EFFECTIVE DOCTORAL EDUCATION: INTERPRETING FACTORS AND OUTCOMES

OF SUCCESS THROUGH A NEW FRAMEWORK, AUTOETHNOGRAPHY, AND

QUANTITATIVE STUDY OF PASSION

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North Dakota State University's regulations and meets the accepted standards

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ABSTRACT

The purpose of this disquisition is to increase knowledge about the factors and outcomes of success in doctoral education. Enhanced understanding about the factors and outcomes of success could help optimize effectiveness of the complex systems that educate doctoral students. To achieve the purpose of this disquisition, three manuscripts were prepared.

The first manuscript presents a new conceptual framework, the *P Model of Doctoral Success*, through which outcomes and factors of success could be interpreted. Outcomes of success are presented in terms of personal and professional outcomes. Personal outcomes include personal satisfaction; professional outcomes include measures of program completion, job placement, publications and professional satisfaction. Factors of success are comprised of basic, external, internal, and operational factors. Basic factors include *presence*, *proficiency*, *perspective*, and *pertinence*. External factors include *possibility*, *place*, *people*, and *prosperity*. Internal factors include *purpose*, *passion*, *persistence*, and *patience*. Operational factors include *process*, *practice*, *play*, and *pause*.

The second manuscript presents an autoethnographic method intended to enhance understanding of knowledge creation and reflective scholarship through a process of writing and interpreting personal reflections. Themes revealed through the analysis of reflections included *reflective scholar definitions*, *mindfulness*, *cycle of knowledge creation*, and *domains of knowledge creation*. The cycle of knowledge creation theme included sub-themes of *uncertainty*, *disciplined inquiry*, and *new perspective*. The domains of knowledge creation theme included *interest*, *career*, and *literature*. Interpretations of the themes are provided.

The third manuscript presents a quantitative study exploring passion for research. Existing Ph.D. students and Ph.D. alumni were administered an electronic survey, along with an

adapted version of Vallerand et al.'s (2003) *Passion Scale*. Paired samples *t*-tests indicated that participants possessed significantly higher levels of *harmonious passion* than *obsessive passion*. ANOVA results revealed statistically significant differences in levels of *obsessive passion* between three stages of doctoral education for participants representing the college of Human Development and Education. Multiple regression results indicated that *obsessive passion* and *harmonious passion* were significant predictors of knowledge creation and dissemination in terms of refereed publications. Implications of these results are provided for administrators, faculty, and researchers.

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To my children, Kaydra, Cole, and Claire, thank you for bringing joy to my life. I am deeply inspired by the unique gifts that you share with me and with the world. Thank you for trusting the value of the doctoral process. You have been so patient and understanding with the attention and time I directed toward the completion of my degree. I am further grateful to each of you for being such good students. Your dedication to doing your best in school regularly motivated me to be a better student throughout this entire program. You are my inspirations.

To my parents, Art and Lana, thank you for the love, encouragement, and resources you contributed to this journey. I express further appreciation for your authenticity, optimism, and boundless belief in my potential. Your presence and influence have instilled in me aspirations to be a lifelong learner and a contributor to our world. You are my role models.

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CHAPTER 1. INTRODUCTION

New knowledge improves the world, but from where does such knowledge derive? In many instances, doctoral education is a legitimate answer to this question. Doctoral education is intended to prepare students as knowledge creators who generate solutions and insights that make our communities and world a better place (Ostriker, Kuh, & Voytuk, 2011). Such intentions, however, do not always translate into desired outcomes. For example, considerable amounts of time, money, and other resources are often spent on the partial training of scholars who leave their doctoral programs prior to graduation. The cost of knowledge creation is steep, as depicted by steadily rising tuition rates (Clark & Wang, 2011). Attrition drives the cost of knowledge even higher. If universities were to measure their return on investment in terms of knowledge created per dollar spent, those with higher attrition rates could find themselves spending substantially more on knowledge creation than universities with low attrition rates.

Although doctoral education has grown in popularity throughout the past several decades, student attrition remains strikingly high, ranging between 40% and 50% (De Valero, 2001; Wendler et al., 2010). In terms of research doctorates, the number of degrees awarded has shown a yearly increase of 3.4% since 1958 (NSF, 2012a); yet, the 10-year completion rate remains low at approximately 57% (Council of Graduate Schools, 2008). This less than acceptable rate instills substantial concern across a broad array of stakeholders, including faculty members and administrators (Katz, 1997; Lenz, 1997).

High attrition defaces the value of postsecondary education in the eyes of many key markets and audiences (Kalsbeek, 2013). Universities, faculties, and students expend significant amounts of money, time, and effort on doctoral education, only to find these and other valuable resources wasted when students do not complete their programs. Further concern permeates

through public universities by means of taxpayers who find their hard-earned dollars being spent on the partial education of students who do not complete their programs (Schneider, 2010). Spending excessive amounts of such resources on students lost to attrition strips other students from opportunities to pursue doctoral degrees, inhibits the extent of knowledge that could be contributed to the academy and the larger society, and tarnishes the image of doctoral education in the eyes multiple stakeholders.

Each moment of time, ounce of effort, and penny of a dollar should be spent in a manner that educates all doctoral students to be fully formed scholars with capacities to create and evaluate new knowledge, safeguard critical ideas and discoveries from the past and present, understand the role of knowledge in stimulating change, and actively engage in the transformation of the world through responsible dissemination of knowledge (Walker, Golde, Jones, Conklin Bueschel, & Hutchings, 2008). Doctoral programs, especially those with high rates of attrition, need a better understanding of the factors that support the successful formation of scholars throughout and beyond the pursuit of a doctoral degree. Universities, faculty, and students who balk at the importance of understanding success in doctoral education simply contribute to the excessive costs of knowledge and to the strength of the barriers that hinder the creation of innovative insights, solutions, and understandings that could positively impact the world in which we live (NSF, 2012a; Wendler et al., 2010).

Background of the Problem

Doctoral education is an advanced level of graduate study that makes substantial contributions to the progress of cultures, societies, and nations through the development of scholars (Walker et al., 2008). Such scholars are forward thinkers and researchers who generate and disseminate new knowledge that leads to improved services, products, and other innovations

(NSF, 2012a; Ostriker et al., 2011). Often comprised of 60 credit hours beyond a master's degree (Jablonski, 2001), doctoral programs prepare students for research careers and other professional employment, within and beyond the realm of academia (Karp, 2009). In partial fulfillment of the program requirements, students typically demonstrate scholarly ability through the successful defense of a dissertation (Bryant, 2004), which marks an original contribution of knowledge to the academic domain (Lovitts, 2005; Ostriker et al., 2011). While a completed dissertation should represent a quality product of new knowledge, it does not need to be perfect; students navigating the doctoral process with a perfectionist mindset position themselves behind one of several potential barriers that could increase risk for prolonged completion or attrition (Single, 2010). Although sometimes questioned whether it is a necessary hurdle to jump, the dissertation is "often considered the capstone or final right of passage in doctoral education" (Knox et al., 2011, p. 55).

Types of Doctorates

Doctorate degrees are generally recognized as either research doctorates, such as Doctor of Philosophy (Ph.D.) degrees, or professional doctorates, such as Doctor of Business Administration (DBA) and Doctor of Education (Ed.D.) degrees (Bourner, Bowden, & Laing, 2001). The Ph.D. and professional doctorates both require original contributions of knowledge through rigorous methods of disciplined inquiry; however, notable differences between the two types of doctorates exist. For example, Ph.D. degree seekers are typically required to contribute knowledge that fills a gap in existing literature, whereas professional doctorate degree seekers are typically required to contribute knowledge that can be applied to solve a problem in their respective workplaces. Simply stated, Ph.D.s are expected to make contributions to theory; professional doctorates are expected to make contributions to practice. When considering criteria

leading to the selection of students for Ph.D. and professional doctorate programs, previous academic performance and department-related research interests are strongly considered for both, while relevant experience is often an additional criterion required for professional doctorates (Neumann, 2005).

Reasons for Pursuing Doctoral Education

Students pursue doctoral education for various reasons, often driven by a combination of personal and professional motivations (Ravitch & Riggan, 2012; Rossman, 2002). Professional motivations could include the desire to obtain a new job within or outside of academia, possibly as a scholarly researcher or university professor (Flowers & Lazaros, 2009). Personal motivations could include an inherent enthusiasm for the practice of research and exchange of ideas (Grover, 2004) or a desire to address specific questions for which answers are not adequately understood (Bolker, 1998). Additional motivations could include improved credibility, enhanced social status, or increased pay (Flowers & Baltzer, 2006).

Successful Doctoral Education

Successful doctoral education programs develop good students to be good scholars, often through academic environments that nurture collegial relationships and promote student participation in scholarly work (Weidman & Stein, 2003). Good doctoral students are assets to universities and faculty, creating exponential impacts when establishing themselves as renowned researchers (Grover, 2004). Alternatively, poor students can be liabilities, wasting faculty time and filling student slots that could have otherwise been filled by good, productive students. Poor students are at greater risk for attrition, which adversely impacts themselves, their families, postsecondary institutions, and society (Lenz, 1997).

The doctoral experience varies for students within and across disciplines (Gardner, 2009), prompting challenges in articulating a concise definition for doctoral education success. Though difficult to define, doctoral education success is often reviewed in terms of factors leading to outcomes that represent program completion and knowledge creation. A sample of factors commonly discussed includes selective admission processes, student supports, student/advisor relationship, disciplined inquiry, and student interest.

Selective admission processes. Being highly selective in the admissions process has been linked to doctoral education success in terms of higher completion rates (Gardner, 2009). Admission selectivity often begins with the assessment of tangible achievements and test scores (Ostriker et al., 2011), such as GPA and GMAT scores (Grover, 2004). Purposeful selection processes, further focused on assessing communication skills and personality and on matching the capacities and interests of competent students with relevant programs, help ensure that the right students are selected for the right programs. A student in a properly fitted program has a greater chance of staying in the program through its intended duration much the same as a foot in a properly fitted shoe has a greater chance of wearing the shoe through its intended lifespan. Ambiguous selection processes could lead to a poor fit, prompting withdrawal from the program prior to completion.

Student supports. Adequate levels of student supports could help students successfully endure the complete journey of doctoral education. Students frequently encounter undue fears and stresses toward doctoral studies because they do not know how to navigate graduate school processes (Peters, 1997). They can be ineffective in managing resources critical to their success, including their time, projects, professional and social networks, faculty, and advisor (Grover, 2004). Lovitts (2005) indicated that graduate students are often good course-takers; however,

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many good course-takers struggle with the transition to being independent, creative researchers. Especially during the dissertation stage of study, students frequently find themselves burdened by time constraints and uncertainties (Bryant, 2004), which could stem from an inability to effectively align personal interests with an important topic, research questions, literature, and methods of inquiry (Ravitch & Riggan, 2012). Student supports, including graduate school orientation resources, peer mentors, and scholarly networks could help students work through barriers to effective doctoral education that might otherwise prevent them from completing their programs, as well as stir up an array of negative emotions, such as sadness, frustration, and exhaustion (Knox et al., 2011).

Student/advisor relationship. A doctoral student's advisor is a critical variable along the doctoral journey (Council of Graduate Schools, 2010; Single, 2010). Favorable graduate school experiences, including dissertation experiences, have been associated with positive relationships between student and advisor, whereas problematic experiences have been associated with poor relationships between student and advisor (Knox et al., 2011). Matching students with advisors who share similar research interests could help ensure that relationships are optimized across the duration of the doctoral journey, especially during the dissertation phase of the program (Bryant, 2004). Selecting a dissertation topic that aligns with advisor interests could further support positive outcomes, including timelier completion (Peters, 1997). The level at which an advisor should be involved during the dissertation stage seems to depend largely on individual student needs and preferences. For example, students who finished their dissertations in a relatively short period of time indicated that an autonomous process facilitated by a non-directive advisor was appreciated (Cuetara & LaCapitaine, 1991); however, students who took longer to complete

or did not finish their dissertations indicated that the lack of structure experienced through a non-directive advisor was a serious concern.

Disciplined inquiry. Disciplined inquiry represents the general process of creating new knowledge and insights through various methods, including research, evaluation, and assessment. Research activity has been identified as an important indicator of quality in research doctorate programs (Ostriker et al., 2011). Good research is conducted by first asking, then acting upon, the right questions. This is in line with Covey's (2004) argument to start any given journey with a clear vision of one's desired destination, goal, or outcome, which could exist in the form of a desired answer to a research question that represents the outcome of new knowledge. To "begin with the end in mind" (p. 96) will provide students with a coherent understanding of the types of questions they want to ask and the type of knowledge they want to create, helping to ensure that the step they take at any moment is always a step taken in the right direction.

The absence of good research questions could present a critical barrier along the doctoral journey by inhibiting student potential to engage in a level of disciplined inquiry that meets the academy's rigorous expectations for the creation of scholarly products. If students find themselves lacking an awareness of researchable questions, Barney and Mackinlay (2010) suggested written reflection as an effective means to bring critical questions to the forefront of one's consciousness.

Student interest. Effective doctoral education calls for students to be interested in a discipline-relevant topic (Karp, 2009; Knox et al., 2011), as well as to be interested in the process of disciplined inquiry (Cuetara & LeCapitaine, 1991). Adequate exposure to research through coursework or other scholarly practices of disciplined inquiry could enhance student

interest in research and student capacity to identify and resonate with a researchable topic. Inadequate exposure, coupled with deficiencies of relevant knowledge, self-awareness, and experience, could prompt doctoral students to pursue research topics beyond their scope of interest (Fernando & Hulse-Killacky, 2006), potentially prompting attrition or prolonged time to completion (Smallwood, 2004). Much the same as a child would be at greater risk for quitting an activity or closing a book on a topic that fails to captivate one's interest, a graduate student is at greater risk for withdrawing from the doctoral journey if the activity of disciplined inquiry or topic of exploration does not resonate with one's interest.

Time to Degree

Time to degree is a common variable for reporting the amount of time it takes to complete a doctoral program (Gardner, 2009; NSF, 2012a; Ostriker et al., 2011). This variable has been discussed in terms of various measures, including the number of years elapsed from completion of the bachelor's degree to completion of the doctoral degree, the number of years registered in graduate school not including periods of non-enrollment, and age at completion of the doctoral degree. Drawing from data collected through the Survey of Earned Doctorates (SED), a yearly census of doctorate degree recipients (NSF, 2012a), Hoffer and Welch (2006) reported the median time to degree from completion of bachelor's degree was 10.1 years; the median time enrolled in graduate credits was 7.5 years, and the median age at completion of a doctoral degree was 33.3 years. Time to degree is an important variable of consideration because the longer it takes for students to complete their doctoral programs, the more susceptible they become to leaving their programs before completion (Kim & Otts, 2010).

Doctoral Student Attrition

Attrition refers to students leaving their programs prior to completion. Attrition rates for doctoral education are strikingly high, ranging between 40% and 50% (Wendler et al., 2010). This is in line with the 57% 10-year completion rate for research doctorates reported by the Council of Graduate Schools (2008). The inability to identify and pursue a manageable, or practical, research topic and the misalignment of student and advisor objectives have been cited as reasons why students leave their programs prematurely (Di Pierro, 2011; McClellan, 2012). Students might choose to leave early as a result of misguided goals and motivations, inadequate resources and finances, geographical restrictions, and family commitments (Flowers & Lazaros, 2009). Their risk for attrition could be heightened to an even greater degree if they perceive themselves as less academically inclined than the other students in their program, although their GRE and other tests scores might be comparable (Golde, 2005). Attrition can lead to a variety of negative implications, resulting from the expenditure of tangible and intangible resources on students who do not produce the knowledge they are intended to create. Examples of wasted resources include money at the individual, university, state, and federal levels; faculty time and resources; and the intellectual capacities of competent student minds.

Statement of the Problem

Literature is relatively abundant in the general concept of success in doctoral education (Biklen & Casella, 2007; Grover, 2004; Karp, 2009; Ostriker et al., 2011; Single, 2010). However, as reported by Golde & Dorne (2001), many students lack an understanding of what doctoral education involves and how to effectively navigate the process of doctoral study, potentially prompting attrition. High attrition rates ranging between 40% and 50% (De Valero, 2001) lead to increased tuition costs, fewer fully formed scholars, lost opportunities for students

seeking to pursue doctorate degrees, and tarnished views of doctoral education in the eyes of multiple stakeholders (Wendler et al., 2010). A heightened understanding of success in doctoral education is needed to help ensure that money and other valuable resources intended for the creation of new knowledge are not wasted on students who do not complete their programs.

Purpose of the Disquisition

This disquisition is intended to increase knowledge about the interplay among factors and outcomes of success in doctoral education, offering contributions to enhanced understandings of the complex systems that could help more doctoral students complete their programs and achieve greater levels of success through creation and dissemination of knowledge during and beyond graduate study. Drawing from the premise of alliteration, constructing a model of success with terms that begin with the same consonant sound will enhance student ability to recall, and resonate with, critical variables of success. Drawing from the premises of differentiated instruction (Lawrence-Brown, 2004; Tomlinson & McTighe, 2006) and postmodern philosophy (Wall, 2006), presenting doctoral education success through a restructured lens could enable the message of success to reach, and resonate with, a broader array of doctoral students.

Enhanced understanding about the domains of knowledge creation and the cycle of knowledge creation will help doctoral students focus their attention and effort toward directions that lead to knowledge creation, which is a requirement for program completion and indicator of lasting success. Although all factors of success are considered important, a deeper understanding of the quantifiable degree to which factors impact outcomes of doctoral success will enhance awareness of the degree to which emphases should be placed on given factors of success.

Walker et al. (2008) emphasized the importance of merging several lenses to address such problems within doctoral education, which included a call to students to be more actively

involved in contributing to the understandings of such opportunities and problems. The purpose of this disquisition, therefore, is to respond to the call for students to be active contributors to the enrichment of academia's knowledge of success in doctoral education. This disquisition is comprised of three distinct yet interconnected manuscripts that will simultaneously add to academia's knowledge of how doctoral students successfully build upon, discover, and position themselves as contributors of their unique gifts, passions, and core values.

Manuscript 1

This manuscript presents a new conceptual framework shaped through the notion of success in doctoral education. The framework, the *P Model of Doctoral Success*, includes factors and outcomes of doctoral success. Drawing from the premises of postmodern philosophy, differentiated instruction, and alliteration, this model is intended to serve as a new presentation and synthesis of success variables. The model includes indicators of success presented in terms of personal and professional outcomes. Professional outcomes include measures of program completion, job placement, publications, and professional satisfaction. Personal outcomes include personal satisfaction.

The factors of success are comprised of basic factors, external factors, internal factors, and operational factors. Basic factors include *presence* (e.g. being attentive to the moment); *proficiency* (e.g. adequate intellectual competence); *perspective* (e.g. ability to view contexts through multiple lenses); and *pertinence* (e.g. focusing on issues relevant to the academic community, personal goals, and professional goals). External factors include *possibility* (e.g. identifying or being presented with the right opportunities; *place* (e.g. being at the right university in the right program); *people* (e.g. being supported by the right network of friends, family, scholars, and other professionals); and *prosperity* (e.g. having adequate resources,

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financial and other). Internal factors include *purpose* (e.g. knowing or sensing a deeper meaning for the doctoral journey); *passion* (e.g. something one likes, invests effort in, and finds important); *persistence* (e.g. taking action in the face of adversity); and *patience* (e.g. waiting for the optimal time to take action). Operational factors include *process* (e.g. synchronized mobilization of internal and external factors); *practice* (e.g. activities related to academic scholarship); *play* (e.g. recreational activities unrelated to academic scholarship); and *pause* (e.g. moments of rest). A concise definition of doctoral education success is presented as a common place from which the variables in the *P Model of Doctoral Success* could be rooted and interpreted.

Manuscript 2

The purpose of the second manuscript was to enhance understanding of knowledge creation and reflective scholarship through a process of writing and interpreting personal reflections. According to Ellis and Bochner (2000), autoethnography is an "autobiographical genre of writing and research that displays multiple layers of consciousness, connecting the personal to the cultural" (p. 739). It represents a highly personalized writing style (Wall, 2006), presented through a broad array of forms, including novels, essays, journals, poems, and social science manuscripts (Ellingson & Ellis, 2008).

Throughout the autoethnographic study, I served dual roles as the researcher and the participant, analyzing 31 reflections that I had written over the course of approximately four months. Themes revealed through the analysis included *reflective scholar definitions*, *mindfulness*, *cycle of knowledge creation*, and *domains of knowledge creation*. The cycle of knowledge creation theme included sub-themes of *uncertainty*, *disciplined inquiry*, and *new*

perspective. The domains of knowledge creation theme included *interest*, *career*, and *literature*. Interpretations of the themes are provided, along with connections to literature.

