated that she “received support, flexibility, and autonomy.” Cindy shared that “she was nurtured, they broke it [the

program] down so it was manageable, and the multidisciplinary participation made it interesting.”

Interview Question 4 Results

The final interview question was “Looking back throughout your time as a doctoral student, please name 1 or 2 things the department or faculty could have done differently to help you be successful.” There were too few responses to identify recurrent themes, and most responses were positive. Two areas of concern included communication of expectations and career orientation. Tom shared that he would like to have had “clearly stated program expectations about programs to be used prior to milestones” and Cindy explained that she would have preferred faculty “encourage me to plan more about a future career once my program was completed.”

Doctoral Success Questionnaire Results

Six of the 9 Ph.D. doctoral graduate participants completed the doctoral success questionnaires. This questionnaire asked multiple choice and open-ended questions to determine what psychological skills participants utilized in certain situations. Participants were provided with the operational definitions of each skill as noted in table 9. The definitions were based on the PsyCap and EI theories. Participants were advised to choose all the answers that applied or to leave blank if none applied. The results of the responses to this tool are represented in Figure 5. Resilience and self-efficacy were the most frequently chosen responses (32 responses), Emotional Intelligence was the second most frequently chosen (29), while hope (25) and optimism (20) had the least responses. The responses varied according to the question and situation. An example of was “If you ever questioned yourself about continuing your journey,

Table 8

Psychological Strengths Theme 4: Beliefs/Self-Talk, 8/9, 88.9%

Eva

- Bumping into so many things I didn't even know were inside me at the weirdest moments have taught me that I have to be able to figure things out and cope.
- finding that thing inside that helps me keep going helped me become resilient.
- An optimistic attitude about myself and the outcomes has probably been the thing that has kept me going.

Lina

- became involved in activities to overcome challenges so I could master them
- if I say I will do something, I do it
- I believe in myself

Paul

- I had to believe in myself
- I believed that accomplishing things reflects well on family and community

Janice

- Faith
- determination to finish
- I had belief that God wanted good things for me, that He wanted me to finish and that He would help me do

Cindy

- challenge was believing in myself
- I knew I could do it, wanted to prove to world I could do it
- learned to be resilient, I'd survive
- learned to overcome idea that I wasn't as smart as I thought-in that area

Fanny

- I believed in myself, questioned myself sometimes when it seemed like things just weren't making sense- but never allowed that to stop me because I knew that doubt would undo my resolve to finish, knowing that perseverance would pay off. I relied on the belief that I could do this, one step at a time.
- I did not expect the dissertation to be this much of a challenge. I mean I did not anticipate that it was a psyche cleanser.

Joe

- Confidence, belief in God
- learned to schedule time for everyone in my life so that I felt like I was spending time with those who are important to me
- Stayed in the moment instead of worrying about the future
- Identified my boundaries and took care of myself

Tamera

- I had to make sacrifices, sometimes could not do the things I wanted to do
-

Table 9

Operational Definitions of Psychological Skills

Resilience	the ability to bounce back from adversity, conflict, failure, or even positive events.
Optimism:	the ability to think positively and to believe that good (rather than bad) things will happen.
Hope:	the willpower and determination to achieve goals.
Self-Efficacy:	relying on oneself to begin and continue to persevere with personal goals, even when faced with obstacles or challenges.
Emotional Intelligence:	the ability to combine intelligence with emotions (being aware of and managing personal emotions, recognizing emotions in others, and managing relationships).

*adapted from Luthans, 2002, p. 702

please identify what strengths you used to persevere?” and “If you had trouble deciding on a topic for your dissertation, or were ever overwhelmed by the edits or feedback you received at from your committee, please identify what strengths you used to overcome these issues?”

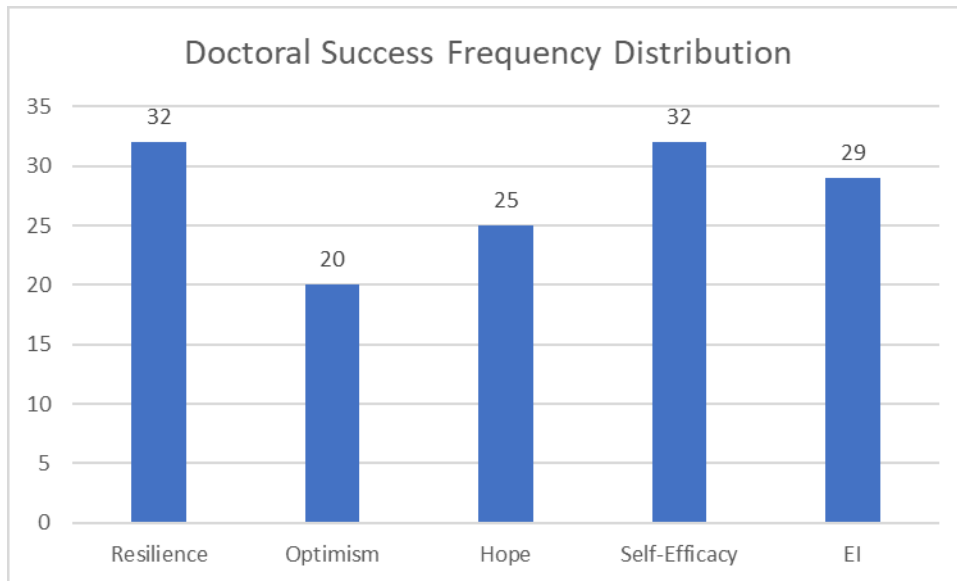


Figure 5. Doctoral success frequency distribution.

Additional strengths reported in the “other” section of the Success Questionnaire included “family strength and unity, professional experience, accomplishments, networks to support my journey, professional network, patience, character, integrity, determination, and self-esteem.

Psychological Capital Quotient (PCQ) Results

Transform reported the PsyCap scores numerically, and provided each participant with a text summary of the meanings for scores in each of four areas: resilience, optimism, hope and self-efficacy, and it provides an overall PCQ score. Due to copyright, samples of reports could not be replicated here, but each report includes a definition of the elements and some examples of how it might be manifested in the work place. Each report explains how to use the report and how each participant can develop their skills, noting that the higher the scores, the better. Scores were based on a six-point Likert scale with one indicating strong disagreement, and six indicating a strong agreement. All assessments were completed by the participant themselves and considered a self-rated profile. The reports included a list of the top strengths and identifies areas where they could improve. The PCQ central tendencies are listed in table 10.

Table 10

PCQ Scores - Central Tendency

Mean	5.24
Median	5.3
Mode	5.3
S.D.	0.46
Range	1.8
CI (95%)	0.21

The Group results are represented in the box and whiskers plot in figure 6, and the frequency distribution of scores in figure 7.

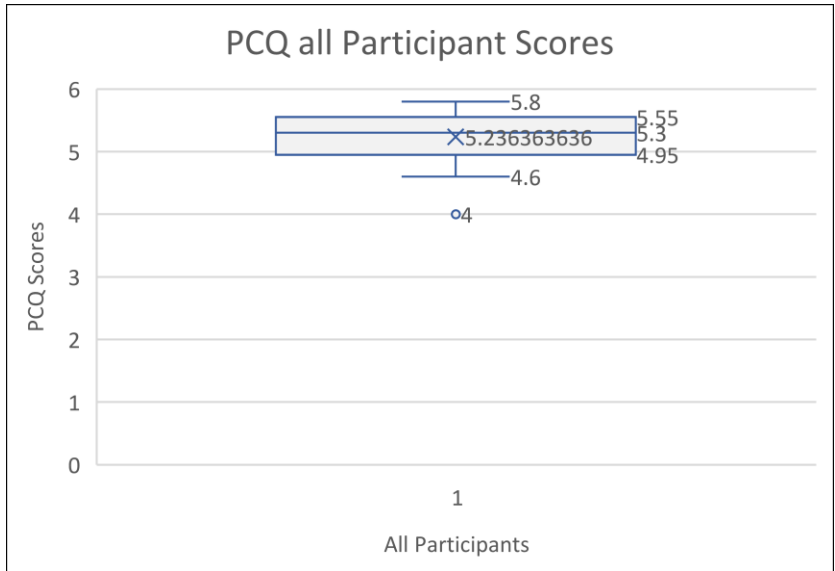


Figure 6. PCQ scores box and whisker plot.

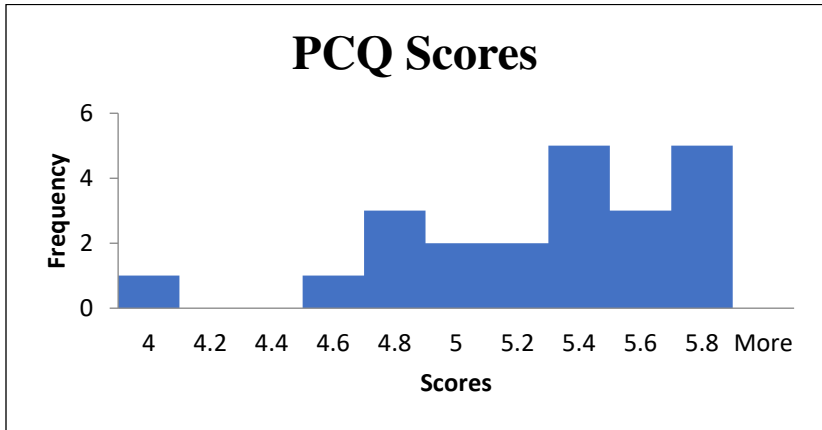


Figure 7. PCQ frequency distribution.

PCQ Students vs Doctors

The difference between PCQ scores for the doctoral graduate participants and the current doctoral students is depicted in figure 8. The current students score slightly higher in all areas on this assessment. Both groups score lowest in Optimism.

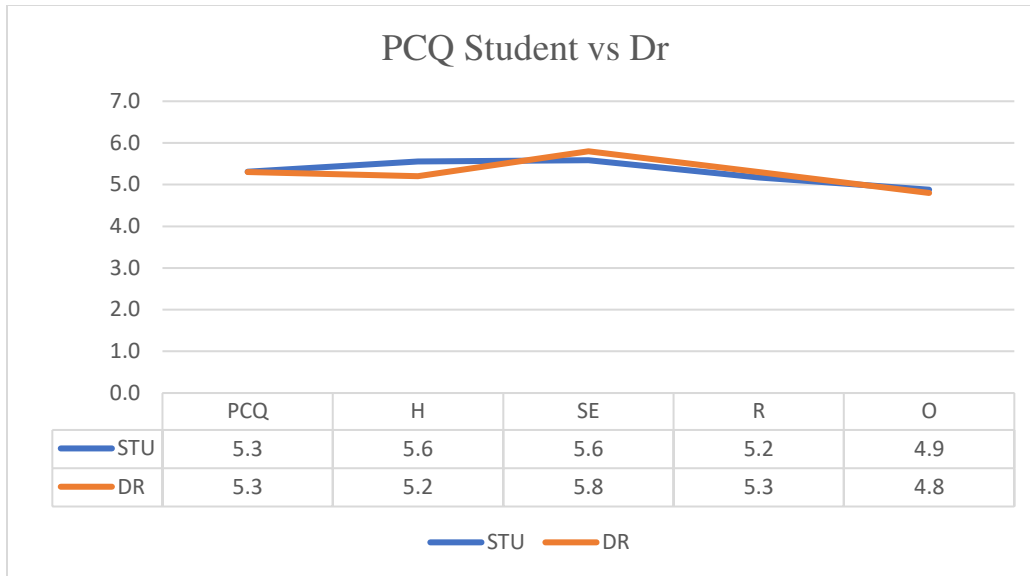


Figure 8. PCQ score comparison student vs doctor.