Manuscript 3

This manuscript presents a quantitative study on passion for research. Passion for research, as a factor of success in doctoral education, has been discussed in qualitative terms; however, quantitative studies on passion for research are rare. For this study, Vallerand et al.'s (2003) *Passion Scale* was adapted for the activity of research to help better understand the roles that *harmonious passion* for research and *obsessive passion* for research play in doctoral education success. *Harmonious passion* has been described as an autonomous, positive form of passion, whereas *obsessive passion* has been described as a negative form of passion that results from an external force or pressure. This study sought to answer whether differences existed between levels of the two types of passion for research, *obsessive passion* and *harmonious passion*, for doctoral students and alumni; whether differences in each type of passion existed at different stages of the doctoral journey; and whether the two types of passion were significant predictors of doctoral education success in terms of knowledge creation and dissemination. The adapted *Passion Scale*, along with an adjacent survey with questions requesting demographic and knowledge creation information, was administered electronically to Ph.D. students and Ph.D. alumni representing a Midwestern research university. The sample was comprised of 209 respondents, including 62 students who had not yet completed coursework, 48 students who had completed coursework but not yet graduated, and 99 alumni.

Paired samples *t*-test results indicated a significantly higher level of *harmonious passion* for research ($M = 4.58$, $SD = 1.36$) over *obsessive passion* for research ($M = 2.46$, $SD = 1.34$), $t(208) = 22.80$, $p < .01$. ANOVA results indicated that *harmonious passion* differences between

the three stages of doctoral education were not significant in the aggregate [$F_{(2,206)} = 0.35$; $p > .05$] and that *obsessive passion* differences between the three stages of doctoral education were also not significant in the aggregate [$F_{(2, 206)} = 0.81$; $p > .05$]; however, when disaggregating the sample by college, ANOVA results revealed significant [$F_{(2,42)} = 7.16$; $p < .01$] *obsessive passion* differences between the three stages of doctoral education for participants representing the college of Human Development and Education. Multiple regression indicated that *harmonious passion* for research and *obsessive passion* for research explained approximately 4% ($R^2 = .04$) of the variability in knowledge creation and dissemination [$F_{(2,206)} = 4.50$; $p < .05$] in the aggregate. When disaggregated by college, multiple regression indicated that *harmonious passion* for research and *obsessive passion* for research explained approximately 13% ($R^2 = .13$) of the variability in knowledge creation and dissemination [$F_{(2,46)} = 3.37$; $p < .05$] for participants representing the College of Science and Mathematics. Interpretations of the results were discussed and implications for administrators, faculty, and researchers were presented.

Summary

This chapter provided a brief overview of doctoral education, including the general purpose of doctoral education, types of doctorates, reasons for pursuing a doctorate, factors and outcomes of success, and why it is important to advance the academy's understanding of doctoral education success. In summary, the purpose of doctoral education is to prepare students to create knowledge that positively impacts our world (Ostriker et al., 2011; Walker et al., 2008). Types of doctorates are typically categorized as either research doctorates (e.g. Ph.D.), which create knowledge that fills a gap in literature, or professional doctorates (e.g. DBA or Ed.D.), which create knowledge that can be practically applied in specific workplaces. Reasons for pursing doctoral education include personal motivations, such as enthusiasm for research

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(Grover, 2004), and professional motivations, such as career advancement (Flowers & Lazaros, 2009).

Success of doctoral education programs has often been discussed in terms of factors and outcomes of success. Factors of success include highly selective admission practices (Gardner, 2009), adequate levels of student supports (Peters, 1997), student and advisor relationship (Council of Graduate Schools, 2010; Single, 2010), discipline inquiry opportunities (Ostriker et al., 2011), and student interest in a research topic (Karp, 2009; Knox et al., 2011) and the practice of research (Cuetara & LeCapitaine, 1991). Outcomes of success have been discussed in terms of time to degree (Hoffer & Welch, 2006; NSF, 2012a) and knowledge creation, which is a requirement for program completion (Bryant, 2004; Lovitts, 2005).

Advancing the academy's knowledge of success in doctoral education is important because the attrition rate remains high, between 40-50% (De Valero, 2001; Wendler et al., 2010). Improving the understanding of doctoral education success could help curb attrition rates and lead to enhanced quantities and qualities of knowledge creation. The next three chapters of this disquisition strive to extend the academy's understanding of successful doctoral education through three distinct manuscripts that address various facets of doctoral education success, including a new framework for interpreting the factors and outcomes of success, an autoethnographic study exploring the outcome of knowledge creation in terms of reflective scholarship, and a quantitative study measuring the extent to which the factor of passion for research impacts the outcome of knowledge creation.

CHAPTER 2: THE *P MODEL OF DOCTORAL SUCCESS*: A FRAMEWORK FOR

SUCCESS IN DOCTORAL EDUCATION

Although doctoral education has grown in popularity throughout the past several decades, student attrition remains strikingly high, ranging between 40% and 50% (De Valero, 2001; Wendler et al., 2010). In terms of research doctorates, since 1958, the number of degrees awarded each year has shown a yearly increase of 3.4% (NSF, 2012a); yet, the 10-year completion rate has been reported at 57% (Council of Graduate Schools, 2008). This less than acceptable rate instills substantial concern across a broad array of stakeholders, including faculty members and administrators (Lenz, 1997). Such low completion rates strip other students from opportunities to pursue doctoral degrees, inhibit the extent of knowledge that could be contributed to the academy, and tarnish the image of doctoral education in the eyes of multiple stakeholders.

Background of Success in Doctoral Education

Successful doctoral education programs prepare good students to be effective scholars through academic environments that nurture collegial relationships and promote student participation in scholarly work (Weidman & Stein, 2003). Good doctoral students are assets to universities and faculty, creating exponential impacts when establishing themselves as renowned researchers (Grover, 2004). Alternatively, poor students can be liabilities, wasting faculty time and occupying student slots that could have otherwise been filled by good, productive students. Poor students are at greater risk for attrition, which adversely impacts themselves, their families, postsecondary institutions, and society (Lenz, 1997).

The doctoral experience varies for students within and across disciplines (Gardner, 2009), prompting challenges in articulating a concise definition for doctoral education success. Though

difficult to define, doctoral education success is often reviewed in terms of factors leading to outcomes that represent program completion and knowledge creation. Factors commonly discussed include selective admission processes, student supports, student/advisor relationship, disciplined inquiry, and student interest.

Statement of the Problem

Authors tend to discuss doctoral education success in terms of factors and outcomes. Although multiple variables have been identified as contributors or indicators of success, difficulty emerges when attempting to root the variables to succinct definitions of success. The inability to connect success variables to a common definition could trigger negative implications, as stated by Gardner (2009), "without a coherent view of what it means to be successful in doctoral education, the measurements and outcomes expected of students remain ambiguous" (p. 384). To help clear up the ambiguity surrounding the image of doctoral education success, Walker et al. (2008) argued that the opportunities and challenges facing doctoral education should be viewed through multiple lenses. Grover's (2004) *Rough Model for Success in Doctoral Study* serves as one lens of interpretation, but closes with a call for more granularity in defining the contributors to, and outcomes of, doctoral success.

Purpose of this Paper

The purpose of this paper is to respond to Gardner's (2009) statement pertaining to negative implications that stem from an incoherent view of doctoral education success, to Grover's (2004) call for a more granular model of doctoral education success, and to Walker et al.'s (2008) call for additional lenses through which to interpret doctoral education success. In response to Gardner's (2009) statement pertaining to the adverse consequences of an incoherent

view of success, a concise definition of success is presented as common language from which the factors and outcomes of doctoral education success could be rooted.

In response to Grover's (2004) call for a more granular model depicting variables of doctoral education success and Walker et al.'s (2008) call for additional lenses of interpretation, the *P Model of Doctoral Success* conceptual framework has been constructed as a differentiated lens, with added granularity, through which the message of success could be interpreted and further explored. The framework is not intended to reinvent the factors and outcomes of success in doctoral education; rather, the intent is to portray a new lens through which doctoral education success could be interpreted and understood. This paper includes descriptions of each variable in the model, as well as reflection questions relevant to each factor.

Defining Doctoral Success

The concept of success in doctoral education is framed by several variables, including factors that contribute to success and outcomes that serve as indicators of success. Success is not defined by a single outcome; it is, rather, marked by a sustainable process of achieving multiple outcomes relevant to the doctoral journey. To define doctoral education success in terms of factors and outcomes presented in *P Model of Doctoral Success*, a definition should include representation of an ongoing process marked by contributions of knowledge creation and implications of individual satisfaction. A concise definition aligning with these suggestions, and encapsulating the essence of the factors and outcomes presented in the *P Model of Doctoral Success*, could be stated as a sustainable, satisfying process of generating outcomes that support the evolution of academia.

Success in doctoral education is marked by continuous moments of satisfaction while taking steps that lead to degree completion and the creation of knowledge. To be clear,

satisfaction in this context is not intended to represent a specific type of emotion, such as happiness or pleasure. Satisfaction, rather, implies a sense of fulfillment or perhaps even a form of contentment throughout the journey. It represents an inherent knowing of meaningful purpose for the doctoral pursuit, whether in a state of happiness, frustration, anger, sadness, apathy, or other emotion. Regardless of which emotion might be felt, it is possible for a student to experience a continuous sense of satisfaction knowing that the doctoral journey is the right path for the student to follow.

A New Framework for Success

The *P Model of Doctoral Success* serves as an innovative means of synthesizing and presenting factors and outcomes of doctoral education success. Much the same as the practice of differentiated instruction enables common content to resonate with various types of learners through diverse pedagogical model implementation (Lawrence-Brown, 2004; Tomlinson & McTighe, 2006), expanding the existence and availability of doctoral education success models enables the message of doctoral success to resonate with a yet untapped array of doctoral student learning styles. This is in line with the tenets of postmodern philosophy, suggesting that knowledge can be obtained and shared through a multitude of means (Wall, 2006) and with Walker et al.'s (2008) argument that the opportunities and challenges facing doctoral education should be viewed through multiple lenses.

The *P Model of Doctoral Success* is a complex arrangement of factors presented in a simplified structure to enhance the memory of, and resonance with, the variables that represent and contribute to doctoral education success. Memorization is an important step in changing behavior, as referenced in the original and revised versions of Bloom's Taxonomy (Krathwohl, 2002) and Merrill's (1971) hierarchical explanation of memorization behavior as a prerequisite

for complex cognitive behavior, which is a developmental level necessary for higher order analyses and problem solving. As an alternative or supplemental lens through which to interpret success, the *P Model of Doctoral Success* supports the requirement for enhanced recollection of critical factors as a necessary step along the journey to produce intended outcomes of doctoral education. To increase memorization and resonance with variables comprising the framework, the *P Model of Doctoral Success* intentionally draws from facets of alliteration, linguistic metaphor, and visual metaphor to help improve memory of, and resonance with, the variables that comprise the framework.

Several authors have indicated that alliteration, using words that begin with same letter, could improve memorization of content (Bryant, MacLean, Bradley, & Crossland, 1990; Lea, Rapp, Elfenbein, Mitchel, & Romine, 2008; Stoll, 1940). Others have argued that the use of metaphor, both linguistic metaphor (Ortony, 1975) and visual metaphor (Feinstein, 1982), enhances resonance with abstract concepts by contributing to the understanding and experience of one thing in terms of another (e.g. Lakoff & Johnson, 2003). As such, the collaborative application of alliteration, linguistic metaphor, and visual metaphor could arguably contribute to a heightened understanding of the specific role or roles that each factor plays, depicting a clearer image of how the factors collaboratively function to help students achieve success.

Alliteration informed the naming of each factor with a word that begins with the letter *p*. The lens through which the model is presented was further informed by a bicycle metaphor, both linguistically and visually. A bicycle was selected as the metaphor of choice because just as an actual bicycle exists as a vehicle for transportation toward intended destinations, the metaphorical bicycle represents a vehicle for transportation toward intended outcomes of success. An actual bicycle is systematically engineered with specific parts to build a vehicle that

a person can mount, put in motion, and maneuver along a path to reach an intended destination. The metaphorical bicycle for doctoral success is systematically engineered with specific variables to build a vehicle that a doctoral student can mount, put in motion, and maneuver to achieve intended destinations or outcomes of doctoral. The functions of the bicycle for doctoral success factors, which are further explained in subsequent sections of this narrative, strategically align with the functions of an actual bicycle, reinforcing the decision to present a model doctoral education success through a bicycle metaphor. To optimize the effectiveness of both vehicles, the actual bicycle and the metaphorical bicycle, the vehicles need to be cohesively built and the operators of vehicle each need to know how navigate them with intentionality, skill, and strength. The *P Model of Doctoral Success* presents a systematically designed vehicle for doctoral success, including explanations of how each factor aligns with a component of an actual bicycle and the essential function of each factor in terms of its role as a necessary variable for success.

The *P Model of Doctoral Success* bicycle metaphor portrays the interplay of success variables in terms of personal and professional outcomes, as well as basic, internal, external, and operational factors (see Figure 2.1). Professional outcomes include measures of program completion, job placement, publications, and presentations. Personal outcomes include personal satisfaction and quality of life. Basic factors include *presence* (e.g. being attentive to the moment), *proficiency* (e.g. adequate intellectual competence), *perspective* (e.g. ability to view contexts through multiple lenses), and *pertinence* (e.g. focusing on issues relevant to the academic community, personal goals, and professional goals). External factors include *possibility* (e.g. identifying or being presented with the right opportunities), *place* (e.g. being at the right university in the right program), *people* (e.g. being supported by the right network of

friends, family, scholars, and other professionals), and *prosperity* (e.g. having adequate resources, financial and other). Internal factors include *purpose* (e.g. knowing or sensing a deeper meaning for the doctoral journey), *passion* (e.g. something one likes, invests effort in, and finds important), persistence (e.g. taking action in the face of adversity), and *patience* (e.g. waiting for the optimal time to take action). Operational factors include *process* (e.g. synchronized mobilization of internal and external factors), *practice* (e.g. activities related to academic scholarship), *play* (e.g. recreational activities unrelated to academic scholarship), and *pause* (e.g. moments of rest).

Outcomes of Success

Outcomes of successful doctoral education have commonly been discussed in terms of professional indicators, though personal satisfaction has also been pointed toward as a notable indicator during and following pursuit of the doctoral degree (Jablonski, 2001; Neumann, 2005). For the purposes of discussing indicators in this narrative, professional outcomes will be the primary focus. Professional outcomes include academic achievement, retention, program completion (Gardner, 2009), time-to-degree (NSF, 2012a), knowledge creation during and following program completion, and job placement (Grover, 2004; Ostriker et al., 2011). Academic achievement has been assessed through measures of grade point average; retention has been assessed through measures of year-to-year persistence; and program completion has been measured by whether or not degrees were awarded to students.

Time to degree has been discussed in terms of various measures, including the number of years elapsed from completion of the bachelor's degree to completion of the doctoral degree, the number of years registered in graduate school not including periods of non-enrollment, and age at completion of the doctoral degree. Drawing from data collected through the Survey of Earned
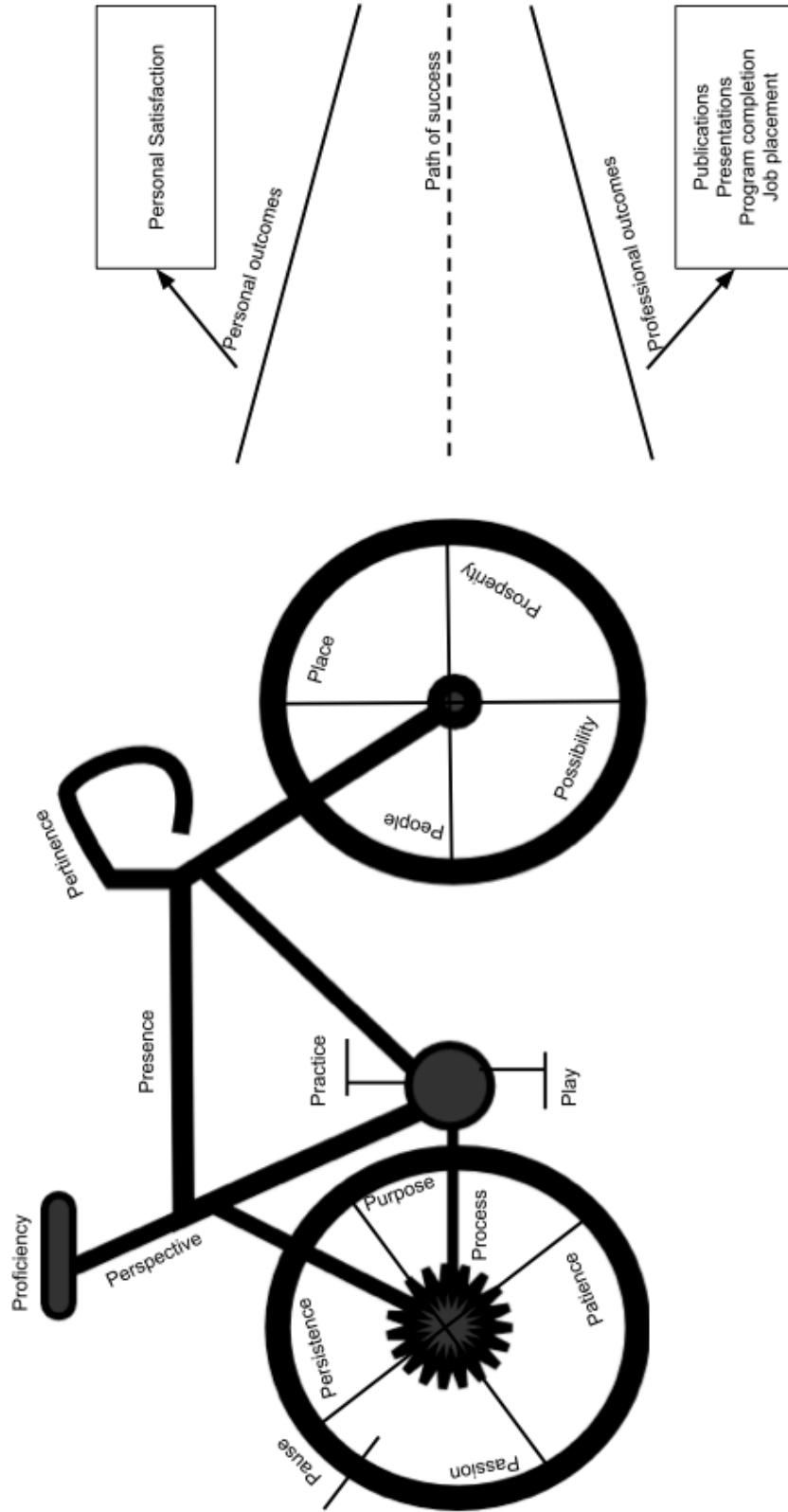
Figure 2.1. The *P Model of Doctoral Success* bicycle diagram.

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Doctorates (SED), a yearly census of research doctorate degree recipients (NSF, 2012a), Hoffer and Welch (2006) reported that the median time to degree for all fields from completion of bachelor's degree was 10.1 years; the median time enrolled in graduate credits was 7.5 years, and the median age at completion of a doctoral degree was 33.3 years. Time to degree values tend to be greater for the field of education. Specific to the field of education, the median time to degree from completion of bachelor's degree was 18.2 years; the median time enrolled in graduate credits was 8.3 years, and the median age at completion of a doctoral degree was 43.5 years.

The outcome of knowledge creation has been measured through the successful defense of a dissertation, which is a requirement for program completion, as well as though the numbers of refereed and non-refereed publications and presentations students have produced during and following pursuit of a doctoral degree. Refereed demonstrations of knowledge have typically been regarded as higher quality products than those that have not been refereed (Skolits, Brockett, & Hiemstra, 2011). Measures of knowledge creation have been assessed through the Survey of Doctorate Recipients (SDR), a longitudinal, biennial panel survey of research doctorate holders in the United States (NSF, 2012b; Thurgood, Golladay, & Hill, 2006). The SDR also includes assessment of job placement through data relevant to the level of expertise required for current careers of doctoral degree holders.

Basic Factors of Success

The basic factors of success represent components of a bicycle that provide a frame upon which all factors of success can be strategically connected, a place for students to mount the bicycle, a way for students to adjust the angle at which they see the path ahead of them, and a component allowing students to maneuver in relevant directions. These basic factors include *presence, proficiency, pertinence,* and *perspective. Presence* helps ensure that each factor is

utilized in the right way at the right time. *Proficiency* ensures that student skills and knowledge reflect the potential to engage in rigorous academic initiatives. *Pertinence* represents a capacity to pursue a doctoral journey that is relevant to the academic community, personal goals, and professional goals. *Perspective* represents an ability to position oneself in a manner that openly welcomes, appreciates, considers several diverse ways of looking at the world. Collectively, these factors embody a foundational level of competence necessary for the onset and duration of the journey.

Presence. *Presence* is among the most critical of all success factors, which is why it represents the frame of the bicycle. It is the variable upon which all other factors are properly placed. It enables all factors to work synchronously with one another. Through *presence*, the right attention can be directed toward the right factor or combination of factors at the right time. *Presence* is not so much of a physical presence, but rather an awareness of the moment, or a spiritual presence; a capacity to see beyond the clouds of distraction that have a tendency to stagnate performance at all levels and weaken outcomes across a wide array of contexts, doctoral education or other. Certainly, physical presence could be considered an essential element of doctoral education; however, physical presence in the absence of conscious, mindful *presence* could impose negative consequences throughout doctoral journey.

Presence (i.e. mindfulness, consciousness, awareness, being) refers to a person's ability to live in the current moment, at any time in any context (Tolle, 1999). It is not something that "will be" at some point in the future; it is something that "is now" at this very moment. Everyone has the capacity to exist in a state of presence any time in any place. It is the frame through which one rests or moves in conscious awareness of a given environment, the raft upon which one floats to maintain sync with the stream of life. It enhances understanding of how and

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where one fits into the world and helps one resonate with the value of any circumstance. It enables a position of subjective objectivity (i.e. seeing one's own biases while welcoming other perspectives with an open mind).

A doctoral student in the *present* moment is not lost in thought spending too much time reminiscing or dwelling on the past or anticipating too much about what is to come in the future; nor is the student devoting excessive focus to rejecting or judging that which currently exists (Germer, 2005). Yes, there is an appropriate time for reflecting on the past and planning for the future, and when one is in the right time and place to reflect or plan, then that is what should be done. *Presence* represents a capacity to reflect-in-action (Schön, 1987), or to engage in praxis (Freire, 2007), simultaneously thinking the right thoughts and acting the right actions at the right time. As such, reflecting on the past and planning for the future of the doctoral journey can be entirely meaningful; however, when the focus toward the past takes the form of dwelling or the focus toward the future is shaped by unhealthy anticipation or unrealistic expectations, such intense focuses could generate adverse outcomes, including the avoidance of necessary action (Rohr, 1995). When students spend too much time worrying about what they think they could have done differently or what else they think they should be doing right now instead of that which they are actually doing right now, the quality of the current moment is impaired. This is true for all moments in life, and especially important along the journey of doctoral education.

It seems that doctoral students are often at risk for undue frustration because their choices and voices are driven by institutional or societal pressures more often than by their instincts or hearts. Somehow they seem to be taught to believe that satisfied processes and outcomes are achieved by following a path that supports someone else's satisfaction and success. What they might not seem to realize is that they could follow a special path of success and contentment that

exists in alignment with their unique combination of interests, skills, and inherent gifts; they simply need to listen to their hearts to ensure that they progress in the direction that is the right fit for their individualized path of success. Fully *present* doctoral students are aware of their authentic selves and are attentive to how and where they can nourish their inherent gifts and truest interests. Being attentive to their truest gifts, interests, and feelings will help doctoral students walk a journey that aligns with their dreams and *passions*.

Presence enhances one's awareness of opportunities to create change. Cervero, Wilson, and Associates (2001) suggested that people must identify and act upon opportunities to impact change, regardless of the contexts in which they work. By being *present*, students set the platform to be engaged; they position themselves to contribute to the process of change through the creation of new knowledge. *Presence* puts students in sync with the right type of engagement at the right time. Engagement could take the form speaking out, negotiating, or resisting the status quo; or it could exist in the form of resting, listening, remaining still, or simply going with the flow. *Presence* enables students to be in harmony with the moment, prompting them to do what's right at the right moment. In a state of *presence*, students remain still and quiet when the timing is right to remain still and quiet, and they speak up and move when the timing is right to speak up and move. In either case, *presence* allows students to be fully aware and engaged at the appropriate level. Whether they are still or active, or listening or speaking, they are actively engaged in the process of waiting for, identifying, and acting upon opportunities to take the next steps in their journeys and ultimately impact change through the creation of new knowledge.

Proficiency. *Proficiency* is represented by the seat of the bicycle to reflect a solid platform of understanding and knowledge upon which further knowing can be nourished. Students are positioned on the seat of *proficiency* when they possess adequate levels of

competence to apply tools necessary for the absorption, interpretation, synthesis, and dissemination of knowledge (Grover, 2004). Appropriate levels of reading, writing, and oral communication skill are critical for exploring literature, completing assignments, and engaging in scholarly dialogue. *Proficiency* at the admission stage is often assessed in terms of tangible achievements and test scores (Ostriker et al., 2011), such as GPA, GMAT, and GRE scores. *Proficiency* is further demonstrated through the simultaneous confidence in what one knows and does not know. As indicated by Confucius, a *proficient* level of knowledge is the recognition of knowing something when one knows it and the recognition of not knowing something when one does not know it (The analects of Confucius, trans. 1989).

  Perspective. *Perspective* is represented by the adjustable seatpost of the bicycle. The adjustable seatpost is indicative of a capacity to maneuver one's perspective in a manner that enables a given context to be interpreted from more than one point of view. The importance of perspective has deep roots; for example, Confucius indicated that a wise person is able to view a question through a multitude of perspectives in the absence of bias, while an ignorant person is biased and only sees a question through one perspective (The analects of Confucius, trans. 1989). A malleable perspective allows students to not only see their context through an objective lense, but to also be aware of how their own subjectivities could impact the way they see the world around them. Flowers and Lazaros (2009) advised students to remain open minded. Navigating the doctoral process with an ability to see each step through multiple perspectives, or with an open mind, could lighten the burden of challenges as students move through the doctoral journey. Narrow mindedness at the student and/or faculty level could have negative implications; for example, differing perspectives among committee members or between student and committee members could result in attrition or prolonged time to degree (McClellan, 2012).

Pertinence. *Pertinence*, which could alternatively be termed relevance, refers to aligning the doctoral journey with personal and professional visions and goals. As noted by Chant, Moes, and Ross (2009), "viewing all the information relevant to one's existing challenge can be extremely empowering" (p. 63). Pertinence is represented by handlebars in the bicycle figure, symbolic of a component important for directing motion that remains within the boundaries of personal and professional outcomes. In terms of creating knowledge, *pertinence* represents alignment with scholarly literature to ensure that new knowledge is relevant to the current academic domain (Ravitch & Riggan, 2012). Navigating doctoral experiences with the handlebars of *pertinence* helps ensure that assignments, discussions, readings, and other efforts are guided by intentions to make progress toward desired outcomes. A path bound by professional and personal outcomes that lack alignment could impede progress toward the achievement of desired outcomes. For example, on a wide path, defined by desired personal and professional outcomes that are far apart from one another, students risk moving in a zigzagged manner, directing efforts toward personal outcomes, then to professional outcomes, then back to personal outcomes, and so on. The path of success is narrowed when the *pertinence* of efforts to achieve personal outcomes aligns with the *pertinence* of efforts to achieve professional outcomes. A narrow path reduces the degree of zigzagged efforts, resulting in accelerated processes and enriched outcomes.

Internal Factors of Success

The internal factors of success include *purpose, passion, persistence,* and *patience*. These factors represent the rear wheel of the bicycle because they essentially push the bike forward. Activation of the internal factors enables proper interaction with the external factors, which are represented by the front wheel. If the internal factors are not activated, many or all of the

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external factors will still exist; however, they will not exist as components of your vehicle for success. It will be difficult for the external factors to support your journey of success if your internal factors do not prompt them to work for you.

Purpose. Through the practice of *presence*, students begin to identify *purpose* for the choices they make and the actions they take. Identifying *purpose* prompts them to be *purposeful* in their thoughts, intentions, and behaviors. On a basic level, the *purpose* of a human being is to convey to a particular audience a message that contributes to the greater good of the world (Warren, 2012). In the context of doctoral education, the *purpose* of a doctoral student is to disseminate scholarly contributions that expand knowledge in the academic domain (Bryant, 2004; Katz, 1997; Walker et al., 2008). The audiences to whom students convey their creations of knowledge typically include the professional communities within the students' respective academic domains. When students work from a mindset that their efforts and outcomes matter, everything is done with meaning and *purposeful* intent. They understand the *purpose* for the literature they read, the assignments they complete, and the discussions in which they engage. In working toward the common *purpose* of advancing knowledge, students position themselves to positively impact not only the broad system of academia, but also the boundless context of our world.

Presence puts students in a position to identify a common *purpose* and allows them to see where and how they might be able to contribute. Knowing that they are here to make an important difference triggers them to work from the heart, rather than to work solely from the mind, body, or emotion. Utilizing their mental, physical, and emotional tools allow them to identify, and act with, *purpose*; however, when they use such tools without the influence of the *presence* in their hearts, their impact is weakened. They could potentially even cause detriment

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or harm because the source of the intent resides on the superficial self instead of within the purity of the soul.

Passion. Through the practice of *presence* and a deeper understanding of *purpose*, students become aware of *passion*. *Purpose* ignites *passion*. Vallerand et al. (2003) defined passion as "a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy" (p. 756). When students sense a *purpose* for their gifts, skills, or interests, mere interests transform into *harmonious passions*, serving as fuel for the level of motivation that is required for doctoral education success (Flowers and Lazaros, 2009). The quality of processes and outcomes during the doctoral experience can be enhanced through a greater understanding of one's innermost *passions* and how such *passions* can be embedded along the doctoral journey. Being *passionate* about the steps taken throughout the doctoral journey optimizes the value of the information that students receive and the experiences in which they engage. Aligning the doctoral journey with one's inner assets, such as innermost *passions*, strengths, and talents, and continuing to develop those assets along the way, helps students find their academic places that serve the best interests of the academy and themselves. Whether readily apparent or consciously or subconsciously masked, the valuable resource of inherent *passion* is rooted deep beneath the surface of each student.

The role of *passion* can be particularly important at the dissertation proposal stage of the journey as the primary purpose of this stage is to develop a researchable problem through a personal interest (Krathwohl & Smith, 2005). Pursuing a research problem that aligns with high-level interests, or *passions*, could heighten the levels of focus and motivation directed toward the steps required for dissertation completion. If students know what they love and what they excel at, and have a set of values that guide their decisions, they can make choices that align with their

passions and strengths and optimize impact on the development of their personal selves and the academic community. For students to retain and nurture *passions* during their doctoral journey, the factors of *persistence* and *patience* are imperative, though they are often quite difficult to acquire and nurture (Bogue & Hall, 2003).

Persistence. When students practice *persistence*, they act promptly when the timing is appropriate for action, knowing that obstructions along the way are not intended to impede progress, but rather exist as opportunities to build strength, learn valuable lessons, and gain meaningful insights. Several authors have identified *persistence* as a critical factor of doctoral education success (Dorn, Papalewis, & Brown, 1995; Peters, 1997; Roberts, 2010). *Persistent* students are cognizant of opportunities, acting on them when given the chance. In addition to enabling students to act on opportunities, *persistence* can help students move through a broad array of hardships with confidence, dignity, and tact. Such challenges could include vast amounts of homework, high performance expectations, uncertainty of process, and the juggling of efforts to balance the domains of doctoral education, work, leisure, and home. *Persistence* will help students effectively face these challenges, or growth opportunities, so they can do what they love within and beyond the academic domain. Simply put, working hard is a key contributor to doctoral success (Gardner, 2009).

Patience. *Patience* works collaboratively with *persistence* to ensure that students move through the doctoral journey at the appropriate pace and the proper time. One without the other yields less than optimal outcomes. When students are eager to *persist*, but the circumstances are not optimal for them to move (e.g. an eagerness to act on an assignment without an understanding of instructor expectations), *patience* helps them wait for the right moment. *Persistence* without patience can cause students to move too fast, work without strategy,

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overlook the value of each step in the process, or make decisions that are not properly driven. Conversely, *patience* without *persistence* can cause students to miss opportunities that require them to act promptly.

Patience is peacefully waiting until the timing is right. It is having a realistic expectation of an outcome that is accompanied by a peaceful knowing that the present time is not the appropriate time for the expectation to be realized. *Patience* enhances student capacities to remain content through accepting the realities of current circumstances and appreciating the order of logistical processes, whether they are overwhelmed by coursework, pressured by academic or other expectations, or being impacted by anything else that can have a tendency to formulate a desire for them to be somewhere other than where they are at any given moment. Symbolized by that which Minor, Onwuegbuzie, Witcher, and James (2002) identified as a well-tempered disposition, *patience* enables students to calmly reside in the moment and accept that which they cannot control. It is especially important during the dissertation stage of doctoral study, as the process of selecting a dissertation topic could take a year or more (Lei, 2009). *Patience* does not denote a lack of motivation; rather, it represents a motivation to remain at peace in the midst of any situation. When students are at peace, their hearts are attentive and their consciousness is keen, enabling them to walk a doctoral journey that optimizes personal development and knowledge creation.

External Factors of Success

The external factors of success include *people, place, prosperity,* and *possibility.* The external factors represent the front wheel of the bicycle because much the same as the mobilized rear wheel of an actual bicycle essentially causes the front wheel to move in a manner that supports progress toward intended destinations, the mobilized metaphorical rear wheel of

internal factors essentially causes the front wheel of external factors to move in a manner that supports progress toward intended outcomes of doctoral success. For example, the internal factor of *purpose* prompts a sense of meaning for the external factors of *people, place, prosperity*, and *possibility* along one's journey. Understanding the *purpose* of external factors inspires proper attention to and interaction with each respective factor along one's journey of success.

People. People represent the network of family, friends, and professionals that offer a wide array of support and sacrifice to make the doctoral pursuit possible (Lenz, 1997). Family members might assume additional everyday responsibilities to free up time for the student to focus on coursework and research. An outing with friends could relieve the mind of pent-up stresses that could otherwise heed progress along the doctoral journey. A network of academic professionals, including other students and faculty, could build capacity that is necessary for engagement in scholarly activities and completion of a doctoral degree (Dorn et al., 1995). Membership in professional organizations promotes personal and professional growth through opportunities that lead to conference presentations, networking, skill building, professional development, and improved discipline specific initiatives and programs (Mata, Latham, & Ransome, 2010). Engagement in the professional community is also possible through reflective dialogue during interactions with reflective teams, network groups, action learning, or scenarios (Dohn, 2011).

Weidman and Stein (2003) noted a correlation between student scholarly encouragement and student perceptions of being in a supportive faculty environment. The literature speaks loudly toward the importance of working with the right advisor (Bryant, 2004; Cuetara & LeCapitaine, 1991; Di Pierro, 2011; Flowers & Lazaros, 2009; Knox et al., 2011; Lei, 2009; Ostriker et al., 2011; Peters, 1997; Single, 2010). The right advisor could provide effective

guidance for navigating doctoral processes and empower the discovery and implementation of *passion* in relevant academic manner. Accessibility, patience, and knowledge about university processes have been noted as important advisor traits (Lenz, 1997).

Collaborating with *people* who balance one's weaknesses helps ensure that one remains on track toward outcome attainment (Duffy, Torrey, Bott, Allan, & Schlosser, 2012). A state of *presence* ensures that doctoral students are cognizant of how to combine their individual capacities with the capacities of *people* they encounter throughout their journey in a manner that optimizes the potential for knowledge creation. They are attentive to the unique sets of talents, personalities, other characteristics, and resources that *people* along their path could offer as direct contributions toward the creation of knowledge, but also to the overall milieu of the degree pursuit. They are attentive to, and value contributions from, the diverse perspectives and skills of faculty, students, colleagues, family, friends, and acquaintances who are intentionally or unintentionally involved throughout the journey.

Place. *Place* represents the locale context of the doctoral journey. Being in the right program at the right university is indicative of being in the right academic *place*. According to Weidman and Stein (2003), being in a department marked by student scholarly encouragement has been linked to the level at which students participate in scholarly activities. For programs requiring residency, being in the right town is critical. In some instances, however, distance programs have made it possible to be in the right program while living in a different physical location. If participating from a distance, *place* at the distant location remains important to ensure that appropriate technology is available for the facilitation of remote participation. Being at the right *place* could further include working at a place of employment supportive of continued education and having a *place* at home or elsewhere that is conducive for studying.

Prosperity. Prosperity represents the resources available to put toward the pursuit of doctoral education. Prosperity is important because the various costs associated with doctoral education need to be covered by one or more sources of revenue. Inadequate financial means could lead to program attrition (Lenz, 1997). Adequate finances are required to support tuition, fees, books, travel to scholarly conferences, other academic expenses, and living expenses. Financial support could exist through a multitude of means, including grants, scholarships, fellowships, employer contributions, family contributions, and personal income (NSF, 2012a; Ostriker et al., 2011).

The amount of funding that institutions make available to students could play a significant role in doctoral education success (Gardner, 2009). The most critical funding sources include research assistantships, fellowships, and grants (NSF, 2012a). Growing availability of such financial support has enabled more doctoral students to graduate with reduced, or no, degree-related debt. According to Nettles and Millett (2006), two-thirds of doctoral students have been offered financial assistance upon entry to their doctoral programs.

Possibility. *Possibility* could be discussed in terms of the opportunities that are critical for doctoral student success (Flowers & Lazaros, 2009). The existence of opportunity is often widespread; however, the awareness of opportunity can sometimes be challenging. When positioned in a state of *presence*, opportunities are made manifest through the *people*, *places*, and *prosperities* that comprise the context of the student's journey. Some *possibilities* exist through the natural advantages available to students on account of their race, gender, birthplace, heritage, or other variables in which they have no control. *Presence* allows *possibilities* to emerge through the *people* that students meet, the *places* they go, and the *prosperity* available to them. An example of how *people, place,* and *prosperity* might interact to create opportunity for doctoral

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education success could be depicted through a chance conversation with an acquaintance about career exploration that prompts relocation to a new place of employment, which is accompanied by an increased salary and ample time and encouragement for continued education. A keen attention to one's environment, along with a malleable set of expectations, enables students to position themselves as effective goal pursuers with capacities to identify and operationalize *possibilities* along the path of success.

Operational Factors of Success

The operational factors of success include *practice, play, process,* and *pause.* These factors represent the pedals, chain, and brake of a bicycle, pointing toward specific actions that move the student along the path of success. Various activities of *practice* and *play* operationalize the *process* of progressing through the doctoral journey. The factor of *pause* ensures that important moments of rest are properly embedded into the *process*.

Practice. *Practice* is depicted as one pedal in the figure, representing the efforts of action directly related to doctoral content and processes. Research suggests that several years of deliberate *practice*, approximately ten years, is critical for the achievement of high level outcomes (Ericsson & Charness, 1994). *Practice* means actively engaging activities directly related to scholarship during and following the Ph.D. Such activities include participating in class, completing assignments, reading academic literature, attending conferences and workshops, scholarly networking, and academic reflection. Enhanced exposure to research (i.e. practicing research during the doctoral process) could positively impact the pursuit of the degree and minimize time to degree completion (Cuetara & LeCapitaine, 1991). *Practice* continues post-degree through ongoing activities that promote professional development, lifelong learning, and further knowledge creation.

Play. *Play* is depicted as the other pedal in the bicycle figure, representing the efforts of action indirectly related to doctoral content and processes. *Play* means actively engaging in recreational or leisurely activities seemingly unrelated to outcomes of doctoral education success. Engaging in leisure activities could lead to enhanced well-being (Stenseng, 2008), which could build one's capacity to endure the duration of the doctoral pursuit. Neglecting the action of *play*, and focusing the entirety of one's efforts in domains specific to doctoral education, could lead to negative outcomes, including interpersonal and intrapersonal conflict and burnout. *Play* activities could include non-academic social outings, downtime with family and friends, relaxation at home, or distant vacations. Distinguishing between *practice* and *play* could be a challenge, at times, especially when activities of *practice* are structured in a manner that feels like *play*.

Process. *Process* is depicted by the chain connecting the pedals to the wheel of internal factors. As the pedals of *practice* and *play* are activated, they mobilize the chain of *process* to synchronize the movement of internal and external factors. Schroeder (2013) discussed the importance of focusing efforts on *process*, paralleling Langer's (1989) notion of a *process* orientation, which suggests that outcomes such as new knowledge cannot be produced in the absence of a preceding *process*, such as research, evaluation, or assessment. A *process* orientation represents a keen awareness of, or *presence* toward, each step along the journey to create new knowledge. Having a vision for the outcome of knowledge creation is important, as evidenced by Covey's (2004) guidance to "begin with the end in mind" (p. 96); however, a vision for an outcome without a *presence* to the *process* could result in mindless, arbitrary actions that impede progress or steer the student away from the intended outcome. Alternatively, a vision for an outcome, coupled with a *presence* to the *process* will provide students with a solid

understanding of what they want to achieve (e.g. knowledge creation), ensuring that each step at any given moment is always taken in the right direction.