PCQ by Gender

A comparison was done to evaluate if there was a difference in PCQ scores based on gender, or based on the amount of time spent in the program. The comparison of gender scores shows that women score higher in self-efficacy than men (women = 5.65, and men 5.3), and in overall PCQ scores (women = 5.31, men = 5.13). See figure 9.

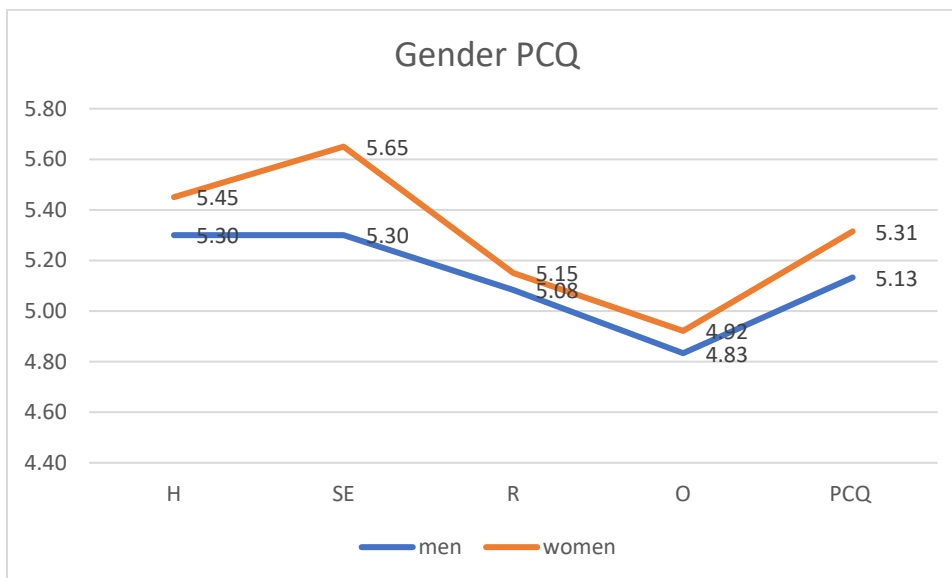


Figure 9. PCQ score comparison by gender.

PCQ by Age

A comparison of the PCQ scores according to age show that participants in the 30-40 age range have the highest hope score (5.6), those in the 40-50 range have highest self-efficacy (5.6), the 70-80 range has the highest resiliency (5.8), and that the 30-40, 40-50. And 50-60 groups all tie for the highest optimism scores (5.0). The highest overall PCQ was in the 30-40 range (5.4) and the lowest in the 70-80 range (3.3). See figure 10 for specific regarding this comparison.

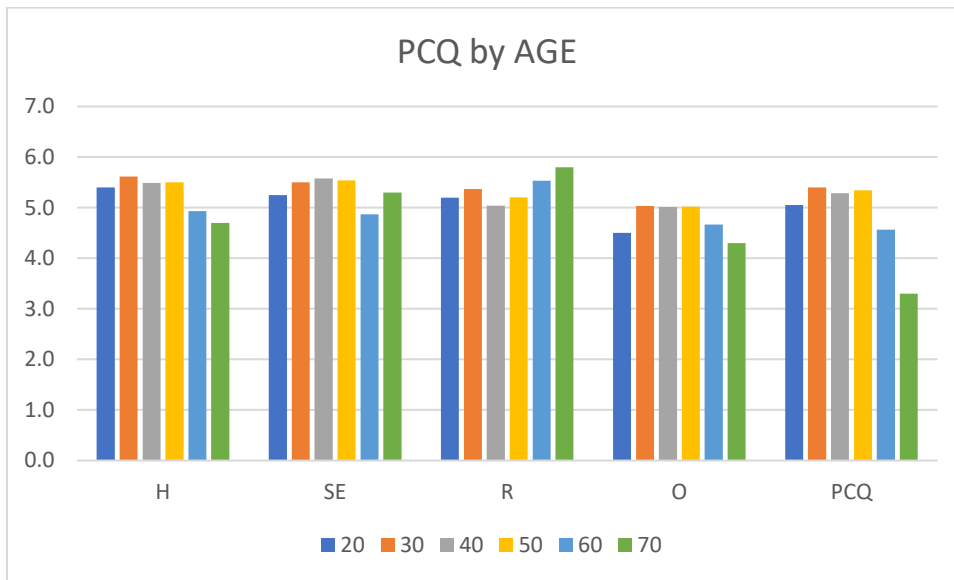


Figure 10. PCQ score comparison by age group.

PCQ by Time in Program

Finally, a comparison was performed between the participants in the program 5 years or less (group B) to those in for 6 or more years (group A). Those in the program 6 or more years had higher scores in all areas than those in for 5 years or less. Please see figure 11 for specifics regarding these scores.

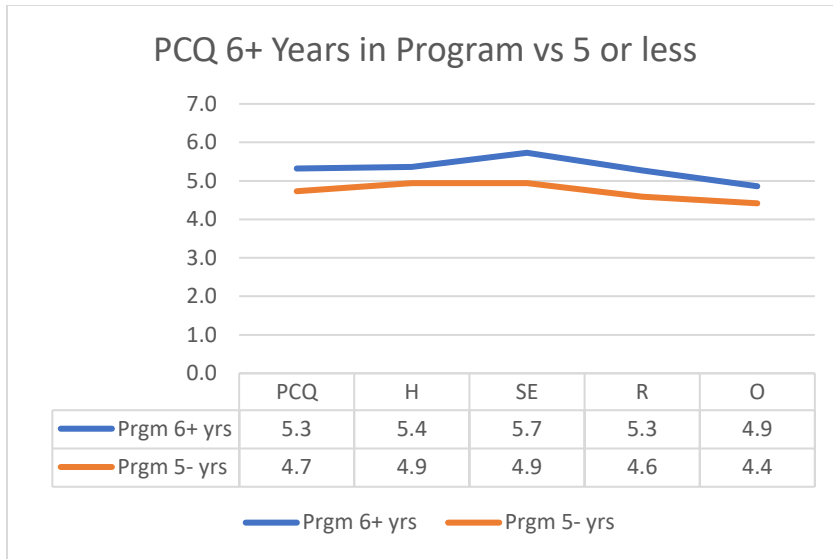


Figure 11. PCQ score comparison by time in program.

Please see table 11 for a summary of all PCQ mean score comparisons done.

Table 11
PCQ Mean Score Comparison Summary - All Areas

PCQ	Whole Group	Drs. vs. STU	5.3	by gender	5.13	by age	3.3	Stu by time	5.3	Dr. by time	5.3
Possible scores range from 1-6	5.24	Dr. STU	5.3	M	5.13	70-80	3.3	Grp A	5.3	Grp A	5.3
*higher scores are best		STU	5.3	F	5.31	60-69	4.6	Grp B	4.7	Grp B	4.5
						50-59	5.3				
						40-49	5.3				
						30-39	5.4				
						20-29	5.1				

*Group A = 6+ years in program, group B = 5 years or less

Emotional Intelligence Appraisal (EIA) Results

The EIA, developed by Bradbury & Greaves, (2013) measures participant abilities to manage emotions related to both self and social awareness. Categories of self-management include the ability to be aware of, and regulate, emotions while social awareness relates to the ability to be aware of and respond to the emotions of others (Bradbury & Greaves, 2013).

Talentsmart reported the EIA scores numerically, and provided each participant with a text summary of the meanings of scores in each of four areas: personal competence (which

consists of both self-awareness and self-management), and social competence (which consists of social awareness and relationship management.) Scoring is based on normed values from over 10,000 assessments, and are reported in categories with values ranging from 90-100 (strength), 80-89 (strength to improve), 70-79, not a strength, but could be with work, (60-69) should work on this, and 59 or below is a concern to be addressed (Bradbury & Greaves, 2013).

Due to copyright, exact reports could not be replicated here, but each report included a definition of the elements and some examples of how it might be manifested in the workplace. The reports explained how to improve the scores in each area. The EIA central tendency scores are listed in table 12.

The results of the entire group of participants are represented in figure 12 and in a box and whiskers plot in figure 13. These scores show that overall, the group ($\bar{x} = 78.45$) falls into the “not a strength” category.

Table 12
EIA Scores - Central Tendency

Mean	78.45
Median	78.5
Mode	80
S.D.	6.55
Range	23
CI (95%)	2.90

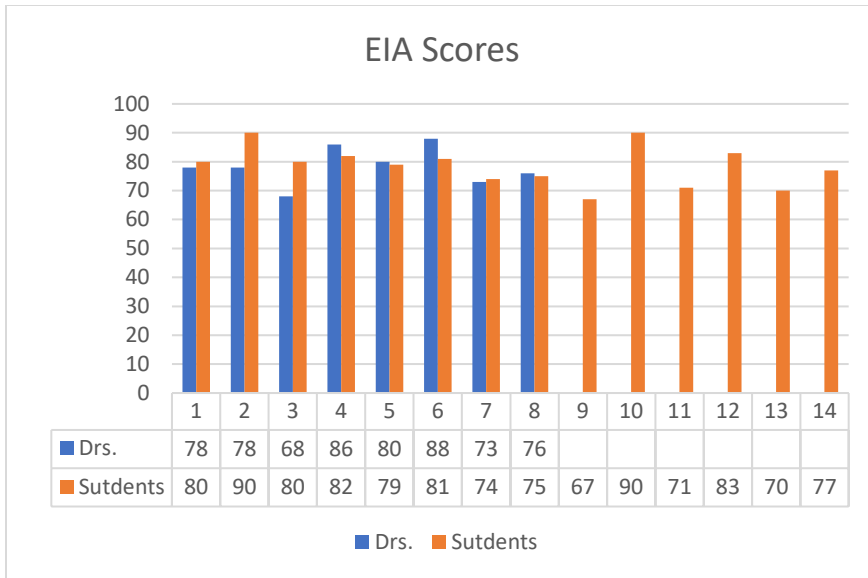


Figure 12. EIA score distribution.

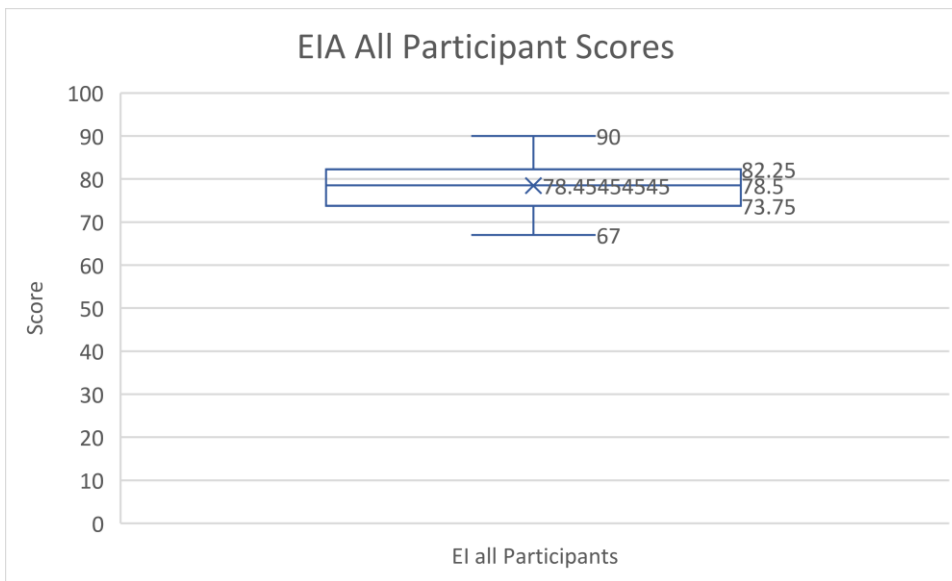


Figure 13. EIA score box and whisker plot.

EIA Students versus Doctoral Graduates

The average EI scores for current doctor students was slightly higher ($\bar{x} = 78.5$, mode = 80, median = 79.5) than the doctoral graduates score ($\bar{x} = 78.38$, mode = 78, median = 78). See figure 14 for chart comparing these two groups.

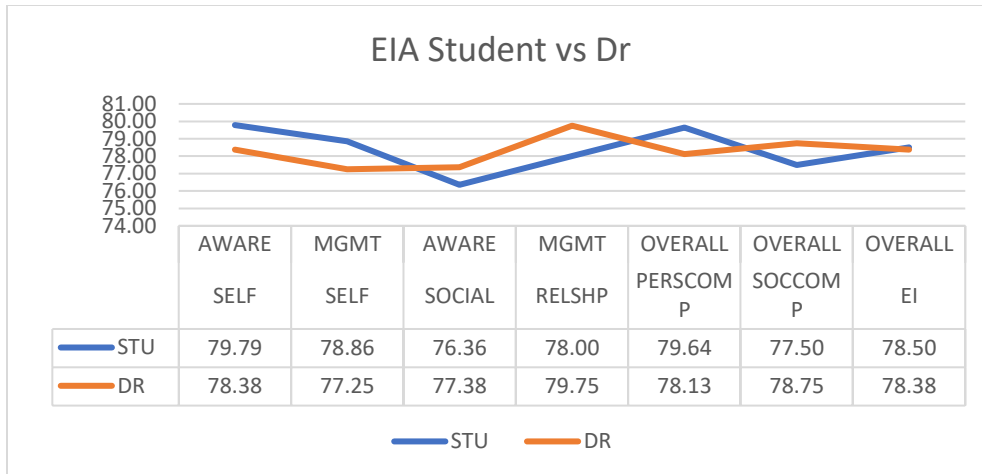


Figure 14. EIA score comparison student vs doctor.

EIA by Gender

A comparison of EIA scores by gender was done. The average EI scores were slightly higher in men than in women (men = 79.14, women = 78.29). Men scored higher on self-awareness (men = 80.86, women = 80.86) and on personal competency (men = 80.57, women = 78.79). See figure 15 for chart comparing these two groups.

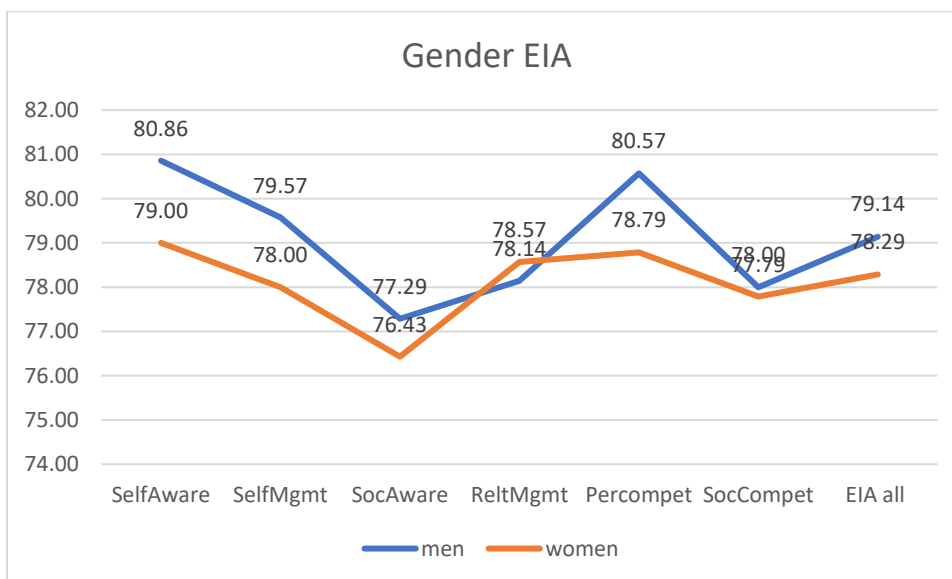


Figure 15. EIA score comparison by gender.

EIA by Age

The EIA overall scores for age ranges 60-69 ($\bar{x} = 75.75$), and 70-79 ($\bar{x} = 74$) are slightly lower than all other ranges. The highest scores are age groups 20-29 and 30-39 ranged from 80-80.5 respectively in all competency areas. In the self-awareness area, the 20-29 ages scored highest and the 40-49 age group scored the lowest. In the areas of “self-management, social awareness, relationship management and overall personal competence” (Goleman, 2002), the age range 40-49 scored lowest, and the 30-39 age group scored the highest. Please see figure 16 for details.

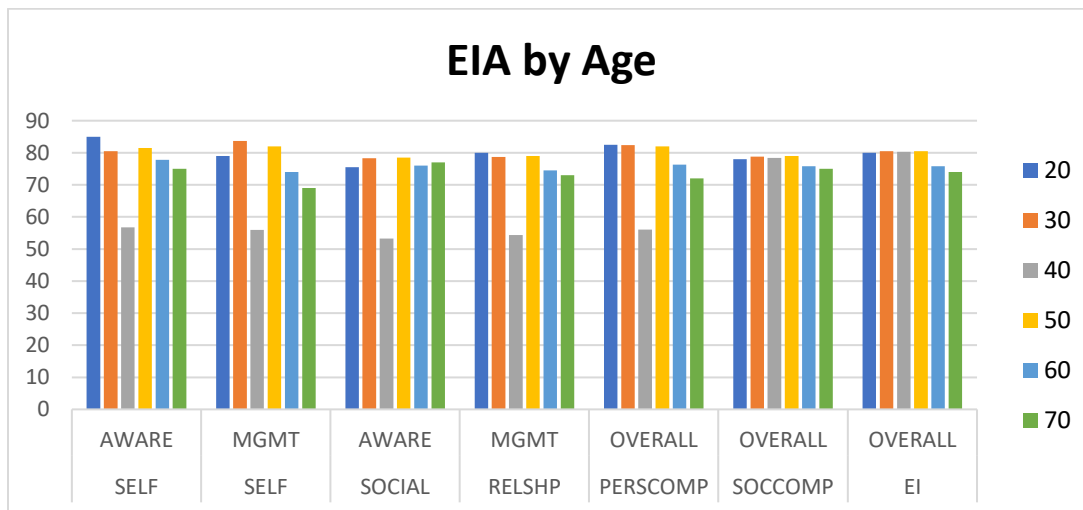


Figure 16. EIA score comparison by time in program.

EIA by Years in Program

A comparison between the number of years spent in the doctoral program and EIA scores was performed. The number of years in the program was divided into 6 or more years (group A) versus 5 or less (Group B). The overall EI scores show that generally, those who spent less time in the program have slightly higher EI (\bar{x} group B = 78.92, for group A = 77.92). On the EIA comparison, students in group B scored higher on the self-awareness area (group B \bar{x} = 82.42, group A = 75.5) and have slightly higher overall personal competency score than those

in for group A (group B \bar{x} = 80.92, group A \bar{x} = 76.9), while group A scored higher in relationship management (group B \bar{x} = 77.0, group A = 80.). Please see figure 16. Table 13 provides a summary of all EIA mean score analyses.

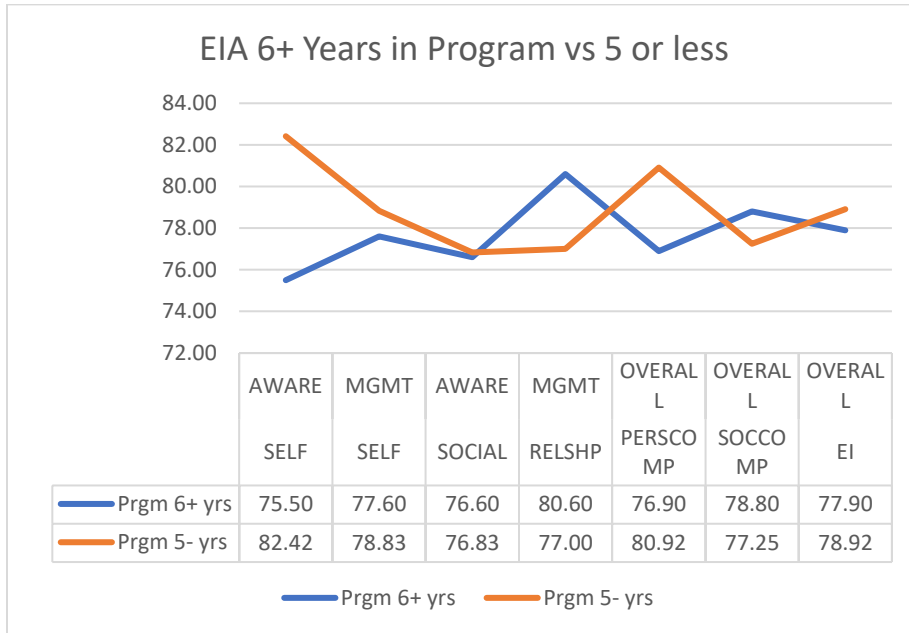


Figure 17. PCQ and EIA correlational analysis.

Table 13
EIA Mean Score Analysis Summary, All Areas

EIA	Whole Group	Drs. vs. STU	by gender	by age	all participants	Dr. by time
Possible scores	78.45	Dr.	78.4	M	79.1	70-80 74.0
90-100 strength		STU	78.5	F	78.3	60-69 75.6
80-89 build on						50-59 80.5
70-79 not						40-49 80.3
strength						30-39 80.5
60-69 work on						20-29 80.0
59 a concern						

*Group A = 6+ years in program, group B = 5 years or less.

Comparison of EIA and PCQ in Graduates, by Number of Years in Program

To determine whether time influences EIA and PCQ scores, I compared scores of doctoral graduates by the number of years in the doctoral program. I grouped those who took 5

or fewer years (Group B) to those who took 6 or more years (Group A) to complete their programs. Refer to figure 17, and 18. The mean EIA score for Group A was 74, while Group B was 79.8, and for PCQ Group A was 4.5 and Group B was 5.3.

Correlation PsyCap and EI

To evaluate the relationship between the Emotional Intelligence and Psychological Capital constructs, a correlational analysis was performed using the PCQ and the EIA scores. There was a moderately strong positive correlation ($r = 0.62, p < .05$). See figure 17.