Pause. *Pause* is depicted as a brake on the bicycle, representing moments of rest along the doctoral journey. Periodic *pauses* will help ensure that the efforts of *practice* and *play* are applied in a manner that optimizes their impact on doctoral education success. Taking moments of *pause* helps students rejuvenate their minds and bodies so they have levels of focus and energies necessary for the achievement of success outcomes. In the midst of the quest for knowledge creation, acting upon, and even recognizing the need for moments of *pause* can be overridden by the internal or external voices telling students to keep moving forward. What seems to sometimes dissipate from the minds of students during the heart of their studies is the understanding that moments of rest, when taken at the right time, can boost the pace of progress through enhanced focus and efficient efforts (Baxter & Kroll-Smith, 2005). Moments of *pause* are the spaces in time where the fruits of one's actions are given opportunity to grow. Much the same as muscle fibers rebuild themselves as stronger muscles during times of rest following intense physical exercise, scholarly capacity is strengthened following rigorous academic exercises. Although *pause* is important, extensive periods of academic *pause* can weaken one's scholarly capacity, much the same as lengthened periods of physical *pause* can weakens one's muscular strength. A state of *presence* helps ensure that *pauses* are taken at the right moment for the right amount of time.

Conclusion and Discussion

The *P Model of Success* presents a new lens through which success in doctoral education could be interpreted. The model includes factors and outcomes rooted by a definition of doctoral education success, which was proposed as a sustainable, satisfying process of generating

outcomes that support the evolution of academia. This framework could serve as a tool for advisors to use when helping students make intentional decisions to optimize success or as a partial framework for administrators to reference when establishing and/or reviewing admission standards for doctoral programs. Reflection questions specific to each factor could operationalize this model as a reflective tool for prospective students to consult when considering application to doctoral programs or for existing students to assess the extent to which the factors of success currently support their desired professional and personal outcomes.

Reflection questions for the factor of *presence* could include the following: Why is the factor of *presence* important for the doctoral journey? How do you allow yourself maintain a state of *presence* along the doctoral journey? Why is it important to maintain a state of *presence* as you move through the doctoral journey?

Reflection questions for the factor of *proficiency* could include the following: Why is the factor of *proficiency* important for the doctoral journey? Which of your qualifications, including your knowledge, skills, and abilities, represent your level of *proficiency* to pursue a doctoral degree? In which ways do you need to further develop your level of *proficiency*?

Reflection questions for the factor of *perspective* could include the following: Why is the factor of *perspective* important for the doctoral journey? In what ways are you able to view the circumstances in your life from multiple *perspectives*? How do you feel when someone else's *perspective* is different than your *perspective*?

Reflection questions for the factor of *pertinence* could include the following: Why is the factor of *pertinence* important for the doctoral journey? In what ways are your personal goals *pertinent* to your professional goals? How is doctoral education *pertinent* your personal and professional goals?

Reflection questions for the factor of *purpose* could include the following: Why is the factor of *purpose* important for the doctoral journey? How would you describe the *purpose*, or sense of *purpose*, for your doctoral journey? In what ways are you *purposeful* about your actions and decisions along the doctoral journey?

Reflection questions for the factor of *passion* could include the following: Why is the factor of *passion* important for the doctoral journey? What are your *passions*? How does the doctoral journey support your *passions*?

Reflection questions for the factor of *persistence* could include the following: Why is the factor *persistence* important for the doctoral journey? In what ways are you *persistent* along the doctoral journey? How do you know when the time is right to be *persistent* along your doctoral journey?

Reflection questions for the factor of *patience* could include the following: Why is the factor of *patience* important for the doctoral journey? In what ways are you *patient* along the doctoral journey? How do you know when the time is right to be *patient* along your doctoral journey?

Reflection questions for the factor of *people* could include the following: Why is the factor of *people* important for the doctoral journey? In what ways do the *people* in your life support your doctoral journey? What other *people* could provide support, and how could you include them in your journey?

Reflection questions for the factor of *place* could include the following: Why is the factor of *place* important for the doctoral journey? What does the right doctoral *place* (e.g. university, program, study quarters, etc.) look like for you? In what ways are you, or could you be, situated in the *place* that is right for your doctoral journey?

Reflection questions for the factor of *prosperity* could include the following: Why is the factor of *prosperity* important for the doctoral journey? In what ways do you have adequate levels of *prosperity* to support your doctoral journey? What other resources exist that could contribute to the levels of *prosperity* necessary for your doctoral journey?

Reflection questions for the factor of *possibility* could include the following: Why is the factor of *possibility* important for the doctoral journey? What types of *possibilities*, or opportunities, have led you to your current point in the doctoral journey? How will you position yourself so that you will be aware of future *possibilities*?

Reflection questions for the factor of *practice* could include the following: Why is the factor of *practice* important for the doctoral journey? In what ways do you engage in activities representing efforts of *practice*? How do you know when the time is right for you to engage in activities of *practice*?

Reflection questions for the factor of *play* could include the following: Why is the factor of *play* important for the doctoral journey? In what ways do you engage in activities representing efforts of *play*? How do you know when the time is right for you engage in activities of *play*?

Reflection questions for the factor of *process* could include the following: Why is the factor of *process* important for the doctoral journey? In what ways are you attentive to each step of the *process* along your doctoral journey? How are your current steps in the *process* having an impact on your doctoral journey?

Reflection questions for the factor of *pause* could include the following: Why is the factor of *pause* important for the doctoral journey? In what ways do you dedicate time for moments of *pause*? How do you know when the time is right for moments of *pause*?

Limitations

It is anticipated that the meaning of the *P Model of Doctoral Success* will speak to some people, but not to others. For some, the semantics of metaphor and alliteration will trigger sustainable resonance with the message presented through the model. For others, however, the meaning of the message might be masked by the same semantics.

Each factor and outcome presented in the *P Model of Doctoral Success* could be discussed in greater depth than the extent to which each was explained in this manuscript. The intent to concisely portray a new lens through which to view doctoral education success established limits to the amount of content that could be covered for each variable. Therefore, although the importance of each variable was introduced, the deeper meanings of each outcome and factor could not be fully absorbed through the surface-level discussions herein.

Recommendations

The *P Model of Doctoral Success* frames an interpretation of doctoral education success; however, its current state of development begs for deeper discussion relevant to each individual factor and the interplay among factors. Further, the model does not offer insight toward the level at which any single factor, or combination of factors, impact(s) measurable outcomes of doctoral education success. The quantitative degree to which internal, external, or basic factors impact outcomes of doctoral success, as defined by the literature, is sparsely known. Having a better understanding of the extent to which individual factors, or combinations of factors, impact measurable outcomes could help doctoral students and/or faculty gauge the level at which focus toward each factor should be emphasized.

CHAPTER 3. FROM NOWHERE TO SOMEWHERE: DEVELOPING A REFLECTIVE SCHOLAR THROUGH AN AUTOETHNOGRAPHIC PROCESS OF UNCERTAINTY, INQUIRY, AND NEW PERSPECTIVE

This manuscript represents an autoethnographic journey of paralyzing uncertainty, active inquiry, and new perspective. The existence of this paper symbolizes an evolutionary outcome that emerged through a seemingly arbitrary point of nowhere. The starting point was an ambiguous place, stretching far beyond my sense of contentment and understanding of ordinary learning processes.

As a graduate student in the midst of a Ph.D. pursuit, the onset of this journey began while standing in a downpour of confusion, my vision blurred by a foggy perspective. Midway through the process of completing coursework requirements, I was aware of my current position along my journey, but lacked clarity of how such a position could support subsequent steps along the path. **"**How about an independent study?" one of my doctoral committee members asked while reviewing my doctoral plan of study. Excited by the thought of engaging in a form of coursework that I had not yet endured, I confidently jumped at the opportunity. "Absolutely, an independent study would be wonderful," I replied. My committee member suggested that the study be titled, *Developing a Reflective Scholar*. Although the title seemed a bit arbitrary and I lacked a vision for where it might lead, the words immediately resonated with me, so I quickly agreed that the title would be an appropriate place to start.

The uncertainty of how to proceed was exciting at first. The thought of having flexibility and freedom to create something, a new outcome or a new process, was liberating. However, intense, unavoidable confusion and frustration soon began to induce a state of debilitation. I suddenly sensed that I had been locked into an abstract process with no means of escape; the

freedom to create had somehow transformed into the perception of a confined expectation to produce. I quickly became oppressed by my own fears, anxieties and unknownings. Frightened by the realization of an absent vision, I felt motionless. How do I create something new in the absence of a vision for that which is to be created? Am I simply a pseudo-scholar, merely existing in the realm of academia without contributing to, or generating anything new for, the discipline?

Background of the Study

Knowledge Creation

Within the composition of our world exists a continuously evolving realm of knowledge, important for the development and testing of practice-based theories and for the informing of new policy design and implementation (Karpinska, Yarrow, & Cough, 2007). What is the source of such knowledge? From where and from whom does this knowledge derive? According to Walker et al. (2008), new knowledge is generated through scholarly learning that penetrates barriers of stagnation and the status quo. Individuals who engage in such scholarly learning initiatives to develop new knowledge are often referenced as scholars. Fully formed scholars should be able to create and evaluate new knowledge, safeguard critical ideas and discoveries from the past and present, understand the role of knowledge in transforming the world, and actively engage in the transformation of the world through responsible dissemination of knowledge. Dissemination of knowledge can be facilitated through a variety of means, including publications, oral presentations (Ulrich, 2007), and poster presentations (Berg, 2005).

Scholarly learning, leading to the creation of new knowledge, can be operationalized by asking and acting upon the right questions; good scholars ask good research questions (Walker et al., 2008). Barney and Mackinlay (2010) argued that processes of written reflection could aid the

cultivation of such questions. This is in line with Covey's (2004) argument to have a vision of one's desired destination, goal, or outcome, which could exist in the form of a research question and/or the product of new knowledge. To "begin with the end in mind" (p. 96) will provide us with a solid understanding of where we want to go or the type of knowledge we want to create, helping to ensure that the step we take in any given moment is always a step taken in the right direction.

Doctoral Education

Knowledge creation is an intended outcome of doctoral studies (Bryant, 2004; Lovitts, 2005; Ostriker et al., 2011). Doctoral education, however, has experienced limited success in preparing all students who begin doctoral programs to be knowledge creators, as evidenced by high attrition rates ranging between 40% and 50% (De Valero, 2001; Wendler et al., 2010). To help improve completion rates, Walker et al. (2008) articulated the importance of addressing issues impacting doctoral education success through diverse lenses of perspective and knowledge, which included a call to students to play a more active role in contributing to understandings of effective doctoral programming.

<div align="center">

Purpose of the Study

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The purpose of this study was not clearly understood at the onset. Essentially, the initial purpose was to create something, a product and/or process that did not already exist. However, through a series of personal written reflections, the purpose evolved as an intent to enhance my capacity as a reflective scholar while learning about the processes and domains of developing a reflective scholar. Alternatively stated, it was an intent to enhance my capacity as a knowledge creator while learning about how a knowledge creator is developed.

Several questions emerged throughout the written reflection process, four of which guided the preparation of this manuscript and captured the evolving purpose of this study, as follows: What is a reflective scholar? What is the process for optimizing the creation of new knowledge? What are the domains that contribute to the optimization of creating new knowledge? Could written reflection serve as a means to help cultivate answers to the preceding questions?

Significance of the Study

This study is important because it contributes to an enriched understanding of the doctoral education outcome of knowledge creation. As a product of an autoethnographic process, in terms of reflective scholarship and knowledge creation, this manuscript serves as a tangible response to Walker et al.'s (2008) call for student contributions to the understanding of doctoral education success. As a product informed by written reflections, it supports Barney and Mackinlay's (2010) argument for the benefits of written reflection.

Methods

This self-study was made manifest through an *independent study* course facilitated by one of my doctoral committee members. The process and product of this study surfaced through my identity as a white male in his mid 30s pursuing a Ph.D. in education with an emphasis in institutional analysis. The data collection, initial data analyses, draft write-up of this manuscript, and final version of this manuscript took place over the course of nearly two years, beginning shortly before the spring 2012 academic term, which represented my second to last term of coursework required by my degree program, and concluding mid-way through the fall 2013 academic term.

Autoethnography

This manuscript is informed by an autoethnographic method because I, the researcher, was also the participant (Anderson, 2006). Further, the entire experience represented a keen attention to the process as well as to the product that was created through the process (Ellis, 2004). According to Ellis and Bochner (2000), autoethnography is an "autobiographical genre of writing and research that displays multiple layers of consciousness, connecting the personal to the cultural" (p. 739). In terms of autobiographical writing that connects the personal to the cultural, this narrative represents my account of personal academic journey that led to a deeper understanding of how I might fit into the culture of the broader Academy as a reflective scholar. Multiple layers of consciousness were demonstrated through several reflections of the process, as well as reflections upon reflections of the process (Schön, 1987).

It is worth noting that, although this manuscript draws from autoethnographic premises, I did not know anything about autoethnography as a method during the data collection period and initial draft write-up of this manuscript. Several months passed following completion of the independent study requirements before I became aware of the autoethnographic method. As my knowledge of autoethnography continued to develop, my understanding of the method began to parallel both the independent study process that I underwent and the general essence of the draft narrative that was produced through the process. As such, I made a decision to transform the originally produced narrative into a manuscript framed by autoethnography. The original draft, which was written to meet the requirements of my independent study, was prepared in a manner that aligned with a qualitative research format more similar to that which I studied in my qualitative research class. The transformed version is this version, representing the current step in an autoethnographic process that I began before I even knew that autoethnography existed.

To some readers, this manuscript might represent a flow that could seem a bit academically awkward; however, autoethnographies have been allotted literary freedoms that other scholarly methods typically do not allow, permitting deviation from conventional research narrative structures. For example, as a method applied to facilitate processes of mindful learning (Boyd, 2008), autoethnography represents a highly personalized writing style (Wall, 2006), an ambiguous category of research that exists in a broad array of forms, including novels, essays, journals, poems, and social science manuscripts (Ellingson & Ellis, 2008).

Data Collection

Qualitative data for this study were collected in the form of personal written reflections. When data collection began, I did not realize that I was collecting data. I had simply decided to write reflections with a mere hope that a research direction or questions would surface through the process (Barney & Mackinlay, 2010). Not until a couple months following my first written reflection did I begin to realize that my accumulated reflective writings could possibly serve as data for qualitative analyses. The reflections were written directly into a Google Docs word processing document. Using Google Docs enabled me to write reflections from any location where a computer and Internet connection were available. Bookmarks and links were embedded into the document to simplify navigation through content as the document grew in size. I did not set any guidelines for the frequency, length, or content of the reflections. My intention was to write reflections whenever and wherever I felt inspired to write. I periodically reviewed relevant literature throughout the course of the study, which occasionally served as a source of reflective inspiration.

The reflections were written over the course of approximately four months. During this time period, thirty-one reflections were written into the Google Doc document, twenty-eight of

which were written within the first three months. More than one month passed before the final three reflections were written. The reflections varied substantially in length. According to Microsoft Word, the total word count of the reflections was around 20,000 words. The longest reflection was approximately 2,000 words. The shortest reflection was approximately 50 words. The creation of a few figures accompanied the reflective process, serving as alternate or supplemental means to articulate relevant thoughts or ideas during reflections.

The month long lapse between the twenty-eighth and twenty-ninth reflections stemmed through statements in the twenty-seventh reflection that pointed toward a need to read more scholarly literature (e.g. "Moving through this process seems as if it might be scholarly, but I am still missing the literature piece…I've spent several hours writing and reflecting. Why am I not reading? I need a balance amongst reading, writing, and reflecting, right?"). I wrote one more brief reflection before taking a writing hiatus. In response to the sense of a need for a more optimal balance of reading and writing, I made a decision to immerse myself in literature during moments that would I would have otherwise spent writing reflections. Following the approximate month of increased reading and no writing, I wrote my $29^{th} - 31^{st}$ reflections on three consecutive days, which collectively articulated a desire to create closure to the project through a synthesis of the literature I had read and the reflections I had written.

Data Analysis

Because I served as the researcher of data that I created (Anderson, 2006), the product and process, including data analyses, were informed by an autoethnographic method (Ellis, 2004). Although autoethnography represented the primary method for this study, the data analyses also borrowed techniques from a grounded theory approach, including processes of open coding to organize pieces of data from the written reflections, axial coding to identify

categories and subcategories, and selective coding to write themes and sub-themes (Creswell, 1998). The analysis was theoretically based, but not overly structured. Too much structure could have negatively impacted the process and the outcome, as suggested by Strauss and Corbin (1998), "analysts who rigidify the analytic process are like artists who try too hard" (p. 129)

General themes that were identified through data analysis included *reflective scholar definitions*, *mindfulness*, *cycle of knowledge creation*, and *domains of knowledge creation*. Within the *cycle of knowledge creation* theme existed sub-themes of *uncertainty, disciplined inquiry,* and *new perspective*. Within the *domains of knowledge creation* theme existed sub-themes of *interest, career,* and *literature*. The analyses included personal reflections representing my interpretations of the themes, as well as citations of relevant literature. Coupling my interpretations of my own understandings with literature allowed me to begin to trace the origins of my knowledge and perspectives.

Reflective Scholar Definitions

I often wrestled with the notion of what it means to be a *reflective scholar*. Although a concise definition was not specified in the written reflections, I periodically jotted down thoughts that could potentially help clarify the picture of what I might consider as a definition of *reflective scholar*. Some of the written thoughts I had about what it means to be a reflective scholar included the following: a reflective scholar will embrace confusion, welcome uncertainty with eagerness, and perceive an identified unknowing as a pathway to discovery; a reflective scholar is a scholar who operationalizes the intangible equivalent of high power telescope as a means to explore the seemingly unreachable and unimaginable constructs of the infinite universe within; a reflective scholar assesses the position of a topic according to its degree of alignment with three domains, which include the scholar's interests, the scholar's career, and existing scholarly

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literature; and reflective scholarship nurtures and supports practical research, serving as rich soil out of which practical research grows.

Merriam-Webster's Online Learner's Dictionary defined *reflective* as "thinking carefully about something" (reflective, 2012)." The same dictionary defined *scholar* as "an intelligent and well educated person who knows a particular subject very well" (scholar, 2012). Merging these definitions could yield a definition for *reflective scholar* as follows: an intelligent and well-educated person who thinks carefully about a particular subject and knows the subject very well.

In terms of connecting my interpretations of reflective scholar definitions to literature, Freire (2007) suggested that a word is comprised of two dimensions. The two dimensions are reflection and action, and one without the other could result in adverse consequences. For example, reflection without action yields empty words, or "idle chatter" (p. 87). Schön (1987) indicated that reflection does not need to occur through words; however, it typically does include an element of consciousness. Reflective aptitude could lead to the development of artistry within one's given profession. Artistic capacity could be represented by higher levels of wisdom, talent, and intuition, all of which were noted as facets that separate outstanding performers from other performers with high levels of professional knowledge. Many types and levels of reflection, including reflecting in action, are critical throughout the process of attaining artistry. "...it is one thing to be able to reflect-in-action and quite another to be able to reflect on our reflection-in-action...and it is still another thing to be able to reflect on the resulting description" (p. 31). Knowing when to reflect, when to act, and when to reflect-in-action ensures that the right movements and right pauses are taken at the right time. According to Rohr (1995), action sometimes guides us toward our best contemplation, or reflection; however, if we reflect or contemplate too long, we might neglect a required action.

According to my interpretations of what it means to be a reflective scholar and the literature pointing toward understandings of reflective scholarship, the essence of a plausible definition would likely encapsulate a keen awareness of oneself, attention to uncertainty, scholarly research, discovery of new perspective, and effective merging of various life domains.

Mindfulness

The concept of mindfulness emerged frequently throughout the written reflection process. During one reflection, I referred to mindfulness as a conscious awareness of the moment, accompanied by an instant capacity to see beyond the clouds of distraction that block truth and opportunity. The culmination of reflections pertaining to mindfulness pointed toward the belief that a mindful state of existence could enable a scholar to sustainably navigate the cycle of knowledge creation and effectively integrate the domains of knowledge creation. I indicated that mindfulness could optimize the impact of any given process or outcome. Periodically, I reflected on mindlessness, which was essentially described as the opposite of mindfulness. Although I strongly support the practice of mindfulness in many contexts, I also seemed to have an appreciation for applying mindless behaviors and actions in certain situations.

Literature points toward several benefits of mindfulness, including enhanced well-being and mental health (Baer, Smith, & Allen, 2004). The construct of mindfulness can be difficult to interpret, although it has been defined as "the process of drawing novel distinctions" (Langer & Moldoveanu, 2000, p. 1). Such a process requires the involvement of a person's entire being, which enhances sensitivity to one's surroundings, awareness of diverse perspectives, and receptivity to new information. Langer (1989) noted three "qualities of a mindful state of being: creation of new categories; openness to new information; and awareness of more than one perspective" (p. 62).

The Toronto Mindfulness Scale measures mindfulness as a "curious, decentered state of awareness of one's experience that is operationally and conceptually distinct from anxiously preoccupied and ruminative state of self-focused attention" (Lau et al., 2006, p. 1463). Findings from a validation study on the Freiburg Mindfulness Inventory suggested that enhanced mindfulness is related to decreased psychological distress (Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006).