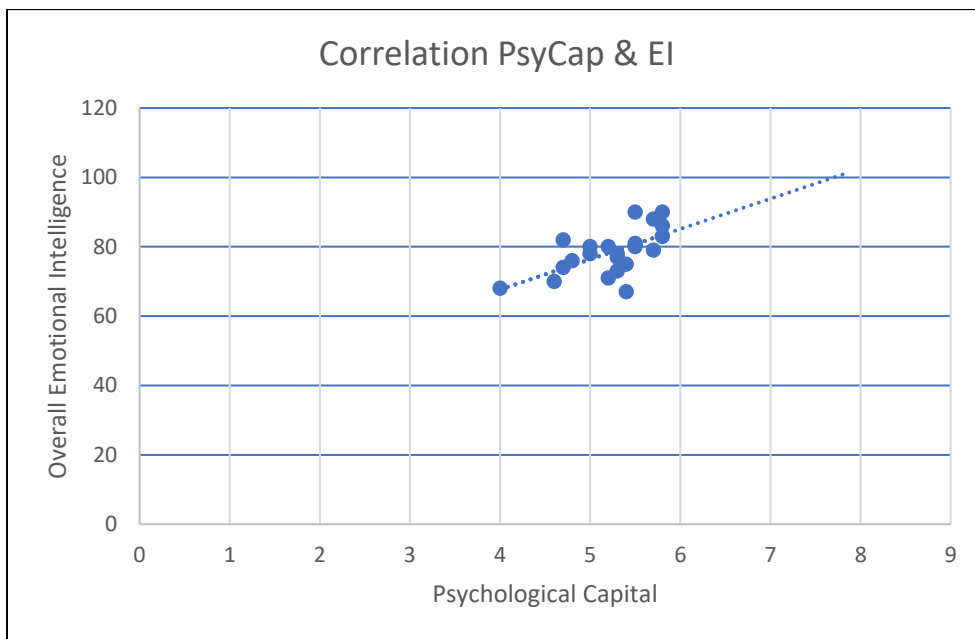


Figure 18. PCQ and EIA correlational analysis.

Missing Data

The instructions for the Doctoral Success Questionnaire included permission to leave items unanswered if they did not apply. The questions that were left blank were not included in calculations. Any unanswered questions in the demographic questionnaire were left out of tabulations. Interview questions that were not answered were left out of the tabulations for that question.

Chapter 4 Summary

This chapter discussed the results of the demographic and doctoral success questionnaires, the emergent themes from the qualitative interviews (balance, action, beliefs, and support) and the analyses performed between the EIA and PCQ groups. PCQ scores ($\bar{x} = 5.24$) were moderately high, while the EIA scores ($\bar{x} = 78.45$) were not strengths and could improve. There is no significant difference between EIQ and PCQ scores by gender, or by time in program. The younger age group, 30-39, scored highest in EIA ($\bar{x} = 80$) and in the PCQ scores ($\bar{x} = 5.4$). There is a moderately strong correlation between the EIA and PCQ constructs ($r = 0.62, p < .05$). Graduates disclosed that they believe they have relatively high resilience and self-efficacy skills, and present, but not high hope and optimism skills. Students also report moderate presence of Emotional Intelligence skills. These findings are consistent with the results of the PCQ which showed that participant scores in optimism were present, but low, with the EIA results that show that while EIA is present, it is not yet a strength and could be improved.

Chapter 5, Discussion, Implications, & Summary

Several methods were utilized to answer the research questions: demographic questionnaires, semi-structured interviews, doctoral success questionnaires, the Psychological Capital Questionnaire (PCQ), and the Emotional Intelligence Appraisal (EIA). Both current doctoral students and doctoral graduates were included in this study (n=23, 14 were current students, 9 doctoral graduates). Of the 14 students, 8 were women, and 6 men. Of the 9 doctoral graduates, 6 were women, and 3 men. In this section, I will discuss the findings associated with each of these tools, how these findings tie into current research, and the implications of these findings. I will also discuss the limitations of this study, some areas for future research, and I will make recommendations for how to incorporate these findings into graduate programs to help encourage success which will benefit both future students, and programs.

Answer to Research Question 1

The first research question investigates the strengths Ph.D. graduates believed they have utilized and are these skills consistent with the synergistic mixture of PsyCap as measured by their PCQ scores.

The hypotheses for this question were:

H1: Doctoral graduates utilize PsyCap and EI to successfully navigate through their doctoral journeys.

H1₀: Doctoral graduates do not utilize PsyCap and EI to successfully navigate through their doctoral journeys.

Discussion

Doctoral graduates believed they utilized attitudes such as hope, confidence, spiritual beliefs, optimism, self-efficacy, and Emotional Intelligence to be resilient, adapt, and to maintain

intrinsic motivation and persist to goal completion. One theme emerged from the responses to this question: the ability to find and to maintain balance between the demands of school, work, family, and self-care, by using what they believed (attitudes) to influence what they could do (actions). For example, one thing they could do to help maintain balance included drawing on their spiritual beliefs, optimism, and confidence so that they could get back up (resilience) after a difficult encounter and persevere on their course. They drew support from friends, mentors, family, and experience to help them maintain balance. These attitudes and actions incorporate the elements of PsyCap, including hope, self-efficacy, resilience, and optimism. Some of the experiences that doctoral students discussed changed them and are consistent with Mezirow & Associates's (1990) transformational theory. For instance, Dr. Eva said "I did not expect the dissertation to be this much of a challenge. I mean I did not anticipate that it was a psyche cleanser. Bumping into so many things I didn't even know were inside me at the weirdest moments have taught me that I have to be able to figure things out and cope."

Doctoral graduates scored moderately high on the overall PCQ ($\bar{x} = 5.3$, possible score 1-6), indicating they had a balanced amount of the synergistic PsyCap skills that are predictive of success in the workplace. The respondents' claims that they managed challenges with help from support they received from role models, personal experience, or from family, friends, and faculty, confirms the discoveries of Castro, Garcia, Cavazos, & Castro (2011) which revealed that the support of mentors and family was a big component of the student's ability to persevere. Furthermore, these findings could confirm Brailsford's (2010) conclusions that loneliness plays a part in attrition if the lack of support is synonymous with loneliness.

These findings are very interesting because they confirm the presence of the elements of Angela Duckworth's theory of Grit (Duckworth, 2016), which posits that successful people have

a combination of hope, passion, and perseverance which is moderated by the things they believe (attitudes) and the things they tell themselves (self-talk). I propose that the findings of these interview questions support the presence of Grit in doctoral success, but that there is more involved. There seems to be a need for balance before one can persevere because the absence of balance seems to create challenge and conflict. Perhaps doctoral success requires an ability to balance attitudes (beliefs) with actions (resilience) through the integration of support (from a variety of places).

The interviews revealed that the main areas of challenges for participants lie in the areas of problems with faculty or program, creating and maintaining balance, and emotional regulation. Faculty or program challenges involved inconsistent offerings of required courses, loss of faculty, or unclear program expectations. Problems creating or maintaining balance included problems scheduling time with family, school work, or leisure time. Problems with emotion regulation involved accepting the uncomfortable feelings that came up during their journeys, including financial challenges, or self-confidence. These challenges are consistent with the findings of Herzig (2002) and Brailsford (2010) who suggest that personal sacrifices in time, money, and relationships are required for success; implying that the absence of balance in these areas could potentially derail students from their goals. These challenging areas confirm Golde's (2000) findings that in addition to problems created by the students themselves, there are departmental/faculty actions or behaviors that may also influence student attrition.

The doctoral success questionnaire responses also confirmed the presence of the PsyCap and EI components. Six doctoral graduates (2 men, 4 women) completed this questionnaire and identified the use of resilience, self-efficacy, and Emotional Intelligence as the skills they used most frequently. They also identified hope and optimism, but with less frequency. Other

responses included support (from family, experience, accomplishments, and networks), as well as personal character (including patience and integrity), and other attitudes (including determination, and self-esteem).

The results of this questionnaire indicate that many participants believed that they utilized resilience to navigate through challenging parts of their doctoral journeys, that they had ongoing opportunities to learn to be resilient. These results support the findings of Castro, Garcia, Cavazos, & Castro (2011) suggesting that Emotional Intelligence and Resilience are factors involved in the pursuit of a doctoral degree.

I rejected the null hypothesis for research question 1.

Answer to Research Question 2

The second research question investigates if there a predictive relationship between Emotional Intelligence Quotients, PCQ scores and the number of years it took participants to graduate?

The hypotheses for this research question were:

H2: There is a predictive relationship between EI and PCQ scores and the number of years it takes students to graduate.

H2₀: There is not a predictive relationship between EI and PCQ scores and the number of years it takes students to graduate

Time in the program was broken down into two groups: Group A (those in the program 1-5 years), and Group B (those in for 6 or more years). Both the PCQ and EIA scores for group B were slightly higher than for group A, indicating that those who spent more time in the program had slightly higher PsyCap and EI scores, however, this difference was minimal

(difference between PCQ scores = .6, and between EIA scores = 1.02), and was insufficient to make any claims about predictability of scores based on time in the program.

I failed to reject the null hypothesis for question 2.

Answer to Research Question 3

This question investigated whether there is a correlation between E.I. and PsyCap?

The hypotheses for this question were:

H3: There is a correlational relationship between the EIA and PCQ scores.

H3₀: There is no correlation between the EIA and PCQ scores.

A correlational analysis indicates that there is a moderate positive relationship between EIA and PCQ scores ($r = 0.62$, $p < .05$) and thus I can reject the null hypothesis and conclude that as the EIA scores increase, the PCQ scores will also increase. The null hypothesis is rejected.

Answer to Research Question 4

The final question investigated whether doctoral graduates have higher Emotional Intelligence and Psychological Capital than those students just beginning their journeys.

The hypotheses for this question were:

H4: Doctoral graduates have higher EI and PCQ scores than students just beginning their journeys.

H4₀: There is no difference between the EI and PCQ scores of doctoral graduates and students just beginning their journeys.

There is no evidence that doctoral graduates have higher PCQ or EIA scores than students just beginning their journeys. While graduates claim that they have many situations in which to practice the psychological skills which are components of the PCQ and EIA

assessments, the calculations show that it is the first and second year students who have higher scores in both assessments.

To investigate the relationship of EIA and PCQ scores in doctoral students who are just beginning to those who graduates, I compared the PCQ and EIA scores of students in for 1-2 years (group C) to those who have already graduated (group D). The mean PCQ scores for both groups C and D were 5.3, while the mean EIA scores for group C was 82.13, and group D was 73.0. These scores indicate that there is no difference between the groups in PCQ, and the EIA scores show that the new students have higher EIA than the graduates. There is no evidence to determine that graduates have higher E.I. and PsyCap than those students just beginning their journeys, and so I failed to reject the null hypothesis.

Graduates disclosed that they believe they have relatively high resilience and self-efficacy skills, and present, but not high, hope and optimism skills. Students also report moderate presence of Emotional Intelligence skills. These findings are consistent with the results of the PCQ which showed that participant scores in optimism were present, but low. EIA results that show that while EIA is present, it is not yet a strength and could be improved.

Study Limitations

There are limitations to every study, and this is no exception. This study was meant to be a descriptive study of a group of doctoral graduates and current students in a small doctoral program and the sample size is small. However, I was unable to solicit as many participants as I had hoped, and I had more current doctoral students than doctoral graduate participants.