The essence of mindfulness can potentially be captured in what others have referred to as presence. Rohr (2009) stated, "If you are present, you will eventually and always experience the Presence. It is so simple, and so hard to teach. To people who have never experienced it, it can even sound like a cheap affirmation" (p. 59). Presence is reflected by wisdom. Those who are fully present are able to see the whole picture through a truthful perspective. In the context of education, Farber (2008) noted, "Without (full) presence, teachers are like guides in a theme park who tell the same joke a dozen times a day. With presence, teaching lives" (p. 215). A present educator is authentically there with the students, drawing in their full presence to manifest a wholly engaged environment.

Several religious and spiritual practices point toward the importance of remaining open to, and aware of, the moment. Taoism suggests, "The way (Tao) is empty, yet use will not drain it" (Lao Tzu, trans. 1963, chap. 4). Keeping the mind empty of distractions will allow it to be filled with eternal awareness of truth and purpose. Mindfulness encapsulates a level of awareness comparable to that which can be realized through Zen Buddhist practices. As Bolelli (2011) stated, "Zen training is all about quieting the mind, being in the moment with no thoughts of the past or the future, accepting things as they are, mastering one's emotions, and abandoning all attachments" (p. 3).

Brother Lawrence (1983), a lay-brother of the Carmelite Order monastery in the 1600s, spoke extensively about his practice of living constantly in the presence of God. He believed that continuous living in God's presence would enable him to avoid "impetuous actions" (p. 61) and to do everything he did with great attention and care. Everything he did was done with, and for, a purpose. Covey (2004) suggested that we, as humans, are separate from our thoughts, moods, or feelings. We are not defined by our bodies or minds; they are simply tools that we utilize to share our gifts with others.

Newman (2006) proposed three types of consciousness (meditative, contemplative, and critical) that collectively seem to point toward the essence of mindfulness. Meditative consciousness is the calming or stilling of your mind, emphasizing focus on your inner self. Contemplative consciousness is a practice that extends focus toward the keen reception of, and reflection upon, influences outside of your self. Rohr (2009) referred to contemplation as "an exercise in keeping your heart and mind spaces open long enough for the mind to see other hidden material" (pp. 33-34). Critical consciousness is the detaching of yourself from ideologies, beliefs, and values as a means to position yourself for transformative learning and gain a better understanding of your authentic existence (Newman, 2006).

Cycle of Knowledge Creation

The written reflections produced through this independent study eventually led to a conceptualized cycle of knowledge creation, which included three distinct phases that continually expand the general body of knowledge. The phases included *uncertainty, disciplined inquiry,* and *new knowledge/perspective*. Upon identification of uncertainty, a mindful, reflective scholar engages in disciplined inquiry in hopes of bringing light to the darkness of confusion. The practice of disciplined inquiry prompts the creation of new knowledge and perspective,

which cultivate subsequent uncertainties to sustain the cultivation of the ever-growing cycle. A visual depiction of the cycle, which was created during one of the written reflections, is presented in Figure 3.1. Thoughts about the consequences of mindless, non-reflective scholarship also began to surface through the written reflections. For example, rather than working through a cycle that creates knowledge, I believed that a non-reflective, mindless scholar would instead navigate a confined cycle of knowledge stagnation. Such a cycle, which was also depicted visually during one of the written reflections, would include the tenets of certainty, automation, and continuance of narrow knowledge/perspective (see Figure 3.2).

Uncertainty. Uncertainty seemed to be among the most common sub-themes that emerged through analysis of the written reflections. Throughout the study, but particularly during the earlier written reflections, I felt like I could write forever and not get anywhere. I was often confused about the purpose of the reflections, the purpose of the independent study, the persistent absence of a vision, and the potential outcome of the study. I was oppressed by my own fears, anxieties, and unknowings, but I did not know what I was afraid of or anxious about or why the idea of not knowing something could paralyze my ability to make progress. I often experienced feelings of frustration and incompetence across the timespan in which the reflections were written; however, my ability to accept and cope with such feelings seemed to improve as I neared the writings of the final reflections.

In terms of connecting my interpretations of uncertainty to literature, Rohr (2011) explained that we are designed to see the whole picture, not just the individual parts; however, we often do not see the bigger picture until we immerse ourselves into the messy parts. Langer (1989) suggested that intuition, or "an attunement to information not perceived by most conscious minds" (p. 119), can position a person to welcome new information into
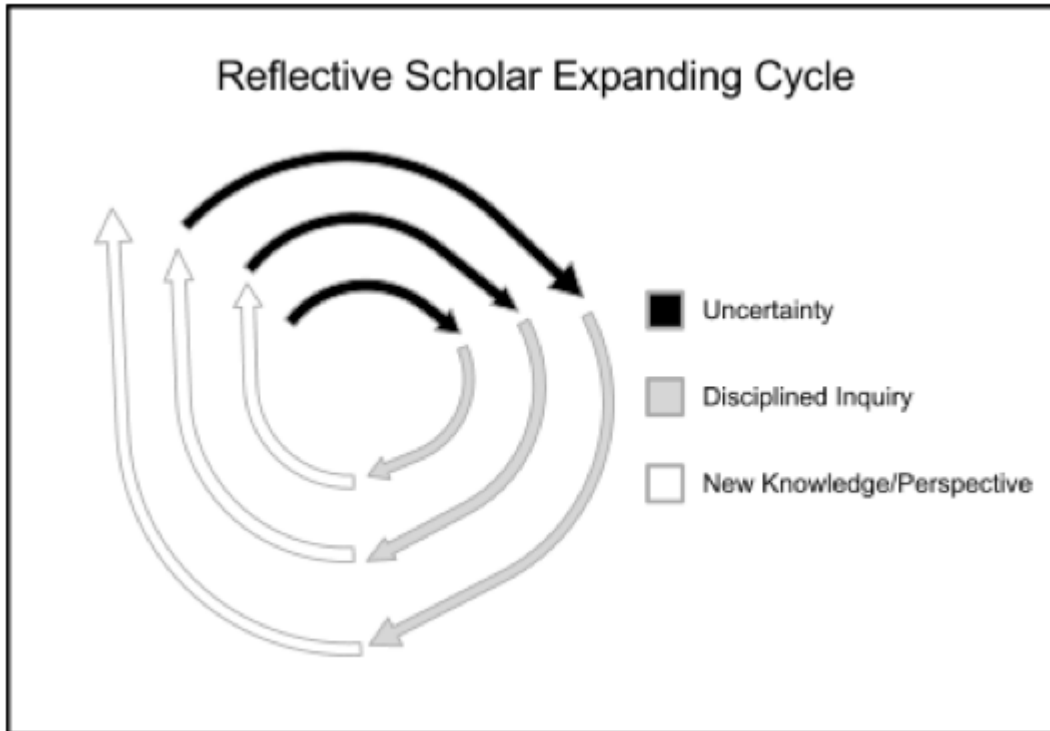
Figure 3.1. A mindful, reflective scholar's expanding cycle of knowledge creation.
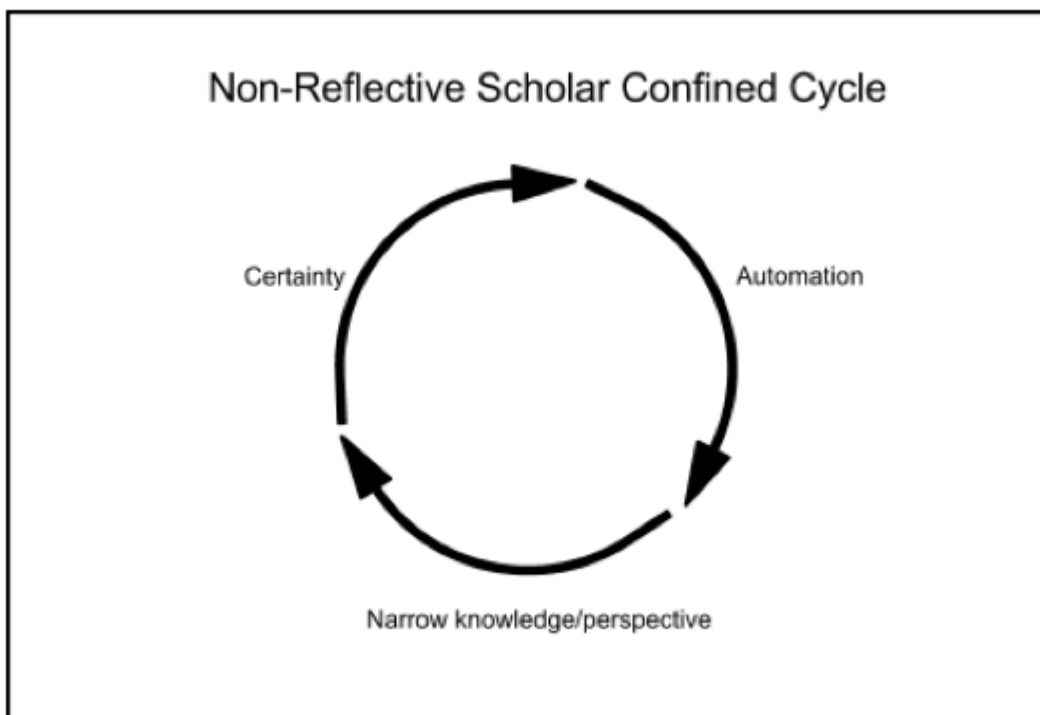
Figure 3.2. A mindless, non-reflective scholar's confined cycle of knowledge stagnation.

consciousness, even if the new information is messy or makes little or no sense. Although new information does not always make sense, resisting or attempting to rationalize such information could block an important message from being known (Langer, 1989).

In a hypothetical scenario pertaining to the context of architectural design students, Schön (1987) indicated that confident, evaluative students have a capacity to identify and position themselves at a starting point, even if the starting point is arbitrarily selected. Such is the case because they are confident in their ability to gain an understanding of, and evaluate, their position. They believe that they can reposition themselves if they determine that they could be in a better place. This, too, is important in the context of scholarship. When faced with a question or a problem, reflective scholars search for the perfect research design to answer the questions or solve the problems. However, they understand that the perfect designs rarely, if ever, exist. Therefore, they identify and evaluate a sample of potential designs and select the solution that is the best fit for a given question or problem. They are confident in their ability to reflect-in-action to determine if they should continue with their initial design, reposition their approach, or start fresh.

The feelings of stagnation and uncertainty were debilitating at times, but a flicker of faith fueled my motivation to continue writing even though the starting point, the process, and the content being produced did not make sense to me. The faith existed in the form of an uneasily articulated feeling as if I had a contribution to make to something. I did not know what the contribution might be or whether it would even be made through the process or outcome of the written reflections. I merely sensed that the written reflections were points along a path that would eventually lead me to a place or process in which I could make a contribution of some sort. As I write this, I am still uncertain about what the contribution might be; however, much the

same as the feeling of faith I experienced during the process of writing reflections for this study, the writing of this manuscript feels like the right step to take at the current point along my path to being a contributor.

Disciplined inquiry. Disciplined inquiry was identified as the phase of knowledge creation that follows uncertainty. Disciplined inquiry represents the general process of creating new knowledge and insights through various methods, including research, evaluation, and assessment. I engaged in disciplined inquiry, to an extent, through the process of writing and analyzing my reflections, intentionally writing until new questions emerged to which I could seek answers.

In terms of connecting my interpretations of disciplined inquiry to literature, Shulman (1989) referred to the process as an investigative practice informed by sets of principles and rules. Schön (1987) pointed toward the importance of disciplined inquiry when stating, "that a student cannot at first understand what he needs to learn, can learn it only by education himself, and can educate himself only by beginning to do what he does not yet understand" (p. 93). Students enter stages of disciplined inquiry when taking action to learn things whose purpose and importance cannot be understood at the onset of the process.

Barney and Mackinlay (2010) indicated that reflective writing can support processes of disciplined inquiry, arguing that it has potential to "engage rather than educate, democratise rather than dictate knowledge, critically question and reflect upon rather than control and censor what we can know and actively transform instead of passively inform" (p. 164). Embedding written reflection into a process of disciplined inquiry can help create an engaged, critical, and reflective environment that empowers students to process and discuss challenging topics. Writing reflectively, however, can be difficult for many students. Without proper training, many students

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might face complications when attempting to write academic reflections. Ryan (2011) proposed the *Academic Reflective Writing Model* as a tool to optimize the quality and impact of academic reflections. Students should be taught to identify the differences between high-level reflection and low-level reflection. High-level reflection is typically characterized by an evaluative, critical context, whereas low-level reflection is typically characterized by a descriptive context.

Throughout the process of embedding written reflections into this study, I often wondered whether my written entries were quality reflections. To this day, I still question how well they were written; however, regardless of whether or not they represented a high level of reflective quality, they did lead to the formulation of many questions, including the following examples: What is reflection? What is a reflective scholar? Why is it important to be a reflective scholar? I frequently felt frustrated with such questions because they did not seem as if they could be systematically answered. It was clear to me that I had not developed the art of asking questions, which led me to a hope that the process of this study would help improve my ability to ask good questions. Although I was unable to answer my questions immediately, and at the conclusion of the data collection period I had not yet captured a full understanding of the answers, I developed a greater appreciation for the value that written reflections could bestow to the cultivation of questions, answers, and understanding.

New perspective/new knowledge. The emergence of new perspective/new knowledge was identified as the phase that follows disciplined inquiry. Writing through the confusion served as a form of inquiry that nurtured new perspectives, which perhaps could also be recognized as new knowledge in some instances. Toward the beginning of the data collection period, an onset of uncertainty was perceived as a barrier. This perception eventually transformed into an acknowledgement that uncertainties can instead serve as fuel that inspires disciplined inquiry,

yielding the creation of new knowledge and perspective. Evidence of seeing things in new ways was scattered throughout the reflections. Examples of my new perspectives included the figures conceptualized during the reflections, various "aha moments" embedded in the written reflections, a method for compiling and structuring potentially applicable content from literature and personal perspective, a vision for survey items that could potentially be part of a research project, and a beginning to what could be a syllabus for a course titled *Developing a Reflective Scholar*.

In terms of connecting my interpretations of new knowledge to literature, Lao Tzu (trans. 1963) stated, "To know yet to think that one does not know is best; not to know yet to think that one knows will lead to difficulty" (chap. 71). As such, a reflective scholar knows what he does and does not know, simultaneously confident in his knowing and unknowing. Confucius indicated that knowledge is the recognition of knowing something when you know it and the recognition of not knowing something when you do not know it, implying that a wise person is able to view a question through a multitude of perspectives in the absence of bias, while an ignorant person is biased and only sees a question through one perspective (The analects of Confucius, trans. 1989).

To create new knowledge, Langer (1989) indicated the importance of a process orientation, stating that outcomes (i.e. new knowledge) cannot be produced in the absence of a preceding process (i.e. disciplined inquiry). Schön (1987) indicated that much of our learning takes place in the background without any sort of awareness that we are learning during the process; we might become aware of what we learned only after we move on to something else. Eventually we might develop an ability to "reflect-in-action" (p. 40), which would allow prompt

recognition of our learning and cultivate an ability to test new understandings and actions on-the-fly.

Domains of Knowledge Creation

Three domains of knowledge creation emerged through the written reflections: *interest, career,* and *literature*. My reflections guided me toward a belief that the creation of knowledge could be optimized through scholarly research that existed in the space where the three domains merge. Although I consider these domains to be important, I recognize a personal deficiency in my capacity to effectively integrate the three areas. Especially during the timeframe when writing reflections, I felt a strong sense of disturbance with my emphasis on the importance of personal interest and pointed out a need to explore topics that represented a better balance of interest, career, and literature.

Merging interest, career, and literature could enable a practical scholarly research direction (Figure 3.3). A practical research topic would reflect a high degree of focus, clear sense of direction, and reasonable time to completion. An overlap of only career and interest would result in a missing frame of reference, consequently not providing enough direction for how to proceed or where to contribute. An overlap of career and literature would result in a lack of personal passion, enhancing the risk of burnout prior to project completion. An overlap of interest and literature would result in a project that required substantially more time to completion because opportunities would not exist to embed elements of the project into work-related duties and responsibilities.

In terms of connecting my interpretations of the domains of knowledge creation to literature, authors have indicated that interest, career, and literature are important variables in the process of creating knowledge. Scholars should be interested in a discipline-relevant topic (Knox

et al., 2011), as well as in the practice of research (Cuetara & LeCapitaine, 1991). Aligning

research with literature helps ensure that the methodology and design are theoretically based and

that the knowledge to be created adds value to academic conversations in need of new

scholarship (Ravitch & Riggan, 2012). Published research, including a dissertation, often follows

a scholar along his or her career path (Biklen & Casella, 2007). For employed Ph.D. students,

aligning a dissertation topic with one's current career could serve as an effective means of career

advancement in an academic or other professional arena (Single, 2010).
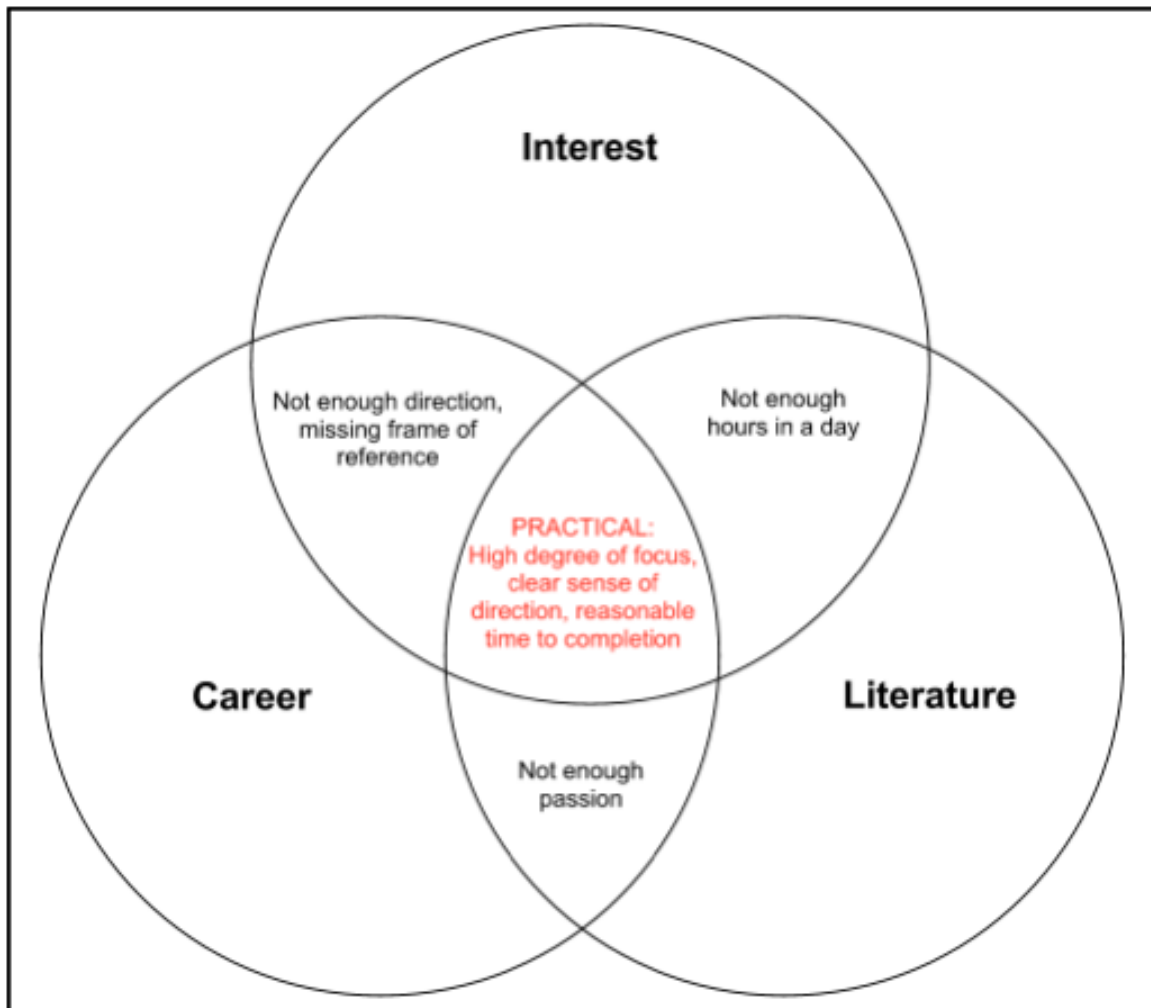
Figure 3.3. Ven diagram displaying domains that contribute to optimized knowledge creation.