Additionally, the study was limited in its scope because it examined the experiences of doctoral graduates and students from retrospection, and time may influence memories and feelings. Some graduates who had been out of school for years may not recall their experiences or feelings as

accurately as recent graduates. Finally, due to the snowball approach to soliciting participants, there may have been some predisposition for those with higher EI and PCQ to volunteer because those with higher skills would be able to plan for managing the inconvenience of scheduling the requisite time for this study.

Statement of Researcher Positionality

As a current doctoral candidate and the researcher for this project, I held some researcher bias. I knew most of the participants and I was familiar with the program and faculty. While I attempted to remove my personal feelings, thoughts, and expectations associated with this study, it was impossible to do so completely. Another limitation associated with being involved in both the program and this research was that the respondents, being familiar with my position as a candidate and researcher, may have altered their responses based on our relationship.

Future Research

While this study examined the experiences of doctoral graduates and graduate students, it was limited in its scope because of the limited number of subjects and due to its retrospective nature. It may be beneficial to follow students through their doctoral journeys as part of a longitudinal study so that a more accurate assessment can be done. Performing the EIA and PCQ assessments, and asking a few questions about attitudes, support systems, and skill sets before they begin, and then assessing at midpoint, and again at graduation, would provide some rich data on the phenomenon of doctoral attrition and success. The presence of the Grit construct in doctoral success should be examined. Perhaps a future study could incorporate the Grit Assessment tool.

Recommendations

To increase both EIA and PCQ scores early in student doctoral programs graduate department faculty could focus on incorporating the PCQ and EIA activities for focusing on one area at a time. One activity to help improve the lowest scoring area of participants in this study, optimism, involves teaching students how to set goals and overcome perceived obstacles. Additionally, mentors could teach students to set short term goals, and to identify tasks they can perform to accomplish these goals. Students should learn to visualize success, and create mind maps of associated tasks. Faculty could facilitate the creation of supportive environments, such as cohorts and mentorships, early in student's doctoral programs so that they can help students balance the stressors of their programs before they are overwhelming. Departments might also consider performing exit interviews to ask the difficult questions about why students are leaving, or interview graduates as they leave to gather pertinent information about the strategies they utilized when stressors were high.

To help themselves, graduate students could form support groups of their own and hold each other accountable, find a faculty with whom they can develop a rapport and communicate concerns, and participate in community activities.

Study Summary

Phillips and Pugh (2010) believe that the doctoral process is transformational. Some studies identify support from family, friends, and peers as components of success (Byers, et al, 2014; Phillips and Pugh, 2010) and that resilience and persistence are involved (Spaulding & Rockinson-Szapkiw, 2012). Deci and Ryan's (2000) theory on self-directed motivation, and Duckworth's (2016) Grit theory provided some insight into the creation of goals which are truly intrinsic, and potentially sustainable. Finally, theories associated with workplace success, such

as Emotional Intelligence and Psychological Capital can explain behaviors which transfer into an educational setting, and facilitate requisite skills for doctoral success.

This study corroborated the findings of (Byers, et al, 2014; Phillips and Pugh, 2010), that support, resilience, and persistence, are integral parts of doctoral success. Graduates believe they utilized skills consistent with the synergistic mixture of PsyCap as measured by their PCQ, and this belief was corroborated by the presence of moderately high levels of PCQ scores. The analyses of doctoral success questionnaires, EIA and PCQ scores, and interviews, all suggest that students believe they utilize several strengths of both the EIA and PCQ constructs, including resilience, hope, self-efficacy, and emotional intelligence. These skills enabled the participants to set goals, to persist toward goal completion, and to modify and balance interfering behaviors. These findings support Deci and Ryan's, (2000) theory on self-directed motivation, as the participants were motivated by their internal desires to persist. This study also supports the potential presence of Grit (Duckworth, 2016). Grit theory explains perseverance and the ability to overcome obstacles and reach personal goals. According to this theory, Grit is more predictive of success than talent, IQ, or opportunity, and that successful people have a combination of hope, passion, and perseverance which is moderated by the things they believe (attitudes) and the things they tell themselves (Duckworth, 2016). The presence of Grit can explain doctoral success, but there may be more involved. The results of this study corroborate the theory of Grit but there also appears to be need for balance between attitudes and actions, because the absence of balance seems to create challenge and conflict.

The findings in this study suggest that doctoral success is related to the ability to balance attitudes (beliefs) with actions (resilience) through the integration of support. This study also confirmed that there is a moderately strong positive correlation between Emotional Intelligence

and Psychological Capital ($r(20) = 0.62, p < .05$), that there is very little difference between participants' EIA or PCQ scores based on how many years doctoral graduates took to graduate, and that based on this sample, there is no evidence that graduates have higher EI and PsyCap than students beginning their coursework, but that all participants did have a moderately high amount of PsyCap ($\bar{x} = 5.24$), and EI was not a strength ($\bar{x} = 78.45$), but it was not a weakness either.

Because this study revealed the presence of some skills associated with PsyCap (Resilience, Hope, Optimism, Self-Efficacy) and Emotional Intelligence (Self Awareness and Regulation, and Other Awareness and Regulation), and some of these same skills are preset in the Grit construct, graduate departments could consider trying to help students by providing instruction in increasing both EIA and PCQ scores early in doctoral programs. Some activities to help improve these skills, specifically skills in the lowest scoring area of participants in this study, (Optimism) include teaching students how to set goals, and overcome perceived obstacles. For instance, mentors could teach students to set short term goals, and identify tasks they can perform to accomplish these goals. They can visualize success, and create mind maps of these tasks. Activities like this may help increase these skills (Luthans, Avolio, & Avey, 2007). The PCQ is amenable to instruction so intervention should help increase these scores (Luthans, Avolio, & Avey, 2007). Administration of the PCQ at the onset of doctoral journeys will also help because the PCQ provides activities to help increase each component. The PCQ is available at Mindgarden.com. EI can be increased as well. Activities for increasing EI are provided by Talentsmart.com and there are numerous activity books on the market for assistance in this area.

Appendix A Email Recruitment

Subject Line: Opportunity to Participate in Research

Dear [department name] Doctoral Graduate, or Current [department name] Doctoral Student, I am conducting a research study about the psychological strengths doctoral students utilize to help them to persist through the doctoral journey.

You are receiving this email because you have either graduated from the [department name] doctoral program, or you are currently enrolled in the doctoral program.

The purpose of this research study is to gather information about what psychological skills you used (or use) to persist through the doctoral program, particularly those used when the journey is a long and challenging process.

If you agree to participate, this study will involve completion of a demographic questionnaire (5 minutes), taking the Psychological Capital Questionnaire (PCQ) (15 minutes) and the Emotional Intelligence Appraisal (EIA), (about 15 minutes) and if you have already graduated, it will include participating in an interview which will not last more than one hour, and completion of another questionnaire (15 minutes).

The risks of participating in this research project is that it will involve about 1 to 2 hours of your time, depending on your status as a student. There is always a risk of loss of confidentiality, but this risk is minimal as every effort to ensure the confidentiality of your identity will be taken. I will report the findings of this research using numeric codes and any link to personally identifiable data will be destroyed.

There is no compensation for your participation in this study, and costs of the PCQ and the EIA assessments are the responsibility of the researcher.

You do not have to be in this study, your decision to be in any study is totally voluntary. If you feel you understand the study and would like to participate, please email kathrynbose@gmail.com and insert research participant in the subject of the email. I will then contact you with details of the project.

If you have questions prior to participating, please contact:

- Kathryn Bode
- kathrynbose@gmail.com
- 505-480-3290

Thank you for your time,
Kathryn Bode
Doctoral Candidate

Principal Investigator: Patricia Boverie, PhD

Study Title: Discovering Psychological Components of a Ph.D., the Road to Success
IRB #: (1069017-1)

Appendix B Recruitment Verbal Script

WHEN REACHING AN ANSWERING MACHINE OR VOICE MAIL
DO NOT LEAVE TELEPHONE MESSAGES REGARDING RESEARCH RECRUITMENT
IF SOMEONE OTHER THAN PARTICIPANT ANSWERS THE PHONE

Hello,

Am I speaking to (potential participant)?

If NO, ask if the desired person is available. If not available, then indicate you will call back, say Thank You and hang up. Do not provide any information that might violate the potential subject's privacy.

ONCE THE POTENTIAL PARTICIPANT IS ON THE LINE

Hello,

Am I speaking to (potential participant)?

If YES, then continue:

Choose one of the below

My name is Kathryn Bode. I am a researcher at the University of New Mexico. I am doing a study about the psychological strengths doctoral students utilize to help them to persist through the doctoral journey.

I am contacting you because you have either graduated from the OI& LS doctoral graduate program, or you are enrolled in the [department name] doctoral program.

May I have your permission to talk to you about this new study?

If no, say Thank you for your time and end the call.

If yes, continue as below.

The purpose of this research study is to gather information about what psychological skills you use (or did use) to persist through the doctoral program, particularly those that you use when the journey is a long and challenging process.

If you agree to participate, this study will involve completing a demographic questionnaire (10 minutes), taking the Psychological Capital Questionnaire (PCQ) (10-15 minutes) and the Emotional Intelligence Appraisal (EIA), (which takes about 7-10 minutes) and if you have already graduated, an additional questionnaire on doctoral success (15 minutes) and an interview which will not last more than one hour.

The risks of participating in this research project is that it will involve about 1- 2.0 hours of your time, depending on your status as a student. There is also always a risk of loss of confidentiality, but this risk is minimal as every effort to ensure the confidentiality of your identity will be taken. I will report the findings of this research using pseudonyms and any link to personally identifiable data will be destroyed.

There is no compensation for your participation in this study, and costs of the PCQ and the EI assessments are the responsibly of the researcher.

You do not have to be in this study, your decision to be in any study is totally voluntary.

Do you have any questions? (Answer any questions)

“OK very good. Are you interested in being part of this study?

If no, say Thank you for your time and end the call.

If yes then set up appointment for meeting with participant, or if they are unable to meet in person, continue to next step which is an email with consent form

Appendix C IRB Approved Consent to Participate

Discovering Psychological Components of a Ph.D. the Road to Success
Consent to Participate in Research 4/12/2017

Purpose of the study: You are being asked to participate in a research study that is being done by Patricia Boverie, Ph.D., the Principal Investigator, and Kathryn Bode, from the Organization, Information, and Learning Science [department name] department. The purpose of this study is to gather information about what psychological skills you use (or did use) to persist through the doctoral program.

You are being asked to take part in this study because you have either graduated from the [department name] Doctoral program, or are a current [department name] doctoral student.

This form will explain what to expect when joining the research, as well as the possible risks and benefits of participation. If you have any questions, please ask one of the study researchers.

What you will do in the study:

This study involves two separate groups of participants.

If you are a doctoral graduate:

You will participate in activities that could take up to 2 hours and include:

- a demographic questionnaire (10 minutes)
- a doctoral success questionnaire (10 minutes)
- a Psychological Capital Questionnaire (PCQ) (10-15 minutes)
- an Emotional Intelligence Appraisal (EIA) (7 minutes)
- a short, 4 question semi-structured interview (not to exceed one hour)

Ideally, you will complete both questionnaires and your interview in person in one visit when you complete your consent form. If you are unable to meet with me in person, I will email you the demographic and the Perceived Psychological Strength questionnaires, which you will complete and return to me. I will then schedule a phone interview with you and perform a phone interview that will be recorded. Once the forms and interview have been completed, you will receive a link to the PCQ and the EIA assessments from the test administration sites. To protect your privacy, you should take these tests in the privacy of your own home, or on a personal computer. The PCQ and EIA results will be sent to me by the test administration sites. I will review the assessment results, send you a copy of your results, and then replace your name with numeric codes to protect your identity and transfer the de-identified data to an excel spreadsheet for analysis. I will then destroy all links to your data.