Discussion and Conclusion

The autoethnographic method applied for this study led me from a point of nowhere (i.e. an ambiguous thought without a vision) to a place of somewhere (i.e. new perspective). The method permitted me an opportunity to analyze my own written reflections through a process that led to the creation of a scholarly product, as well as to a greater appreciation for the process and practice of written reflection. The writing and analyses of my reflections, coupled with a review of relevant literature, helped me begin to trace the origins of my thoughts, perceptions, and beliefs.

This study sought to define the process and domains of knowledge creation and to determine if written reflection was an effective means to help cultivate personal understandings of knowledge creation processes and domains. The knowledge creation process was identified as an expanding cycle of uncertainty, disciplined inquiry, and new knowledge/perspective. Interest, career, and literature were identified as domains important to the optimization of knowledge creation. The emergence of knowledge creation process and domains through methods that included written reflection support the notion that written reflection could be an effective means of generating new perspective.

Written reflection could help a scholar gain a better understanding of oneself. As a scholar enhances an understanding of oneself, the scholar enhances his understanding of how and where he fits into the realm of academia; how and where he can create new knowledge and offer meaningful contributions as a scholar and beyond. Written reflections, coupled by intermittent relevant thoughts and reviews of literature, have potential to clarify a vision through a downpour of confusion. Written reflections are like the windshield wipers on your car when driving through a rainstorm. Without windshield wipers you are burdened by a wall of water that

prevents you from having a vision of where you are headed, let alone allows you to see immediately ahead of you to know if you are on the right road. Using the wipers allows sight of the road immediately ahead to avoid being derailed and enables you to see road signs (visions) that articulate your destination. In the car, when the rain pours on your window, turn on your windshield wipers. In your mind, when the confusion saturates your perspective, turn on the reflections, either through writing or another reflective method that works best for you.

The uncertainty that inhibited progress at the onset of this study happens to be the same uncertainty that fuels and drives the creation of new knowledge and perspective. Although confusion continued though the conclusion of the reflections, the moments of clarity and new perspectives realized during reflective moments suggests that uncertainty should be embraced as an opportunity rather an avoided as an obstruction. Identifying and addressing uncertainty is perhaps the step that precedes Covey's (2004) first step of beginning with the end in mind. To move forward effectively in the realm of academia, as well as in the general context of life, a reflective scholar will embrace confusion, welcome uncertainty with eagerness, and perceive an identified unknowing as a pathway to discovery. He will allow an awareness of, and actively seek, opportunities to align scholarly initiatives with existing literature, his career path, and relevant personal interests. An overlap of these domains optimizes the opportunity to feasibly pursue an academic initiative with a high degree of focus, clear sense of direction, and reasonable time to completion.

Limitations and Weaknesses

As the sole individual in this study, I served dual roles as the researcher and the participant. Therefore, I encountered several biases when analyzing the qualitative data. For example, I contemplated several relevant thoughts during the times between written reflections,

thoughts that undoubtedly impacted the analysis of the written reflections. The thoughts and reminiscence of the thoughts that occupied the gaps between written reflections served as a source of subjective, intangible data that would not have been accessible to an external researcher.

The findings are the outcome of one participant. As such, the understandings of what it means to be a reflective scholar, along with the understandings of the process and domains of knowledge creation, and the effectiveness of written reflection as a contributor to the means of cultivating new knowledge and perspective, cannot be generalized to all scholars across and beyond the realm of academia. As with many research studies, both qualitative and quantitative, although the findings may not open a broad scope of generalizability, they do warrant implications for application and future research.

Implications for Application and Future Research

This autoethnographic manuscript is the product of an evolutionary process that prompted an emergence of new questions, appreciations, and insights. It is quite likely that subsequent versions of this manuscript could develop as my understanding of autoethnography continues to unfold. It could further serve as a piece of data to inform a larger scale narrative, such as an autoethnographic account of my doctoral education journey spanning my decision to apply for admission through program completion.

Other students could contribute to the discussion of reflective scholarship by replicating the topic and methods presented herein to help identify new themes and experiences and also to help determine if the themes and experiences that emerged through this study are common across a broader scope of students. This type of autoethnographic process could help students enhance understandings of their own interpretations of reflective scholarship, potentially optimizing their

capacities as knowledge creators through keener attention toward, and action upon, the processes, domains and/or other themes of knowledge creation. Reflective scholarship findings presented through similar autoethnographic processes or other types of research could help Graduate-level faculty and administrators further refine scholarly programs to ensure conduciveness for knowledge creation.

The present study suggests that the process of writing reflections, coupled with intermittent reviews of literature, lends merit to the benefits of writing reflections. As a vehicle to transport a writer from a point of nowhere to a place of somewhere, the process could help the writer conceptualize research questions and directions, cultivate new knowledge and perspective, enhance awareness of one's self, and trace origins of one's thoughts and beliefs. The practice itself induces an awareness of these benefits, nurturing greater appreciation for a process-orientation and the practice of transcribing one's reflections. Although it might not be an option that would resonate with all students, providing certain students with frameworks to pursue semester-long autoethnographic experiences in which they write and interpret their reflections according to a single writing prompt at the beginning of the term could empower them with process-oriented faith and creative confidence to produce something fulfilling from a seemingly empty starting point.

This manuscript presents my personal interpretations of the themes that emerged; however, future research with additional participants would be required to capture a clearer image of the academy's general understanding of knowledge creation and what it means to be a reflective scholar. Further research would be required to determine the extent to which written reflection would be effective for others seeking new knowledge and perspective and to determine

the extent to which other forms of reflection, such as oral reflection, could support the creation of

new knowledge and perspective.

CHAPTER 4. FOR THE LOVE OF RESEARCH: THE PASSION FACTOR OF DOCTORAL EDUCATION SUCCESS

Although doctoral education has grown in popularity throughout the past several decades, student attrition remains strikingly high, ranging between 40% and 50% (De Valero, 2001; Wendler et al., 2010). For example, in terms of research doctorates, the number of degrees awarded since 1958 has shown an average yearly increase of 3.4% (NSF, 2012a); yet, the 10-year completion rate has been reported at 57% (Council of Graduate Schools, 2008). Much the same as stakeholders of a fitness club might be dissatisfied if it the club only helped one out of every two clients achieve desired fitness goals, concern saturates a broad array of academic stakeholders when roughly only one out of every two students admitted to a doctoral program achieves the educational goal of graduation. Universities, faculties, and students expend significant amounts of money, time, and effort on doctoral education, only to find the potential impact of these resources diminished when students do not complete their programs. Further concern permeates through public universities by means of taxpayers who spend hard-earned dollars on the partial education of students who do not earn degrees (Schneider, 2010). Spending excessive amounts of such resources on students lost to attrition strips other students from opportunities to pursue doctoral degrees, inhibits the extent of knowledge that could be contributed to the academy, and tarnishes the image of doctoral education in the eyes multiple stakeholders.

Each moment of time, ounce of effort, and penny of a dollar should be spent in a manner that educates all doctoral students to be fully formed scholars with capacities to create and evaluate new knowledge, safeguard critical ideas and discoveries from the past and present, understand the role of knowledge in transforming the world, and actively engage in the

transformation of the world through responsible dissemination of knowledge (Walker et al., 2008). Doctoral programs, especially those with high rates of attrition, undoubtedly need a better understanding of the factors that support the successful formation of scholars throughout and beyond the pursuit of a doctoral degree.

Doctoral Education Success

An understanding of what it means to succeed in doctoral education is important when developing and delivering programming intended to prepare successful doctoral students (Gardner, 2009). Successful doctoral education programs develop good students to be good scholars, often through academic environments that nurture collegial relationships and promote student participation in scholarly work (Weidman & Stein, 2003). Good doctoral students are assets to universities and faculty, creating exponential impacts when establishing themselves as renowned researchers (Grover, 2004). Alternatively, poor students can be liabilities, wasting faculty time and occupying student slots that could have otherwise been occupied by good, productive students. Poor students are at greater risk for attrition, which adversely impacts themselves, their families, postsecondary institutions, and society (Lenz, 1997).

The doctoral experience varies for students within and across disciplines (Gardner, 2009). Such variances create challenges in articulating a concise definition for doctoral education success. Though difficult to concisely define, doctoral education success is often examined in terms of factors leading to outcomes that represent program completion and knowledge creation.

Outcomes of Success

Outcomes of successful doctoral education have commonly been discussed in terms of professional indicators, though personal indicators such as of individual satisfaction have been identified as notable indicators during and following pursuit of the doctoral degree (Jablonski,

2001; Neumann, 2005). For the purposes of this narrative, professional outcomes will be

discussed in more depth than personal outcomes. Professional outcomes include academic

achievement, retention, program completion (Gardner, 2009), time-to-degree (NSF, 2012a),

knowledge creation and dissemination during and following program completion, and job

placement (Grover, 2004; Ostriker et al., 2011).

Knowledge creation and dissemination, the primary outcome of focus for this study, has

been measured through the successful defense of a dissertation, which is a requirement for

program completion, as well as though the numbers of refereed and non-refereed publications

and presentations students have produced during and following pursuit of the doctoral degree.

Refereed demonstrations of knowledge creation and dissemination have typically been regarded

as higher quality products than those that have not been peer-reviewed (Skolits et al., 2011).

Measures of knowledge creation, such as authored or co-authored publications, have been

assessed through the Survey of Doctorate Recipients (SDR), a longitudinal, biennial panel survey

of research doctorate holders in the United States (NSF, 2012b; Thurgood et al., 2006).

Factors of Success

Factors of success commonly discussed include selective admission processes, student

supports, student/advisor relationship, disciplined inquiry, and student passion. Being highly

selective in the admissions process could enhance the success of doctoral programs by

generating higher completion rates (Gardner, 2009). Admission selectivity often begins with the

assessment of tangible achievements and test scores (Ostriker et al., 2011), such as GPA,

GMAT, and GRE scores (Grover, 2004). Purposeful selection processes, further focused on

assessing communication skills and personality and on matching the capacities and interests of

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competent students with relevant programs, help ensure that the right students are selected for the right programs.

Following admission to a doctoral education program, adequate levels of student supports are required to help students successfully endure the complete journey. Students frequently encounter undue fears and stresses toward doctoral studies because they do not know how to navigate graduate school processes (Peters, 1997). Student supports, including graduate school orientation resources, peer mentors, and scholarly networks could help students work through barriers to effective doctoral education that might otherwise prevent them from completing their programs, as well as stir up an array of negative emotions, such as sadness, frustration, and exhaustion (Knox et al., 2011).

A quality advisor further supports doctoral journey success (Council of Graduate Schools, 2010). Positive graduate school experiences have been associated with good relationships between student and advisor, whereas problematic experiences have been linked to poor relationships between student and advisor (Knox et al., 2011). Pairing students and advisors with similar research interests could help ensure that relationships are optimized across the duration of the doctoral journey, especially during the dissertation phase (Bryant, 2004).

Often demonstrated thoroughly during the dissertation stage is the practice of disciplined inquiry, which represents the general process of creating new knowledge and insights through various methods, including research, evaluation, and assessment. Research activity has been identified as an important indicator of quality in research doctorate programs (Ostriker et al., 2011). Good research can be conducted by first asking, then acting upon, the right questions. An intense interest, or passion, for the practice of research could help students acquire and sustain the capacity to succeed as good researchers.

Current Measures of Doctoral Education Success

Numerous instruments have been developed to collect data on doctoral students and alumni. Such surveys offer insights to the understanding of what successful doctoral programs look like and which types of factors are important to the production of doctoral education success outcomes. The *Assessment of Research Doctorate Programs* (National Research Council [NRC], 2006), administered approximately every ten years, is intended to help prospective doctoral students select programs that align with their interests and to allow programs to benchmark themselves against comparable programs (Ostriker et al., 2011). The *Survey of Earned Doctorates* (SED), an annual survey of all individuals who earn doctoral degrees from accredited institutions in the U.S. (National Science Foundation [NSF], 2012a), collects data relevant to demographics, educational path such as time to completion, financial support while enrolled in graduate school, education-related debt, and plans immediately following graduation (Thurgood et al., 2006).

The *Survey of Doctorate Recipients* (SDR) (NSF, 2012b), a longitudinal, biennial panel survey of research doctorate holders in the United States, measures technical expertise required for the respondents' current primary career, income, and research productivity, including authored or co-authored articles, papers, monographs, or books. Cuetara and LeCapitaine's (1991) *Training Environment for the Dissertation Scale* (TEDS) and *Dissertation Implementation Scale* (DIS) measured levels of research coursework, research exposure, advisor/advisee relationship quality, and mastery of the dissertation process. The *Research Outcome Expectations Questionnaire* (RQEQ) and *Interest in Research Questionnaire* (IRQ) measure levels at which certain outcomes are expected as a result of research involvement and levels of interest toward various research activities (Bard, Bieschke, Herbert, & Eberz, 2000).

Although interpretation of data collected through the instruments described in this section helps point toward a better understanding of what success looks like in doctoral education, none are suitable for helping to explain how certain factors of success, such as passion, impact desired outcomes of doctoral education.

Student Passion

The discussion of student passion has roots in the context of student interest. Effective doctoral education calls for students to be interested in a discipline-relevant topic (Knox et al., 2011) and to have an inherent interest in and enthusiasm for the process of disciplined inquiry (Cuetara & LeCapitaine, 1991; Grover 2004). Developing a research question in an area of personal interest is an expectation as students move through the doctoral education process (Fernando & Hulse-Killacky, 2006). The transformation of a personal interest into a researchable problem is of particular importance during the dissertation proposal stage (Krathwohl & Smith, 2005).

Adequate exposure to research through coursework or other scholarly practices of disciplined inquiry could enhance student interest in research and student capacity to identify and resonate with a researchable topic (Cuetara & LeCapitaine, 1991). Inadequate exposure, coupled with deficiencies of relevant knowledge, self-awareness, and experience, could lead doctoral students to pursue research topics beyond their scope of interest (Fernando & Hulse-Killacky, 2006), potentially prompting attrition or prolonged time to completion (Smallwood, 2004).

While some authors discuss the importance of being interested in a topic and in the practice of research, others have utilized the language of passion. For example, passion for a topic and passion for research have been identified as important factors in the attainment of doctoral education success outcomes (Duffy et al., 2012; Katz, 1997). Passion has been

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recognized as especially important during the dissertation stage, as well as following graduation, if students want to follow a path of attainable and sustainable knowledge creation through research productivity. Hagel, Brown, and Samoylova (2013) suggested that passion is something that cannot necessarily be taught; however, it could emerge, be nurtured, and be put into action with appropriate environmental triggers. When students identify or sense purpose for their interests, mere interests have potential to transform into passions that can be embedded along the doctoral journey, optimizing impact on the process and the quality of the created knowledge. Contrarily, when passion ceases to exist, the will and action to continue producing knowledge also fades away. Much the same as a child would be at greater risk for quitting an activity or closing a book on a topic that fails to captivate the child's interest, a graduate student is at greater risk for withdrawing from the doctoral journey if the student does not have a passion for the topic of study or for the practice of research.

There seems to be a bit of a gray area where the language of interest and passion overlap. Perhaps authors writing in terms of interest were using the word interest to explain what others would have written with the word passion. Higher level interests, such as the well-developed interests discussed by Hidi and Renninger (2006) could nearly be synonymous with passions. Wall (2006) indicated that well-developed interests are essentially the same as passions when suggesting that intense interest, or passionate concern, is a variable critical to the research of a topic that is personally and socially important.

Although the concept of passion has been discussed freely in doctoral education success literature, definitions of passion in such literature have been vague. As evidenced by challenges in deciphering the differences between higher levels interests and passions, a more coherent definition of passion could enhance articulations of what passion means in doctoral education.

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Vallerand et al. (2003) generally defined passion as "a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy" (p. 756). In the context of doctoral education, passion has been discussed in terms of passion for a topic and passion for research. Given Vallerand et al.'s (2003) explanation of passion specific to an activity, the definition could indeed be adapted to better explain what it means to have a passion for the activity of research. For example, a student with a passion for research has a strong inclination toward research, likes research, finds research important, and invests time and energy in research; the practice of research has essentially been internalized into the student's identity.

Although the nature of Vallerand et al.'s (2003) definition was originally intended to align with an activity, it also could help explain what it means to have a passion for a topic of research. For example, a student with a passion for the topic of success has a strong inclination toward the topic of success, likes the topic of success, finds the topic of success important, and invests time and energy in the topic of success; the topic of success has essentially been internalized into the student's identity.

Dualistic Model of Passion

Within the general essence of passion, Vallerand et al. (2003) defined two subtypes of passion: *harmonious* and *obsessive*. An individual typically has control over a passion defined as *harmonious*, whereas a passion defined as *obsessive* typically has control over an individual. *Harmonious passion* was described as an autonomous, positive form of passion. In terms of *harmonious passion*, the authors noted that "individuals who wake up in the morning with a smile on their face…all have a passion activity that make their lives worth living. Passion can fuel motivation, enhance well-being, and provide meaning in everyday life" (p. 756). A *harmonious passion* is represented by an activity over which an individual has control, a

personal capacity to thoroughly engage oneself in the activity, and the harmonious alignment of the activity with other activities in one's life. *Obsessive passion*, rather, is a negative type of passion that results from an external force or pressure. An *obsessive passion* is represented by an activity in which people feel pressured or forced to engage; such an activity occupies a large amount of space in a person's self and is associated with conflict.

Roots of Passion Measurement

Mageau et al. (2009) suggested that interest is an important variable in the development of passion, suggesting that the measurement of passion might stem from earlier measurements of interest. The study of interests dates back to the early 1900s. Thorndike (1912) argued that interests are longitudinally sustainable. For example, if a person is interested in a subject at a young age, the person is likely to be interested in the same or a similar subject at an older age. The order of interests also matters; high-level interests at a young age are predictors of high-level interests at an older age, while low-level interests at a young age are predictors of low-level interests at an older age.

Much of the research on interests is rooted in the work of Strong (1926, 1927). In line with Thorndike's (1912) findings, Strong (1933) indicated that interest level toward a particular occupation could be a predictor of interest level toward the same occupation five years into the future. Strong's instrument has endured several revisions throughout the years, including additions of Basic Interest Scales (Campbell, Borgen, Eastes, Johansson, & Peterson, 1968) and General Occupational Themes, which represented Holland's six personality types (Campbell & Holland, 1972). Such adaptations, including theoretical integrations, have enabled Strong's seminal work to evolve as a sustainable predictor of occupational choice (Donnay, 1997). The most current version of the Strong Interest Inventory, which was revised in 2004, includes

General Occupational Themes, Basic Interest Scales, Occupational, Scales, and Personal Style Scales (Leierer, Blackwell, Strohmer, Thompson, & Donnay, 2008). Additional instruments designed to measure interest include the Campbell Interest and Skill Survey (CISS) (Campbell, Hyne, & Nilsen, 1992), which measures interest level in 200 vocational and academic topics and skill level in 120 vocational activities (Campbell, 1995); the Career Assessment Inventory (Johansson, 1975); and the Holland Self-Directed Search (Gottfredson & Holland, 1975).

Statement of the Problem

Literature calls for a deeper understanding of the development of passion for an activity (Mageneau et al., 2009). Special emphasis is placed on the need to better understand the development of passion as individuals move through a process of gaining expertise (Bonneville-Roussy, Lavigne, & Vallerand, 2010), such as graduate students developing passion for research while enduring a process of gaining research expertise through doctoral education. Although various surveys collect data that interest the purpose of quantifying the impact of certain factors on doctoral education success, they are not suitable instruments for measuring the impact of passion for research on the outcomes of knowledge creation and dissemination.

Quantitative findings reported in terms of motivation for research, which is linked to the construct of passion for research, indicated that motivation for research increases longitudinally as academic qualifications increase (Bailey, 2009). The calls from literature to further explore the development of passion for an activity through a process of gaining expertise, coupled with findings evidencing longitudinal development of the related construct of motivation for research, reveal the importance of quantitatively studying the development of passion for research at different stages along the doctoral journey.

Purpose of the Study

The purpose of this study was to survey Ph.D. students and graduates with the *Passion Scale* (Vallerand et al., 2003) to better understand the role of passion in the attainment of doctoral education success outcomes and to better understand the levels of passion that exist at different stages along the doctoral journey.

Passion as a factor of success in doctoral education has been discussed in terms of passion for a topic of study and passion for the activity of research. This study will narrow the scope of passion in doctoral education by focusing specifically on passion for the activity of research. Qualitative findings pointing toward the impact of passion for the activity of research on doctoral education success are apparent in the literature. Further, quantitative studies on passion for activities across other domains, including music and sports, provide evidence that passion for an activity is an important factor in the attainment of elite level outcomes relevant to the respective activity (Bonneville-Roussy et al., 2010; Vallerand et al., 2008a). Triangulating these quantitative findings with qualitative support of passion for research in doctoral education, leads to an inference that passion is an important factor in the attainment of doctoral education success outcomes; quantitative research exploring this inference, however, is rare.

Research Questions

To achieve the purpose of this study, four research questions were examined, as follows:

- Do differences exist in levels of *obsessive passion* and *harmonious passion* for Ph.D. current students and alumni?

- Do differences exist in levels of *harmonious passion* for research at different stages of the doctoral journey?

- Do differences exist in levels of *obsessive passion* at different stages of the doctoral journey?

- Are *harmonious passion* and *obsessive passion* significant predictors of knowledge creation and dissemination?

Research Design and Approach

The current study was conducted as a quasi-experimental, cross-sectional design, including data collected at a single point in time across three groups of students representing three different stages of doctoral education. IRB approval was obtained prior to beginning the study (see Appendix A). Although the cross-sectional design does not directly answer calls to better understand the longitudinal development of passion as individuals move through a process of gaining expertise (Bonneville-Roussy et al., 2010), it does provide insight into some of the questions for which longitudinal designs would seek answers.

Setting and Sample

The population included students who were enrolled in a Ph.D. program during the study and Ph.D. degree holders. The sample was comprised of enrolled Ph.D. students and Ph.D. alumni from one Midwest research institution. The participants were classified into three distinct groups, as follows: Group 1 included students currently completing coursework; Group 2 included students who had completed coursework, but had not yet graduated; and Group 3 included students who had graduated with a Ph.D.

Instrumentation

The *Passion Scale* (Vallerand et al., 2003) was developed as a scale to measure *passion* toward a general activity in terms of *harmonious passion* and *obsessive passion*. The original study conducted to validate the *Passion Scale* asked 539 college students to think about an

activity very close to their heart when completing the instrument. The *Passion Scale* portion of the instrument included 34 items written to represent the definitions of *harmonious passion* and *obsessive passion*. *Harmonious passion* items focused on an individual having control over the activity, a personal capacity to thoroughly engage oneself in the activity, and the activity's harmonious alignment with other activities in the person's life. *Obsessive passion* items focused on an individual feeling pressured or forced to engage in activity, a large amount of space in oneself occupied by the activity, and the experience of conflict. Respondents scored each item on a 7-point Likert-type scale that ranged from 1 = *do not agree at all* to 7 = *completely agree*. The study included several additional items related to the definition of passion. One item was written to measure the degree to which the activity was a passion; three items were written to measure the valuation of the activity; one item was written to measure the time and energy put toward the activity; five items were written to measure the degree of conflict between the identified passionate activity and the respondent's other activities in life. Aron, Aron, and Smollan's (1992) Inclusion of the Other in the Self (IOS) scale, which measures how close a person feels to someone or something, was included to assess the degree to which a person had internalized his or her identified passion. In other words, the IOS scale was used to measure the extent to which a person perceived an identified passion to be part of oneself.

Evidence of *Passion Scale* validity exists through findings of two exploratory factor analyses and one confirmatory factor analysis. Factorial validity of the *Passion Scale* administered in Vallerand et al.'s (2003) initial study was tested by randomly dividing participants into two groups. The initial exploratory factor analysis was conducted with 34 items and 284 participants. The analysis led to a revised list of 7 *harmonious passion* items and 7 *obsessive passion* items after removing items with weak loadings and items that loaded on both

harmonious passion and *obsessive passion* factors. A second exploratory factorial analysis was conducted using the revised list of 14 items, resulting in a two-factor solution explaining 54.7% of the variance. Further analysis using an oblimin factor rotation resulted in 7 theoretically-based *harmonious passion* items and 7 theoretically-based *obsessive passion* items. A confirmatory factor analysis was conducted using the list of 14 items and the remaining 235 participants. Results of the analysis revealed a good fit, $\chi^2(76, N = 235) = 171.70, p < .001$. Chronbach alpha analysis with the full sample ($n = 520$) indicated acceptable reliability of *harmonious passion* ($\alpha = .79$) and *obsessive passion* ($\alpha = .89$).

Vallerand et al.'s (2003) initial *Passion Scale* study measured outcomes of engagement in the identified passionate activity in terms of how respondents typically felt during the activity and how they typically felt following the activity. The outcome of flow was assessed with Jackson and Marsh's (1996) Flow State Scale to measure the elements of challenge, absence of self-consciousness, and control. Vallerand et al. (2003) reported a significant positive relationship existed between *harmonious passion* and all three flow elements (*challenge* = .38; *absence of self-consciousness* = .16; *control* = .24). *Obsessive passion* was not significantly related to any of the flow elements. Additional scales were adapted to measure positive emotions, anxiety, shame, and concentration (Vallerand et al., 1993). *Harmonious passion* was significantly positively correlated with positive emotions (.46) and concentration (.33), significantly negatively correlated with shame (-.24), and not significantly correlated with anxiety (Vallerand et al., 2003). *Obsessive passion* was significantly positively correlated with shame (.25), but was not significantly correlated with positive emotions, concentration, or anxiety.

Since the initial study to establish validity and reliability of the *Passion Scale*, further

support for the instrument has been demonstrated through several subsequent studies, spanning

around 150 or more types of activities (R. J. Vallerand, personal communication, January 16,

2013). Some *Passion Scale* studies have asked participants to first identify an activity of their

choice when given the instrument, then to complete the instrument based on the activity they

identified (Carpentier, Mageau, & Vallerand, 2011; Stenseng, 2008; Vallerand, et al., 2003).

Examples of specific contexts in which the *Passion Scale* has been administered to measure

passion include the activities of being a sports fan (Vallerand et al., 2008b), teaching

(Carbonneau, Vallerand, Fern, & Guay, 2008), nursing (Vallerand, Paquet, Phillippe, & Charest,

2010), playing video games (Lafreniere, Vallerand, Donahue, & Lavigne, 2009), playing music

(Bonneville-Roussy et al., 2010), and practicing yoga (Carbonneau, Vallerand, & Massicotte,

2010). Taken together, the findings from these studies suggest that *harmonious passion* and

obsessive passion can both lead to the attainment of high level outcomes; however, the processes

leading to such outcomes distinctly differ between people who are *harmoniously passionate*

about their activities and those who are *obsessively passionate* about their activities. For

example, processes for *harmoniously passionate* people typically include positive experiences

marked by higher levels of well-being and satisfaction; whereas processes for *obsessively*

passionate people typically include negative experiences marked by higher levels of conflict and

discontent (Rousseau & Vallerand, 2008).

While the bulk of *Passion Scale* research to date has focused on passion for an activity,

more recent research has applied the *Passion Scale* in terms of ideological passion, representing

people's passion for groups, causes, and ideologies that they would like to publicly promote

(Rip, Vallerand, & Lafreniere, 2012). People with *harmonious ideological passion* are more

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likely to support peaceful activities that promote a cause, while people with *obsessive ideological passion* are more likely to support extremist activities that promote a cause.

For the current study, with permission from R. J. Vallerand (personal communication, January 16, 2013), the *Passion Scale* was adapted to suit the activity of research. The *Passion Scale* was comprised of 17 items, including 5 passion criteria items, a sub-scale of 6 harmonious passion items, and a sub-scale of 6 obsessive passion items. In line with previous *Passion Scale* research, respondents were asked to score each item on a 7-point Likert-type scale ranging from 1 = *do not agree at all* to 7 = *completely agree*. The *passion criteria* items included the following: "I spend a lot of time doing research", "I like doing research", Doing research is important for me", Doing research is a passion for me", "Doing research is part of who I am". The *harmonious passion* items will include the following: "Doing research is in harmony with other activities in my life", "The new things that I discover doing research allow me to appreciate it even more", "Doing research reflects the qualities I like about myself", "Doing research allows me to live a variety of experiences", "Doing research is well integrated in my life", and "Doing research is in harmony with other things that are part of me". The *obsessive passion* items will include the following: "I have difficulties controlling my urge to do research", I have almost an obsessive feeling for doing research", Doing research is the only thing that really turns me on", "If I could, I would only do research", "Doing research is so exciting that I sometimes lose control over it", and "I have the impression that doing research controls me". Chronbach's alpha was calculated to determine internal consistency of the *Passion Scale*. The *harmonious passion* subscale exhibited good internal consistency (α = .89) according to the Chronbach's alpha levels described by George and Mallery (2003). The *obsessive passion* subscale also exhibited good internal consistency (α = .85).

In addition to the *Passion Scale* items, knowledge creation and dissemination items (i.e. numbers of refereed and non-refereed publications, oral presentations, and poster presentations) and demographic items (e.g. term and year began Ph.D. coursework, term and year completed Ph.D. coursework, term and year completed comprehensive exams, term and year began working on dissertation, term and year defended dissertation, and term and year graduated from Ph.D. program) were included as means to collect data for the proposed statistical analyses (see Appendix B).

Data Collection

Data were collected through an electronic version of the instrument that was built with Qualtrics online survey software. Email recruitment scripts were sent to current Graduate students and Alumni from the university's Graduate School office and Alumni office, respectively. Email invitations included a recruitment script (see Appendix C) with an explanation of the purpose of the study, instructions for participation, and a hyperlink to access the informed consent page and link to the survey (see Appendix D). Students and alumni each received a survey reminder via email approximately 2-weeks following the date of their respective initial invitations.

<center>**Data Analysis**</center>

Following the close date of the survey, data were exported from Qualtrics to .csv file; then the .csv file was imported to PSPP for statistical analyses. The raw data did not include personally identifiable information. The study included 209 total participants, representing seven academic colleges at the institution where the study took place. Participants included 62 Ph.D. students who had not yet completed coursework, 48 Ph.D. students who had completed coursework but had not yet graduated, and 99 Ph.D. alumni. Additional demographic details are

available in Table 4.1. Additional variables utilized to answer the research questions included annual average number of refereed publications, level of *harmonious passion* for research, and level of *obsessive passion* for research. See Table 4.2 for descriptive statistics of these variables.

Table 4.1

Participant Demographics

Variable	# of Participants	% of Participants
Gender		
Female	99	47.37
Male	105	50.24
Did not select gender	5	2.39
Age		
21-30	55	26.32
31-40	71	33.97
41-50	41	19.62
51-60	24	11.48
61-70	12	5.74
>70	2	.96
Did not select age	4	1.91
Status		
Currently completing coursework	62	29.67
Completed coursework but not yet graduated	48	22.97
Graduated	99	47.37
College		
Agriculture, Food Systems, and Natural Resources	56	26.79
Arts, Humanities, and Social Sciences	24	11.48
Business	2	.96
Engineering and Architecture	13	6.22
Human Development and Education	45	21.53
Pharmacy, Nursing, and Allied Sciences	10	4.78
Science and Mathematics	49	23.44
Other or did not select college	10	4.78

Note. n = 209.

Table 4.2

Descriptive Statistics

Variable	Min	Max	Mean	SD
Refereed knowledge creation (mean number per year)	.00	6.06	.71	1.05
Harmonious passion (scale score 1-7)	1.00	7.00	4.58	1.36
Obsessive passion (scale score 1-7)	1.00	7.00	2.46	1.34

Note. *n* = 209.

Doctoral program status was determined by triangulating a selection of demographic items that enabled the researcher to identify whether each respondent was currently completing coursework, has completed coursework but has not yet graduated, or has graduated. *Knowledge creation*, as a professional outcome of doctoral education success, was measured in terms of the annual average number of refereed publications since admission to the Ph.D. program: [(*term of survey completion - term admitted to Ph.D. program*) / (*refereed publications*)]. Time to degree completion was calculated by counting the number of years to the nearest third of a year from the term when the student began coursework to the term when the student graduated. Rounding to the nearest third of a year was possible because respondents selected spring, summer, or fall term, accompanied by a corresponding year, on each applicable survey item.

Harmonious passion for research was measured by averaging the six items on the *harmonious passion* subscale, while *obsessive passion* for research was measured by averaging the six items on the *obsessive passion* subscale. Respondents assigned one value to each *harmonious passion* item and one value to each *obsessive passion* item on a seven point Likert scale ranging from *not agree at all* to *very strongly agree.* The values of the six *harmonious passion* items were averaged to determine the value for data analyses that represented the

respondent's level of *harmonious passion*. The values of the six *obsessive passion* items were averaged to determine the value for data analyses that represented the respondent's level of *obsessive passion*. See Figures 4.1-4.3 to view visual, charted representations of mean *harmonious passion* and *obsessive passion* scale scores by gender, college, and doctoral status.

Results and Interpretation

Various statistical analyses were conducted to answer the proposed research questions. Statistics utilized to answer the research questions were derived through *t*-test, ANOVA, and multiple regression analyses. This section presents the results and interpretations of such analyses.
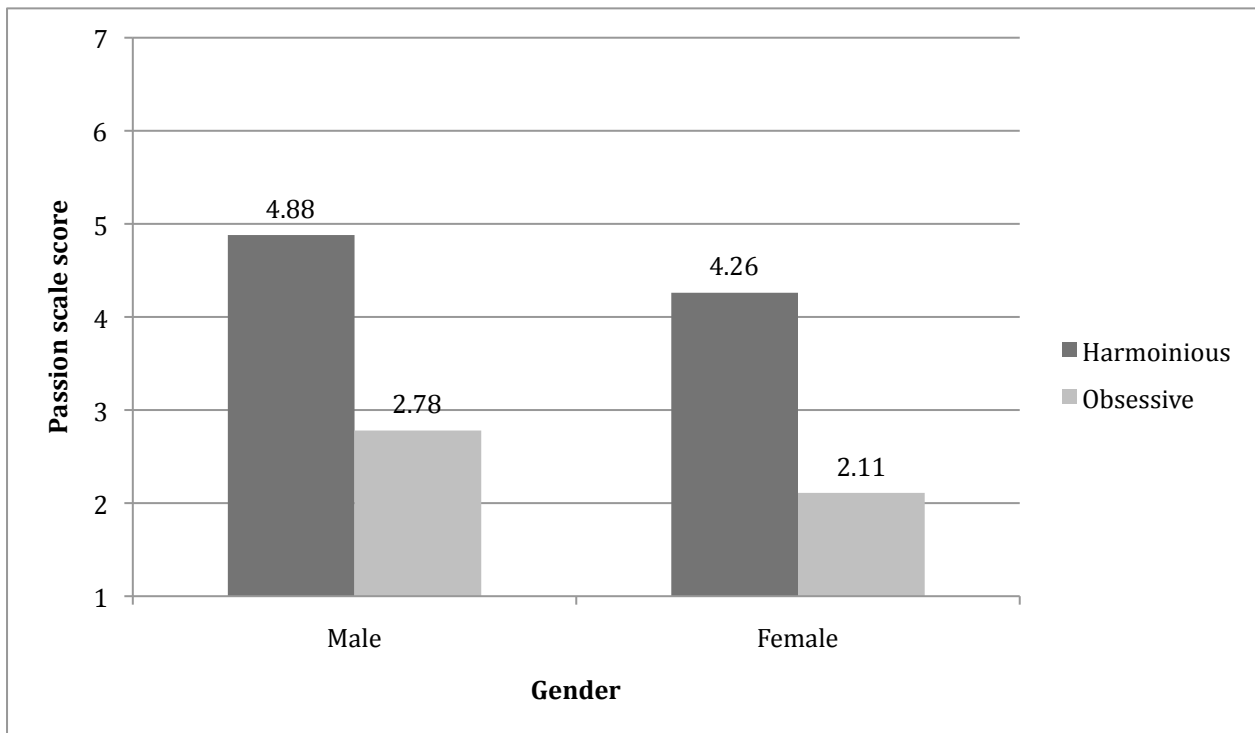
Figure 4.1. Mean *harmonious passion* and *obsessive passion* scale scores by gender.
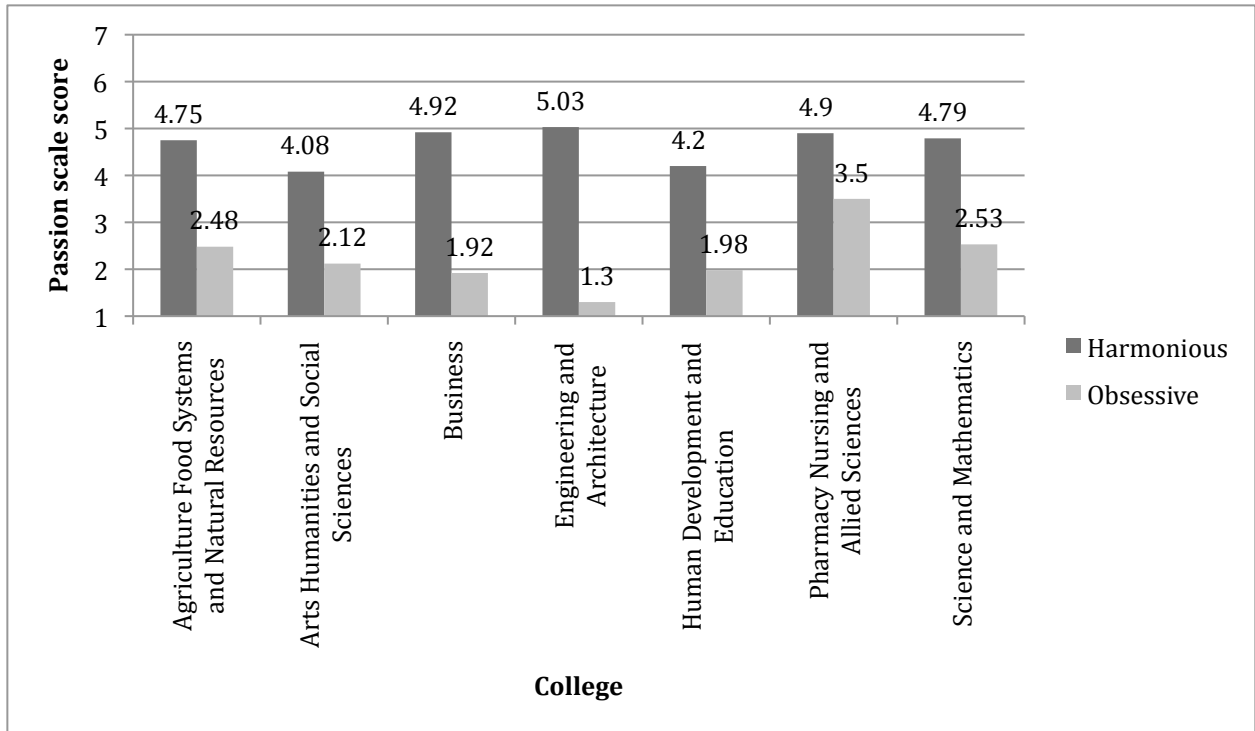
Figure 4.2. Mean *harmonious passion* and *obsessive passion* scale scores by college.
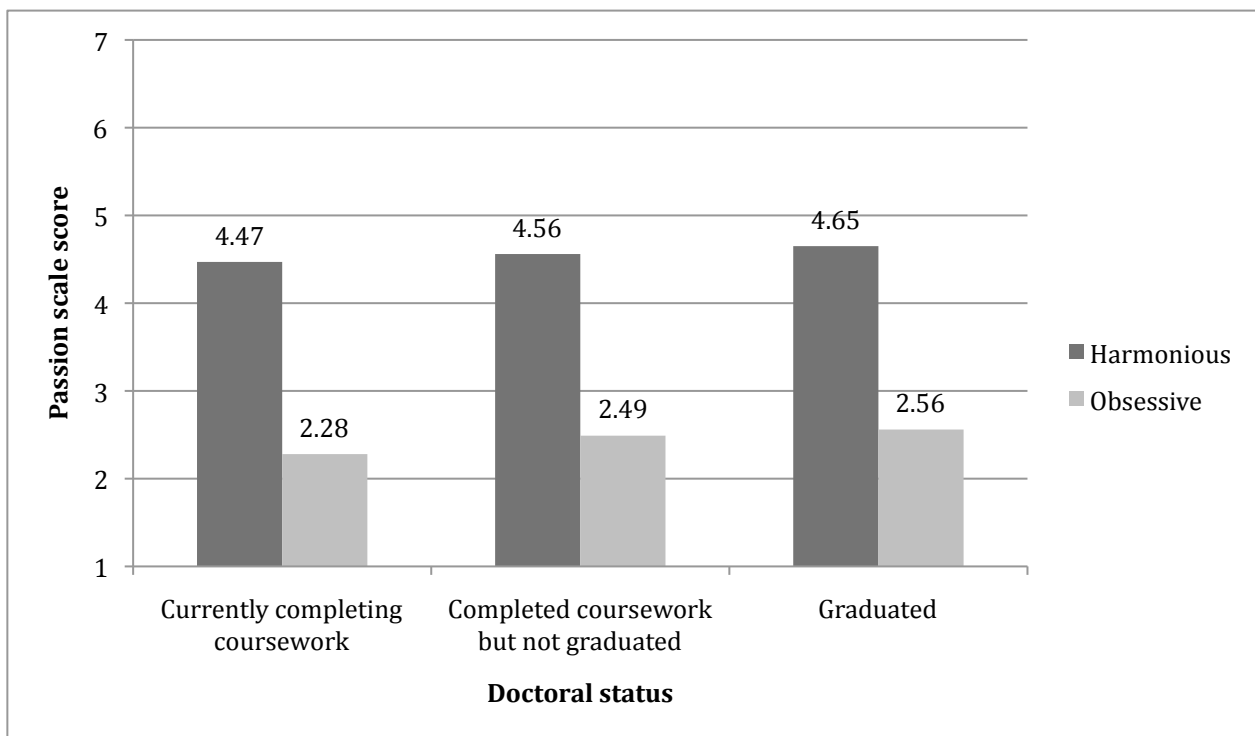
Figure 4.3. Mean *harmonious passion* and *obsessive passion* scale scores by doctoral status.