Email links to your returned questionnaires will be destroyed once data is received and numeric codes are assigned.

All interviews (either in person or by phone) will be audio recorded so that I can transcribe your answers.

I will protect all your personally identifiable information by assigning a numeric code to your interview transcript, and to all assessment results.

You can skip any questions on the interview that make you uncomfortable, and you can remove yourself from the research project at any time by letting me know you no longer wish to participate. If you choose to remove yourself from the project, I will destroy any data linked to you.

Participation in this study will take a total of 2 hours over a period 2 days; the questionnaire and assessments taking about an hour, and the interview for graduate participants taking another hour.

For current doctoral students:

You will participate in activities that could take up to 1 hour and include:

- a demographic questionnaire (10 minutes)
- a Psychological Capital Questionnaire (PCQ) (10-15 minutes)
- an Emotional Intelligence Appraisal (EIA) (7-10 minutes)

Ideally, you will complete the questionnaire in person when you complete your consent form, and your online assessments in the privacy of your own home, or from your own computer with access from a link I email to you. If you are unable to meet with me in person, I will email you the demographic questionnaire which you will return to me. Once the demographic questionnaire is complete, you will receive a link to the PCQ and the EIA assessments from the test administration sites. To protect your privacy, you should take these tests in the privacy of your own home, or on a personal computer. The PCQ and EIA results will be sent to me by the test administration sites. I will review the assessment results, send you a copy of your results, and then replace your name with numeric codes to protect your identity and transfer the de-identified data to an excel spreadsheet for analysis. I will then destroy all links to your data.

Email links to your returned questionnaires will be destroyed once data is received and numeric codes are assigned.

All Participants:

Risks: The risks associated with this study are minimal. However, there are risks of stress, emotional distress associated with contemplating your progress in the doctoral program, inconvenience and possible loss of privacy and confidentiality associated with participating in a research study.

Participation in this study is entirely voluntary. It is not associated with a specific course, or grade. It is intended to collect descriptive information about the [department name] doctoral students and doctoral graduates and what skills they utilized to preserve through their program. I will not probe, but ask open ended questions. There is also a potential risk of loss of confidentiality; I do not intend to reveal identity of the participants, and so the risks are not high, and the likelihood of a breach of privacy is low.

Benefits: You will receive the assessment of your Psychological Capital (strengths associated with success in the workplace, including hope, resilience, self-esteem and optimism) as well as the results of your Emotional Intelligence Test (including self-regulation, self-awareness, awareness of others, and your ability to react appropriately to other's emotions). These results can provide some insight into where you are strong and where you could use some improvement. There will be no other benefit to you from

participating in this study. However, it is hoped that information gained from this study will provide the [department name] department with insight into how to improve its doctoral program and provide additional support for students. Ultimately, it may impact doctoral completion rates by helping both the graduate department and graduate students ensure that they are prepared for the psychological challenges inherent in the pursuit of a Ph.D.

Confidentiality of your information: I will ensure your confidentiality by storing any recordings on a personal, password protected phone, and will delete recordings when transcriptions are complete. I will use numeric codes when storing transcribed interviews and assessment results, and will store the master linking name and numeric code list in an encrypted excel file on my password protected computer until the dissertation has been published in Lobo Vault. Once published, the master linking list to the data will be destroyed. All reports will be made using numeric codes only. This consent to participate will be stored in the [department name] Department office in a locked file cabinet.

I will take measures to protect the security of all your personal information, but I cannot guarantee confidentiality of all study data. The University of New Mexico Institutional Review Board (IRB) that oversees human subject research and/or other entities may be permitted to access your records. Your name will not be used in any published reports about this study.

You should understand that the researcher is not prevented from taking steps, including reporting to authorities, to prevent serious harm of yourself or others.

Payment: You will not be paid for participating in this study. You will not be required to pay for the assessments you take, this is the responsibility of the researcher.

Right to withdraw from the study: Your participation in this study is completely voluntary. You have the right to choose not to participate or to withdraw your participation at any point in this study without penalty. You may simply tell me you no longer wish to participate and ask me to destroy any data associated with you, including questionnaires, assessment results, or interview audiotapes or transcriptions. Once notified that you no longer wish to participate, I will destroy appropriate documents. If I suspect that there is any harm to you associated with participation in this project I will advise you that I am removing you from the project, and I will destroy any associated data.

If you have any questions, concerns, or complaints about the research study, please contact:

Kathryn Bode, [department name] Doctoral Candidate, (505) 480-3290, kathrynbode@gmail.com

Or

Patricia Boverie, Ph.D., [department name] Department, 1 University of New Mexico, Albuquerque, NM 87131, 505-277-2408, pboverie@----.edu

If you would like to speak with someone other than the research team to obtain information or offer input or if you have questions regarding your rights as a research participant, please contact the IRB. The IRB is a group of people from [University name] and the community who provide independent oversight of safety and ethical issues related to research involving people:

[University name] Office of the IRB, (505) 277-2644, irbmaincampus@---.edu. Website: http://irb.---.edu/

CONSENT

You are making a decision whether to participate in this study. Your signature below indicates that you have read this form (or the form was read to you) and that all questions have been answered to your satisfaction. By signing this consent form, you are not waiving any of your legal rights as a research participant. A copy of this consent form will be provided to you.

I agree to participate in this study.

Name of Adult Participant

Signature of Adult Participant

Date

I have explained the research to the participant and answered all of his/her questions. I believe that he/she understands the information described in this consent form and freely consents to participate.

Name of Research Team Member

Signature of Research Team Member

Date

Appendix D Demographic Questionnaire

Please provide some information about yourself:

1. Your name: _____ 2. E-mail: _____

3. Phone: _____

(The section above will be shredded once returned, code assigned to bottom section, and contact made with participant with instructions for completing assessments.)

4. Program Status:

_____ Graduated from [department name] with a PHD

_____ Current Student in [department name] Doctoral program

5. Your gender (select one): male female

6. Your age range during the PhD process.:

- When started (select one): 20-29 30-39 40-49 50-59 60-70 70+
- Now: 20-29 30-39 40-49 50-59 60-70 70+
- If you have graduated with doctorate, age at graduation: 20-29 30-39 40-49 50-59 60-70 70+

7. Your ethnicity (select one): Hispanic Native American White Black Other

8a. Do you live in the Albuquerque area? Yes No

8b. If no, where do you live (city/state or country)? _____

Please provide some information about your doctorate program

<p>If you <u>have graduated</u> with your PhD please answer these questions:</p> <p>9. What year were you officially accepted into the doctoral program? _____</p> <p>10. Did you work during your program (circle one) yes/no?</p> <p>11. Did you take classes (circle most applicable) part time/fulltime?</p> <p>12. What year did you have a midpoint review? _____</p> <p>13. What year did you become ABD? _____</p> <p>14. What year did you graduate? _____</p> <p>15. Did you have access to a mentor during your program? (circle one) yes/no</p>	<p>If you have <u>not yet graduated</u>, please answer these questions:</p> <p>16. What year were you officially accepted into the doctoral program? _____</p> <p>17. Did you work during your program (circle one) yes/no?</p> <p>18. Did you take classes (circle most applicable) part time/fulltime?</p> <p>19. What year did you have a midpoint review? _____</p> <p>20. What year did you become ABD _____?</p> <p>21. What year do you expect to graduate? _____</p> <p>22. Did you have access to a mentor during your program? (circle one) yes/no</p>
--	---

23. May I contact you to discuss your Ph.D. experience? ___ Yes ___ No

24. Are you willing to participate in some short assessments and a short interview for research purposes? _____yes _____no

25. Please provide the best times for contact with you: _____

Thank you!

Appendix E Doctoral Success Questionnaire

Please refer to the following definitions when answering the questions below:

Resiliency- ability to recover from adversity, conflict, failure, or even positive events.

Optimism –the ability to think positively and to believe that good (rather than bad) things will happen.

Hope –the willpower and determination to achieve goals.

Self-Efficacy – relying on oneself to begin and continue to persevere with personal goals, even when faced with obstacles or challenges.

Emotional Intelligence- the ability to combine intelligence with emotions (being aware of and managing personal emotions, recognizing emotions in others, and managing relationships)

1. Think of a challenging time during your Ph.D. coursework. What strengths did you use to navigate your way through? (Choose all that apply, leave blank if none used)

- Resiliency
- Optimism
- Hope
- Self-Efficacy
- Emotional Intelligence
- Other [Click or tap here to enter text.](#)

2. If you ever questioned yourself about continuing your journey, please identify what strengths you used to persevere?

- Resiliency
- Optimism
- Hope
- Self-Efficacy
- Emotional Intelligence
- Other [Click or tap here to enter text.](#)

3. If you had trouble deciding on a topic for your dissertation, or were ever overwhelmed by the edits or feedback you received at from your committee, please identify what strengths you used to overcome these issues?

- a. Resiliency
- b. Optimism
- c. Hope
- d. Self-Efficacy

- e. Emotional Intelligence
- f. Other [Click or tap here to enter text.](#)

4. After you were ABD, if you experienced any difficulties creating structure so that you could write, please identify what strengths you used to create structure and complete your journey?

- Resiliency
- Optimism
- Hope
- Self-Efficacy
- Emotional Intelligence
- Other [Click or tap here to enter text.](#)

5. If you experienced any personal, health, deaths, divorce, or family problems during you journey, please identify what strengths you used to balance these issues with your need to continue working toward your Ph.D. goals?

- Resiliency
- Optimism
- Hope
- Self-Efficacy
- Emotional Intelligence
- Other [Click or tap here to enter text.](#)

6. If you experienced any difficulties selecting, managing, or interacting with your committee members, please identify what strengths you used to persevere?

- Resiliency
- Optimism
- Hope
- Self-Efficacy
- Emotional Intelligence
- Other [Click or tap here to enter text.](#)

7. If you encountered positive consequences, or unexpected positive results from something you had not expected, and it caused you any difficulty with adjustment during your Ph.D. journey, please identify what strengths you used to stay, or get back on track?

- Resiliency
- Optimism
- Hope
- Self-Efficacy
- Emotional Intelligence

Other Click or tap here to enter text.

8. If you experienced the loss of peers or program staff during your Ph.D. journey and it caused any slight to extreme discomfort, please identify what strengths you used to stay, or get back on track?

Resiliency

Optimism

Hope

Self-Efficacy

Emotional Intelligence

Other Click or tap here to enter text.

9. If there was anything during your Ph.D. journey that caused you to question the field you chose to study please identify the strengths you used to evaluate this concern and stay on track?

Resiliency

Optimism

Hope

Self-Efficacy

Emotional Intelligence

Other Click or tap here to enter text.

10. Looking back over your entire Ph.D. journey, which one, or combination of, strengths did you utilize most?

Resiliency

Optimism

Hope

Self-Efficacy

Emotional Intelligence

Other Click or tap here to enter text.

11. Are there other strengths or skills you utilized that were not mentioned? If so, please describe them here:

Click or tap here to enter text.

Appendix F Doctoral Success Interview Questions

1. Please describe your doctoral journey, providing some information about challenges you encountered and what you did to overcome the challenges so that you could be successful?
2. Looking back on your success, please describe the psychological strengths or skills you used that you believe were influential in reaching your goals.
3. Looking back throughout your time as a doctoral student, please name 1 or 2 things the department or faculty did which helped you be successful.
4. Looking back throughout your time as a doctoral student, please name 1 or 2 things the department or faculty could have done differently to help you be successful.

Appendix G Permission to Use the PCQ for Research

For use by kathryn bode only. Received from Mind Garden, Inc. on July 21, 2017

**Permission for kathryn bode to reproduce 1 copy
within one year of July 21, 2017**



www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her thesis or dissertation research:

Instrument: Psychological Capital (PsyCap) Questionnaire (PCQ)

Authors: Fred Luthans, Bruce J. Avolio & James B. Avey.

Copyright: 2007 Psychological Capital (PsyCap) Questionnaire (PCQ) Fred L. Luthans, Bruce J. Avolio & James B. Avey. All right reserved in all media.

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Most", with a long horizontal line extending to the right.

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix H IRB Approval Letter



Office of the
Institutional Review Board

DATE: June 6, 2017

REFERENCE #: 10617

PROJECT ID & TITLE: [1069017-1] Discovering Psychological Components of a Ph.D., the Road to Success

PI OF RECORD: Patricia Boverie, Ph.D.

SUBMISSION TYPE: New Project

BOARD DECISION: APPROVED

EFFECTIVE DATE: June 5, 2017

EXPIRATION DATE: June 4, 2018

RISK LEVEL: Minimal Risk

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category 6 & 7

SUBPART DECISION: Not Applicable

PROJECT STATUS: Active - Open to Enrollment

DOCUMENTS:

- Advertisement - Email to Participants Online Assessments (UPDATED: 05/30/2017)
- Advertisement - Email Doctoral Success Questionnaire (UPDATED: 05/30/2017)
- Advertisement - Email Demographic Questionnaire (UPDATED: 05/30/2017)
- Advertisement - Verbal Recruitment Script (UPDATED: 05/30/2017)
- Advertisement - Recruitment Email (UPDATED: 05/30/2017)
- Advertisement - Email to Doctoral Student Questionnaire (UPDATED: 05/30/2017)
- Advertisement - Email Doctor Participant Interview (UPDATED: 05/30/2017)
- Advertisement - Email to Doctor Participant (UPDATED: 05/30/2017)
- Advertisement - Email Appt Reminder Doctor Participant (UPDATED: 05/30/2017)
- Advertisement - EIA generated sample invitation email (UPDATED: 05/3/2017)
- Application Form - Project Info (UPDATED: 05/3/2017)
- Consent Form - Consent Form (UPDATED: 05/31/2017)
- Data Collection - Demographic Questionnaire (UPDATED: 05/30/2017)
- Data Collection - PCQ manual test 4 review (UPDATED: 05/3/2017)
- Data Collection - EIA Consultant Administration Guide (UPDATED: 05/3/2017)

- Data Collection - Appraisal-Me Fact Sheet (UPDATED: 05/3/2017)
- Data Collection - EIA Permission (UPDATED: 05/3/2017)
- Data Collection - EIA -Technical Manual (UPDATED: 05/3/2017)
- Data Collection - EIA Example Questions (UPDATED: 05/3/2017)
- Data Collection - PCQ Permission (UPDATED: 05/3/2017)
- Data Collection - Doctoral Success Interview Questions (UPDATED: 05/3/2017)
- Other - Project Team (UPDATED: 05/3/2017)
- Other - Dept Review (UPDATED: 05/3/2017)
- Protocol - Protocol (UPDATED: 05/31/2017)
- Questionnaire/Survey - Doctoral Success Questionnaire (UPDATED: 05/3/2017)
- Training/Certification - Bode Securing Private Data Certificate (UPDATED: 05/3/2017)
- Training/Certification - CITI Bode (UPDATED: 05/3/2017)

Thank you for your New Project submission. The UNM IRB has APPROVED your submission. This approval is based on an acceptable risk/benefit ratio and a project design wherein the risks to human participants have been minimized.

The IRB has determined the following:

- Informed consent must be obtained and documentation of informed consent is required for this project. To obtain and document consent, use only approved and stamped consent document(s).

This determination applies only to the activities described in the submission and does not apply should any changes be made to this research. If changes are being considered, it is the responsibility of the Principal Investigator submit an amendment to this project for IRB review and receive IRB approval prior to implementing the changes. A change in the research may disqualify this research from the current review category.

All reportable events must be promptly reported to the UNM IRB, including: UNANTICIPATED PROBLEMS involving risks to participants or others, SERIOUS or UNEXPECTED adverse events, NONCOMPLIANCE issues, and participant COMPLAINTS. All sponsor reporting requirements should also be followed.

The UNM IRB approved the project until June 4, 2018. A continuing review or closure submission is due no later than May 5, 2018. **It is the responsibility of the Principal Investigator to apply for continuing review and receive continuing approval for the duration of this project. If the IRB approval for this project expires, all research related activities must stop and further action will be required by the IRB.**

Please use the appropriate reporting forms and procedures to request amendments, continuing review, closure, and reporting of events for this project. Refer to the OIRB website for forms and guidance on submissions.

Please note that all IRB records must be retained for a minimum of five years after the closure of this project.

The Office of the IRB can be contacted through: mail at MSC02 1665, 1 University of New Mexico, Albuquerque, NM 87131-0001; phone at 505.277.2644; email at irbmaincampus@unm.edu; or in-person at 1805 Sigma Chi Rd. NE, Albuquerque, NM 87106. You can also visit the OIRB website at irb.unm.edu.

Appendix I Permission to Use the EIA for Research

Date: 6/26/2017

Name: Kathryn Bode

Address: 8501 Rancho del Cerro NE ABQ NM 84113

Abstract: Project title: Discovering Psychological Components of a Ph.D., the Road to Success

Research focus: The focus of my dissertation is a descriptive study to examine the positive psychological traits or skills used by Ph.D. students to successfully complete their programs and graduate with a Ph.D.

Key hypotheses: Ph.D. graduates have higher PsyCap and EI than those who do not.

Sample characteristics: This sample consists of 15-30 Ph.D. students and graduates selected from a small department within a large research university in the southwestern United States.

Research method: This is a descriptive study consisting of semi-structured interviews, a demographic questionnaire, a reflective questionnaire, and the administration of the Psychological Capital Questionnaire and the Emotional Intelligence Appraisal tools, all used to provide rich details about the skills the successful Ph.D. graduate employs to navigate a long and challenging journey.

Organizational characteristics: The university is a large research university in the southwest United States. The department is a very small one with undergraduate, masters and doctoral programs in organizational, information, and learning sciences.

I will be conducting this study in English.

Thank you for your request for permission to use Emotional Intelligence Appraisal – Me Edition in your research study. We are willing to allow you to use the instrument with the following understanding:

- You will use this survey only for your research study and will not sell or use it with any compensated management/curriculum development activities.
- You will include the copyright statement on all copies of the instrument.
- You will send your research study and one copy of reports, articles, and the like that make use of this study data promptly to our attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to us.

Best wishes with your study.

Sincerely,

Matt Alegria
TalentSmart
Research Committee

858-509-0582

I understand these conditions and agree to abide by these terms and conditions.

Signed *Kathryn Bode*

Date: 6/26/2017

Expected date of completion: 12/31/2017

References

- Adams, J. & Freedman, S., (1976). Equity theory revisited: Comments and annotated bibliography. *Experimental Social Psychology*, 9, 43-90, [https://doi.org/10.1016/S0065-2601\(08\)60058-1](https://doi.org/10.1016/S0065-2601(08)60058-1).
- Alderfer, C. (1969). An empirical test of a new theory of human needs. *Organizational Behavior and Human Performance*, 4(2), 142-175. [https://doi.org/10.1016/0030-5073\(69\)90004-X](https://doi.org/10.1016/0030-5073(69)90004-X)
- Bar-On, R. (2010). Emotional Intelligence: An integral part of positive psychology. *South African Journal of Psychology*, 40 (1), 54-62.
- Baro, R., Franklin, R., Hmieleski, K., (2016). Why entrepreneurs often experience low, not high, levels of stress: The joint effects of selection and psychological capital. *Journal of Management*; 42: 742-768. doi: 10.1177/0149206313495411
- Bieg, S., Reindl, M., & Dresel, M. (2015). The relation between mastery goals and intrinsic motivation among university students: A longitudinal study. *Journal of Educational Psychology*, 37(6), 666-679.
- Bourdieu, P. The forms of capital (1986) In Szeman I, Kaposy T. editors. *Cultural theory: An anthology*. Oxford: John Wiley & sons; 2011. P. 81-93.
- Boyatzis, R.E., Goleman, D., & Rhee, K. (1999). Clustering competence in emotional intelligence” insights from the Emotional Intelligence Competence Inventory (ECI).
- Boyatzis R, Rochford K, and Cavanagh K.V. (2017). Emotional intelligence competencies in engineer’s effectiveness and engagement. *Career Development International*, 22(1), 70-86. doi:10.1108/CDI-08-2016-0136

- Boyatzis R.E, and Saatchioglou A. (2008). A 20-year view of trying to develop emotional, social and cognitive intelligence competencies in graduate management education. *Journal of Management Development*, 27(1), 92-108. doi:10.1108/02621710810840785
- Bradbury. T, and Greaves, J. (2013). Emotional Intelligence Appraisal. Retrieved from <http://www.talentsmart.com/about/emotional-intelligence.php>
- Brailsford, I. (2010). Motives and aspirations for doctoral study: Career, personal, and interpersonal factors in the decision to embark on a history Ph.D. *International Journal of Doctoral Studies*, 5, 15-27. Retrieved from <http://ijds.org/Volume5/IJDSv5p015-027Brailsford283.pdf>
- Byers, V. Smith, R., Hwang, E., Angrove, K., Chandler, J., & Christian, K. (2014) Survival strategies: doctoral students' perceptions of challenges and coping methods. *International Journal of Doctoral Studies*, 9, 109.
- Cassusto, L. (2013). Ph.D. attrition: How much is too much? *The Chronicle of Higher Education*. Retrieved form <http://chronicle.com/article/Ph.D.-attrition-Hoe-much-is/140045/>
- Castro, V., Garcia, E. E., Cavazos, J., & Castro, A. Y. (2011). The road to doctoral success and beyond. *The International Journal of Doctoral Studies*, 6, 51-77. Retrieved from <http://ijds.org/Volume6/IJDSv6p051-077Castro310.pdf>
- Council of Graduate Schools (2008). Ph.D. completion and attrition: Analysis of baseline program data from the Ph.D. Completion project, Washington, DC.
- Creswell, J. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Dess, G, & Picken, J. (1999). *Beyond Productivity. How Leading Companies Achieve Superior Performance by Leveraging Their Human Capital*. New York: AMACOM.

Daspit, J., Mims, T. Zavattaro, S. The role of positive psychological states in online learning. Integrating Psychological capital in to the community of inquiry. *Framework Journal of Management Education*, Oct 2015 (39), 626-64. Doi 10.10.1177/10525629145654980

Dawkins, S., Martin, A., Schott, J., Sanderson, K. Building on the positives: A psychometric review and critical analysis of the construct of psychological capital. *Journal Occupational Psychology*, 2013, 86: 348-370.

Deci, E, & Ryan, R. (2000). The ‘what’ and ‘why’ of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.

http://dx.doi.org.libproxy.unm.edu/10.1207/S15327965PLI1104_01

Duckworth, A. (2016). *Grit: the power of passion and perseverance*, New York: Scribner Books.

Dupont, J., Carlier, G., Gerard, P., & Delens, C. (2009). Teacher-student negotiations and its relation to physical education student’s motivational processes. An approach based on self-determination theory. *European Physical Education Review*, 15(1), 21, doi: 10.1177/1356336X09105210.

Films for the Humanities & Sciences (Firm), Films Media Group, & TED Conferences LLC.

(2008). *TED Talks: Martin Seligman, What Positive Psychology Can Help you Become*.

New York, N.Y.: Films Media Group. Retrieved from

<Http://proxy.library.carleton.ca/ogin?url=http://digital.films.com/Portal/Playlists.aspx?aid=&xtid=48120>

- Golde, C. M. (2000). Should I Stay, or Should I Go? Student Descriptions of the Doctoral Attrition Process. *Review of Higher Education*, 23 (2), 199-227.
- Goleman, D (1995). *Emotional Intelligence*, New York: Bantam Books.
- Goleman, D., Boyatzis, R., & McKee, A. (2002). *Primal leadership: Realizing the power of emotional intelligence*. Boston, Mass.: Harvard Business School Press.
- Gonzalez-Moreno, P.A., (2012). Student motivation in graduate music programmes: An examination of personal and environmental factors. *Music Education Research*, 14(1), 79, doi: 10.1080/14613808.2012.657168
- Grover, V. (2007). Successfully navigating the stages of doctoral study. *International Journal of Doctoral Studies*, 2, 9-21. Retrieved from <http://www.ijds.org/Volume2/IJDSv2p009-021Grover21.pdf>
- Halpern, D. (2005). *Social capital* (11st edition). Cambridge, UK: Polity.
- Handbook of Positive Psychology (2005). Cary, US: Oxford University Press. Retrieved from <http://www.ebrary.com>
- Hattangadi, V. (2015). Theory x & theory y. *International Journal of Recent Research Aspects*, 2(4), 20.
- Herzberg, F. (1968). One more time: How do you motivate employees?" *Harvard Business Review*, January-February 1968, 56-62. Retrieved from academia.edu
- Herzig, A. H. (2002). Where have all the doctoral students gone? Participation of doctoral students in authentic mathematical activity as a necessary condition for persistence toward the Ph.D. *Educational Studies in Mathematics*, 50, 177-212.
- Hobfoll, S. (2002). Social and psychological resources and adaptation. *Review of General Psychology: Journal of Division 1, American Psychological Association*, 6, 307-324.

- Howard, K. (1989). A comprehensive expectancy motivation model: Implications for adult education and training. *Adult Education Quarterly*, 36(4), 189-210, doi:10.1177/0001848189039004002.
- Isaac, R.G., Zerbe, W., & Pitt, D. (2001). Leadership and motivation: The effective application of expectancy theory. *Journal of Managerial Issues*, 13(2), 212-226.
- Jones, B. (2014). Self-determination theory, v1. Retrieved from <https://www.youtube.com/watch?v=v84XxJkqvbU> on September 27, 2017.
- Jordan, P. J., Ashkanasy, N. M., & Hartel, C. E. J. (2002). Emotional Intelligence as a Moderator of Emotional and Behavioral Reactions to Job Insecurity. *Academy of Management Review*, 27, 1-12.
- Locke, E., Latham, G., & Erez, M. (1988) The determinants of goal commitment. *The Academy of Management Review*, 13(1), 23-39.
- Lawter, L. (2015). McGregor's theory x/y and job performance: A multilevel, multisource analysis. *Journal of Managerial Issues*, 27(1-4), 84.
- Litalien, D. & Guay, F. (2015). Dropout intentions in Ph.D. students. A comprehensive model based on interpersonal relationships and motivational resources. *Cotemporary Educational Psychology*, 41, 218-231, <http://doi.org/10.1016/j.cedpsych.2015.03.004>
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705-717. <http://dx.doi.org/10.1037/0003-066X.57.9.705>
- Lorenz, T., Beer, C., Putz, Heinitz (2016). Measuring Psychological capital: Construction and validation of the compound PsyCap Scale (CPC-12). *PLOS One*, 11 (4), e0152892. Retrieved from <http://doi.org/10.1371/journal.pone.0152892>

- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, 23 (6), 695-706. Doi:10.1002/job.165\
- Luthans, F., Avey, J., Clapp-Smith, Li, W (2008). More evidence on the value of Chinese workers psychological capital: A potentially unlimited competitive resource? *The International Journal of Human Resource Management*, 19, 818-827. Retrieved from <http://dx.doi.org/10.1080/095851907801991194>
- Luthans, F., Avolio, B., Avey, J., Norman, S, (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personality Psychology*. 2007; 60: 541-572
- Luthans, F., Avey, J., Norman, S., Combs, G., & Avolio, B. (2006) Psychological capital development; Toward a micro-intervention. *Journal of Organizational Behavior*, 27 (3), 387-393
- Luthans, F., Avey, B., Patera, J. (2008). Experimental analysis of a web-based training intervention to develop positive psychological capital. *Academic Management Learning & Education*; 7: 209-221.
- Luthans, F., Avolio, B., & Avey, J. 2007, "Psychological Capital Questionnaire"
<http://midgarden.com/136/-psychological-capital-questionnaire>
- Luthans, F., Avolio, B., Avey, J., & Norman, S. Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personal Psychology*, 2007; 60: 541-572.
- Luthans, F., Youseff, C. & Avolio, B. (2007) Psychological capital (electronic resource); *Developing the human competitive edge*. Oxford; New York; Oxford University Press. Retrieved from

[http://libproxu.unm.edu/login?url=http://search.epcohost.com/login.asp?direct=true&db=c
at00503a&AN=unm.b7882559&site=eds-live&scope=site](http://libproxu.unm.edu/login?url=http://search.epcohost.com/login.asp?direct=true&db=c
at00503a&AN=unm.b7882559&site=eds-live&scope=site)

Luthans, F., Youseff, C. Human, Social and now positive Psychological capital management: Investing in people for competitive advantage. *Organizational Development*. 2004; 33: 143-+160

Maehr M. L. (2008). Culture and achievement motivation. *International Journal of Psychology*, 43(5), 917-918. doi:10.1080/00207590701838162

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370-396.
<http://dx.doi.org/10.1037/h0054346>

Mayer, J., Salovey, P., & Carruso, D. (2012). The validity of the MSCEIT. Additional analysis and evidence. *Emotion Review*, 4 (4), 403-408: doi: 10.1177/175407391244581

McClelland, D. C. (1965). Toward a theory of motive acquisition. *American Psychologist*, 20(5), 321-333, <http://dx.doi.org/10.1037/h0022225>

Midgley, C. (2002). Goals, goal structures, and patterns of adaptive learning. Mahwah, N.J.: Routledge, eBook Collection, (EBSCOhost), assessed May 10, 2017.

Miner, J. (2015). *Organizational behavior 1: Essential theories of motivation and leadership*. Routledge, New York.

Miriam-Webster Dictionary (2017) <https://www.merriam-webster.com/dictionary>

Palmer, B., Stough, C., Harmer, R., Gignac, G. (2009) Assessing emotional intelligence, The Springer Series on Human Exceptionality, doi: 10.1007/978/0/387/88370/0/6, 103-227.

Pegler, C. (2012). Herzberg, hygiene and the motivation to reuse. Towards a three-factor theory to explain motivation to share and use OER. *Journal of Interactive Media in Education* 1. Biography Reference Bank (H.W. Wilson), EBSCOhost (assessed September 28, 2017).

- Petrides, K. V., Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences*, 29(2), 313-320.
- Petrides, K. V., Furnham, A., & Frederickson, N. (2004). Emotional Intelligence. *The Psychologist*, 17(10), 574–577.
- Petrides, K. V., Furnham, A., & Mavroveli, S. (2007). Trait Emotional Intelligence: Moving forward in the field of EI, In G. Matthews, M. Zeidner, & R. Roberts, R. (Eds.). *Emotional Intelligence: Knowns and unknowns (Series in Affective Science)*. Oxford: Oxford University Press, 151-166,
https://www.researchgate.net/profile/Stella_Mavroveli/publication/232435973_Trait_Emotional_Intelligence_Moving_Forward_in_the_Field_of_EI/links/54d0b9bb0cf20323c2190a9b.pdf
- Phillips, E. & Pugh, D. (2010) *How to get a Ph.D.: A handbook for students and their supervisors (5th Ed)*. Columbus, OH: McGraw-Hill Education.
- Raz, S., Zysberg, L. (2014). *Emotional intelligence: Current evidence for psychophysiological, education and organizational perspectives*. Hauppauge, NY: Nova Science Publishers, Inc.
- Reeve, J. M. (2013, August). How Students Create Motivationally Supportive Learning Environments for Themselves: The Concept of Agentic Engagement. *Journal of Educational Psychology*, 105(3). <http://dx.doi.org/10.1037/a0032690>
- Ryan, R. M.; Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 5, 68–78.
doi:10.1037/0003-066x.55.1.68.

- Ryan, R. M.; Deci, E. L. (1999). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54-67.
<https://doi.org/10.1006/ceps.1999.1020>
- Salovey, P., Brackett, M. & Mayer, J. (2004) Emotional intelligence: Key readings on the Mayer Salovey model. Port Chester, NY, US: Dude Publishing.
- Schetter, C & Dolbier, C. (2011). Resilience in the context of chronic stress and health in adults. *Social and Personality psychology Compass*, 5 (9), 634-652. Doi:10.1111/j.1751-9004.2011.00379.x
- Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5-14.
- Shooshtrarian, Z., Ameili, F., & Aminilari, M. (2013). The effect of labor's emotional intelligence on their job satisfaction, job performance and commitment. *Iranian Journal of Management Studies*, 6 (1), 29-45.
- Smallwood, S. (2004, January 16). Doctor dropout. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/prm/weekly/v50/i19/19a01001.htm>
- Snyder, C., R. (2000). *Handbook of hope: Theory, measures & applications*. San Diego, CA: Academic Press. <http://site.ebrary.com.libproxy.unm.edu/id/10188242>
- Stys, Y. & Brown, S. (2004). A review of Emotional Intelligence literature and implications for correction, Executive Summary, Correctional Service Canada, retrieved from www.csc-scc.gc.ca
- Tomer, J. (2003). Personal capital and emotional intelligence: An increasingly important intangible source of economic growth, *Eastern Economic Journal*, 29 (3) summer 2003, 453-469.

University of New Mexico Office of Institutional Analytics, office of Official Enrollment reports, 2015, <http://oia.unm.edu/facts-and-figures/official-enrollment-reports.html>

Weyhrauch, W. S. (2010). Psychological strength training: Can it help employees enhance their well-being? *Academy of Management Perspectives*, 24(2), 82-8.

Wilkinson, Frances. (2016). "Emotional intelligence: Increasing leadership effectiveness." (PowerPoint Lecture). Retrieved from Lecture Notes.