First research question. The first research question sought to answer whether a difference existed between levels of *harmonious passion* for research and *obsessive passion* for research for the participants in this study. Data were analyzed using a paired samples *t*-test. Test results indicated a higher level of *harmonious passion* for research ($M = 4.58$, $SD = 1.36$) over *obsessive passion* for research ($M = 2.46$, $SD = 1.34$), $t(208) = 22.80$, $p < .01$ (Table 4.3). This result suggests that current doctoral students and doctoral alumni are significantly more inclined to have an internal drive to engage in the activity of research than they are to feel externally pressured or forced to engage in the activity of research. This suggests that passion for research harmoniously aligns with the other activities that comprise one's lifestyle (Vallerand et al., 2003). Simply put, the students and alumni represented in this study are scholars because they want to be scholars, not because someone or something else wants them to be scholars.

Table 4.3

Differences Between Levels of Harmonious Passion and Obsessive Passion for All Participants

Participants	Harmonious passion		Obsessive passion		$t(208)$	p
	M	*SD*	*M*	*SD*		
All	4.58	1.36	2.46	1.34	22.80	<.01

Second research question. The second research question sought to answer whether level of *harmonious passion* for research is impacted by doctoral journey status, which included *not yet completed coursework, completed coursework but not yet graduated,* and *graduated* stages of doctoral education. Data were analyzed using a one-factor between subjects ANOVA design. Participants were nested in the stages of doctoral education. ANOVA results indicated that differences between the three stages of doctoral education were not significant [$F_{(2,206)} = 0.35$; p

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> .05] (Table 4.4). When the test was conducted on subsequent instances with the sample

disaggregated by gender and college, significance was not reached in any case.

This finding might offer merit to the criteria by which doctoral admissions committees

screen applicants' *harmonious passion* for research prior to admitting the applicants to their

respective programs. Previous passion research findings suggest that level of passion in expert

domains (Bonneville-Rousey et al., 2010) is somewhat higher than level of passion in non-expert

domains (Vallerand et al., 2003). Perhaps the *harmonious passion* ANOVA result of the current

study lends evidence to the premise that by the time students are admitted to Ph.D. programs,

they have entered expert level domains where their research capacities are greater than those in

less-expert research domains. Because expertise has previously been associated with higher

levels of passion, and mere admission to a Ph.D. program generally represents a level of research

competence that borders or maybe even crosses the line of expertise, it is reasonable to

understand how the scale value for *harmonious passion* would be relatively high.

As a consequence of high *harmonious passion* at time of official entry to a doctoral

program, little room exists for further development of *harmonious passion* throughout and

beyond doctoral education, thus no significant differences in levels of *harmonious passion*

between groups at different stages of the doctoral journey. Perhaps passion for research

essentially peaks by the time a person is admitted to a Ph.D. program; however a longitudinal

design in which the *Passion Scale* would be administered at multiple points in time across the

doctoral journey would be required to better support such an inference.

Third research question. The third research question sought to answer whether levels of

obsessive passion for research are impacted by doctoral journey status, which included *not yet*

completed coursework, completed coursework but not yet graduated, and *graduated* stages of

Table 4.4

Harmonious Passion by Doctoral Status ANOVA Summary

	Sum of Squares	*df*	Mean Square	*F*	Significance
Between Groups	1.28	2	.64	.35	>.05
Within Groups	380.88	206	1.85		
Total	382.16	208			

doctoral education. Data were analyzed using a one-factor between subjects ANOVA design.

Participants were nested in the stages of doctoral education. ANOVA results indicated that

differences in levels of *obsessive passion* for research between the three stages of doctoral

education were not significant [$F_{(2, 206)} = 0.81; p > .05$] (Table 4.5). This result is somewhat

surprising because it might be expected that obsessive passion would increase as Ph.D. faculty

and professionals become increasingly pressured by administrators to produce scholarly work. In

the like context, it is reassuring that although external demands might induce heightened pressure

on Ph.D. faculty and professionals to create and disseminate new knowledge, they do not seem to

allow such demands to negatively impact their love for research.

Table 4.5

Obsessive Passion by Doctoral Status ANOVA Summary

	Sum of Squares	*df*	Mean Square	*F*	Significance
Between Groups	2.92	2	1.46	.81	>.05
Within Groups	371.80	206	1.80		
Total	374.72	208			

Subsequent ANOVAs conducted with the sample disaggregated by gender did not reach significance in any case; however, subsequent ANOVAs conducted with the sample disaggregated by college revealed significant [$F_{(2,42)} = 7.16$; $p < .01$] (Table 4.6) *obsessive passion* differences between the three stages of doctoral education for participants representing Human Development and Education, but not for participants representing any other college in the study. The test for homogeneity of variance was not significant [Levene ($F_{(2,42)} = 1.16$; $p > .05$] indicating that this assumption underlying the use of ANOVA was met. The effect size ($\omega^2 = .22$) indicated that approximately 22% of the variability in levels of *obsessive passion* could be due to the three stages of doctoral education. According to Cohen (1988), this result suggests that there is a medium effect of stage of doctoral education on *obsessive passion* for research.

Table 4.6

College of Human Development and Education Obsessive Passion by Doctoral Status ANOVA Summary

	Sum of Squares	*df*	Mean Square	*F*	Significance
Between Groups	9.37	2	4.69	7.16	<.01
Within Groups	27.48	42	.65		
Total	36.85	44			

In the Human Development and Education subgroup, the 19 participants in the currently completing coursework group had an average *obsessive passion* scale score of 1.67 (*SD* = .70); the 11 participants in the completed coursework but not yet graduated group had an average *obsessive passion* scale score of 1.63 (*SD* = .65); the 15 participants in the graduated group had an average *obsessive passion* scale score of 2.62 (*SD* = 1.01). Because the sample sizes were unequal, Scheffe post hoc tests were conducted to identify where differences between the groups

existed. Post hoc tests indicated that *obsessive passion* was significantly higher for graduated

students than for students who were currently completing coursework ($p < .01$) and for students

who had completed coursework but had not yet graduated ($p < .05$). The difference between

students who were currently completing coursework and for students who had completed

coursework but had not yet graduated did not reach significance. This finding could be an

indicator that scholars in Human Development and Education disciplines feel increased external

pressures to produce scholarly products following graduation.

      Fourth research question. The fourth research question sought to answer whether

harmonious passion for research and *obsessive passion* for research were significant predictors

of knowledge creation and dissemination. Data were analyzed using multiple regression in the

aggregate and disaggregate by college. Analysis in the aggregate revealed that knowledge

creation and dissemination did significantly vary as a function of *harmonious passion* for

research and *obsessive passion* for research. Taken together, *harmonious passion* for research

and *obsessive passion* for research explained approximately 4% ($R^2 = .04$) of the variability in

knowledge creation and dissemination [$F_{(2,206)} = 4.50$; $p < .05$] (Table 4.7). The adjusted R^2 (.03)

indicates that approximately 3% of the variation in knowledge creation and dissemination would

be explained by the predictor variables if this study were repeated with a new sample. The

multiple regression analysis further determined that the following prediction equation could be

used to predict knowledge creation and dissemination for similar students: *Knowledge creation =*

.03 + .18(harmonious passion) – 0.06(obsessive passion). Harmonious passion was individually

significant at the .05 alpha level [*Harmonious passion* $t_{(206)} = 2.94$, $p < .01$]; however, obsessive

passion was not individually significant at the .05 alpha level [*Obsessive passion* $t_{(206)} = -.99$, $p >$

.05]. This finding provides quantitative evidence for the argument that passion for research is an important factor in the attainment of doctoral education success.

Table 4.7

Regression Analysis Summary for Passion Variables Predicting Knowledge Creation

Variable	B	SEB	Beta	t	p
Harmonious Passion	.18	.06	.23	2.94	<.01
Obsessive Passion	-.06	.06	-.08	-.99	>.05

Note. R^2 = .04 (N = 209, p < .05)

When disaggregating the sample by college, multiple regression revealed that knowledge creation and dissemination significantly varied as a function of *harmonious passion* for research and *obsessive passion* for research among participants within the College of Science and Mathematics, but not among participants representing any of the other colleges. Taken together, *harmonious passion* for research and *obsessive passion* for research explained approximately 13% (R^2 = .13) of the variability in knowledge creation and dissemination [$F_{(2,46)}$ = 3.37; p < .05] for participants representing the College of Science and Mathematics (Table 4.8). The adjusted R^2 (.09) indicates that approximately 9% of the variation in knowledge creation and dissemination would be explained by the predictor variables if this study were repeated with a new sample. The multiple regression analysis determined that the following prediction equation could be used to predict knowledge creation and dissemination for similar students: *Knowledge creation* = .68 + .24(*harmonious passion*) – .38(*obsessive passion*). *Obsessive passion* was individually significant at the .05 alpha level [*obsessive passion* $t_{(46)}$ = -2.53, p < .01]; however, *harmonious passion* was not individually significant at the .05 alpha level [*harmonious passion* $t_{(46)}$ = 1.57, p > .05].

Table 4.8

College of Science and Mathematics Regression Analysis Summary for Passion Variables Predicting Knowledge Creation

Variable	*B*	*SEB*	*Beta*	*t*	*p*
Harmonious Passion	.24	.15	.24	1.57	> .05
Obsessive Passion	-.38	.15	-.38	-2.53	< .05

Note. $R^2 = .13$ ($N = 49$, $p < .05$)

This finding indicates that, although *harmonious passion* and *obsessive passion* are significant predictors of knowledge creation in the aggregate, their degree of importance in the creation and dissemination of knowledge varies among disciplines, demonstrating the most notable levels of importance in the areas of science and mathematics. Perhaps the most intriguing result of this equation is the negative beta weight associated with *obsessive passion*, indicating a negative relationship between obsessive passion and knowledge creation. As *obsessive passion* increases, knowledge creation decreases, contradicting previous research suggesting that *obsessive passion* shares a positive relationship with outcomes of success (Bonneville-Roussy et al., 2010; Vallerand et al., 2008a). This conflicting finding could lead to a belief that, at least in terms of authoring refereed publications, *obsessive passion* in the academic realm of science and mathematics might not fit the previously defined mold that positively associates *obsessive passion* with outcome productivity. Future research with a larger sample representing other Ph.D. programs and disciplines would be required to determine if the negative relationship between *obsessive passion* and scholarly productivity could be generalizable to a broader population.

Limitations

The self-reporting nature of this survey produces a risk for inaccurately reported data. Further, this study asked participants to self-report their demonstrations of knowledge creation and dissemination in terms of refereed publications; however, respondents might have varying interpretations of what it means for such forms of knowledge to be refereed. Such limitations could potentially be mitigated with more complex studies that triangulate multiple measures of passion, including the *Passion Scale*, other newly created or adapted instruments to measure passion, and qualitative passion data. To alleviate the limitation of self-reported knowledge creation and dissemination, a modified study could potentially allow scholarly productivity to be drawn from a more objective, standardized data source, such as *Scopus* (Elsevier, 2012).

Delimitations

This study sought to better understand the development of passion throughout the doctoral education journey and beyond. Therefore, the preferred design for this study would have been a longitudinal, repeated measures design (Trochim & Donnelly, 2006). However, given the restraints of time and resources required to conduct such a study, the present study took shape as a quasi-experimental, cross-sectional design. Given the cross-sectional nature, solid implications of longitudinal passion development were difficult to infer. For example, if participants who were students during the time of this research were studied with a repeated-measures design through post-graduation, inferences made from findings of previous studies would suggest that some students would be lost to attrition before transitioning to subsequent stages of the doctoral journey.

Further, the present study used a convenience sample of students in the institution currently attended by the researcher. Although the sample was relatively easy to access and the

response rate was adequate, the findings are not as generalizable as they would be if a broader-scoped sample had participated.

Implications

This section presents implications for administrators, faculty, and researchers. The importance of passion is widely discussed in terms of doctoral education success. However, most discussions are informed by qualitative data. The findings of this study help enhance understanding of the extent to which passion impacts the outcome of knowledge creation and offer insights toward the levels of passion that exist at various stages during the doctoral education journey and beyond. Such findings could help inform improvements to a variety of facets of doctoral education, including overall programming, instruction, advising, and research.

Implications for Faculty

This study provides a quantitative frame of reference from which to interpret passion for research. The findings contribute to knowledge about impact of *obsessive passion* and *harmonious passion* on the outcomes of doctoral education, and the prevalence of the two types of passion at varying stages of the doctoral journey, establishing a platform upon which faculty could explore and develop differentiated methods for working with and advising students exhibiting different types and levels of passion. Results of the fourth research question (i.e. Are *harmonious passion* and *obsessive passion* significant predictors of knowledge creation and dissemination?) quantitatively support the importance of passion for research. Such quantitative support could serve as an additional piece of knowledge that faculty could utilize in the triangulation of data when articulating the importance of passion for research to students.

Implications for Administrators

        The findings of this study could establish benchmarks of *harmonious passion* for research and *obsessive passion* for research, which could augment the process of screening potential Ph.D. students for admission to doctoral programs. Ph.D. admissions committees could administer the *Passion Scale* as part of the application process to better gauge whether doctoral program applicants exhibit levels of passion comparable to current students and alumni. Admissions committees might also consider offering the *Passion Scale* online as a self-assessment tool for potential applicants to assess their levels of passion for research, allowing potential applicants to better understand their levels of preparedness for pursuing doctoral education.

Implications for Researchers

        The implementation of this study brings the tenets of the dualistic model of passion closer to the arena of doctoral education. However, further research would be warranted to gain a better understanding of how *harmonious passion* and *obsessive passion* are developed to reach levels that align with levels exhibited by Ph.D. students and alumni. Although significant differences did not exist between groups at various stages of doctoral education the majority of cases, there appeared to be a slight upward rise in both types of passion for groups further along in their doctoral journeys. Researchers might consider broadening the scope of the sample to include undergraduate and masters level students to better understand when and how *harmonious passion* and *obsessive passion* are developed. Better understandings of when and how passion for research is developed could lead to enhanced cultivation of passion for research while helping to position undergraduate and masters level students for future doctoral endeavors. Such research could include variables to assess levels of exposure to research to better understand whether

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research exposure plays a role in impacting passion for research. Although a cross-sectional design could help point to answers, a longitudinal design following students for several years, from pre-admission to undergraduate education through completion of doctoral education, would yield more reliable findings.

Researchers might consider conducting a similar study that would include a group of students lost to attrition. Because degree completion is a desired outcome of doctoral education, it would be helpful to know if levels of passion for research are notably lower for attrited students. Being that the present study does not include a subgroup of attrited students, and not knowing which students in the current study will leave their programs prematurely, if any, we are unable to draw any inferences relevant to the role that passion for research might play in doctoral education attrition.

The findings of this study, particularly relative to the negative relationship between *obsessive passion* and knowledge creation in the College of Science and Mathematics, warrants further research to study how passion for research impacts outcomes of success differently according to college discipline and why *obsessive passion* is negatively related to success outcomes in this study, whereas it has been positively correlated with success outcomes in other domains. Additional directions for research might also include studying passion for the topic of research. Passion for a research topic could be studied by triangulating the methods of the current study with instruments similar to those used in ideological passion studies (Rip et al., 2012). Research questions might ask whether passion for the topic of research impacts outcomes of doctoral success and, if it does have an impact, whether passion for the practice of research and passion for a topic of research impact outcomes of doctoral education success at different levels.

CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

Doctoral education is intended to make our world a better place through the preparation of scholars (Ostriker et al., 2011). Scholars contribute to the betterment of cultures, societies, and nations through the creation and dissemination of knowledge that ignites solutions to our problems and leads to other enhancements within our daily lives (Walker et al., 2008). Although doctoral education programs prepare many students to contribute to their respective communities as knowledge creators, they spend excess money, time, efforts, and other resources on the partial education of a substantial number of students lost to attrition. Low completion rates, such as the 57% 10-year completion rate reported by the Council of Graduate Schools (2008), deface the value of higher education through the eyes of many key stakeholders (Kalsbeek, 2013).

High doctoral education attrition rates and consequential stakeholder concern call attention to the need for an improved understanding of doctoral education success, which could help ensure that all relevant resources are optimized for preparing all admitted students to graduate as fully formed scholars (Walker et al., 2008). This disquisition sought to enhance the academy's understanding of doctoral education success through the composition of three separate but related manuscripts that add to the knowledge base of how doctoral students successfully nurture and contribute their capacities as knowledge creators. The first manuscript presented a new framework for outcomes and factors of doctoral education success. The second manuscript informed a deeper understanding of knowledge creation through a qualitative study framed by autoethnography. The third manuscript added to the understanding of the impact of passion for research on doctoral education success outcomes through a quantitative study that applied survey research methods.

The *P Model of Doctoral Success*. A Framework for Success in Doctoral Education

This manuscript presented a new model through which to interpret doctoral education success. The model includes outcomes and factors of success rooted by a definition of doctoral education success, which was proposed as a sustainable, satisfying process of generating outcomes that support the evolution of academia. Outcomes were presented in terms of personal and professional outcomes; factors were presented in terms of basic, internal, external, and operational factors.

Professional outcomes include measures of program completion, job placement, publications, and presentations. Personal outcomes include personal satisfaction and quality of life. Basic factors include *presence* (e.g. being attentive to the moment), *proficiency* (e.g. adequate intellectual competence), *perspective* (e.g. ability to view contexts through multiple lenses), and *pertinence* (e.g. focusing on issues relevant to the academic community, personal goals, and professional goals). External factors include *possibility* (e.g. identifying or being presented with the right opportunities), *place* (e.g. being at the right university in the right program), *people* (e.g. being supported by the right network of friends, family, scholars, and other professionals), and *prosperity* (e.g. having adequate resources, financial and other). Internal factors include *purpose* (e.g. knowing or sensing a deeper meaning for the doctoral journey), *passion* (e.g. something one likes, invests effort in, and finds important), *persistence* (e.g. taking action in the face of adversity), and *patience* (e.g. waiting for the optimal time to take action). Operational factors include *process* (e.g. synchronized mobilization of internal and external factors), *practice* (e.g. activities related to academic scholarship), *play* (e.g. recreational activities unrelated to academic scholarship), and *pause* (e.g. moments of rest).

The *P Model of Doctoral Success* could serve as a tool for advisors to use when helping students make intentional decisions to optimize success or as a partial framework for administrators to reference when establishing and/or reviewing admission standards for doctoral programs. The model could further serve as a tool for prospective students to consult when considering application to doctoral programs or for existing students to review when assessing the extent to which the factors of success currently support their desired professional and personal outcomes. Reflection questions specific to each factor were presented to help operationalize the model as a reflective tool.

From Nowhere to Somewhere. Developing a Reflective Scholar Through an Autoethnographic Process of Uncertainty, Inquiry, and New Perspective

This manuscript is a product of an autoethnographic process that was made possible through an independent study that I endured during the spring 2012 academic term. The process began with the somewhat arbitrary selection of a topic intended to guide the direction of the study. Confused about how to proceed following the identification of a topic, I started writing reflections in hopes that a research direction would surface through the process. The reflections, themselves, became the pieces of qualitative data that I analyzed as part of the autoethnographic process.

Through the study, I served dual roles as the researcher and the participant. As the researcher, I analyzed the written reflections that I produced as the participant. Themes revealed through the analysis included *reflective scholar definitions*, *mindfulness*, *cycle of knowledge creation*, and *domains of knowledge creation*. The *cycle of knowledge creation* theme included sub-themes of *uncertainty*, *disciplined inquiry*, and *new perspective*. The *domains of knowledge creation* theme included *interest*, *career*, and *literature*.

Several thoughts about *reflective scholar definitions* pointed toward the essence of what it means to be a reflective scholar. A concise definition was not presented; however, it was suggested that a definition would likely include a keen awareness of oneself, attention to uncertainty, scholarly research, discovery of new perspective, and effective merging of various life domains. *Mindfulness*, which was discussed as a conscious awareness of the moment, accompanied by an instant capacity to see beyond the clouds of distraction that block truth and opportunity, was interpreted as a state of existence that could enable a scholar to sustainably navigate the cycle of knowledge creation and effectively integrate the domains of knowledge creation. The *cycle of knowledge creation* is prompted by a resonance with *uncertainty*, leading to a process of *disciplined inquiry*, which results in *new knowledge/perspective* that induces subsequent *uncertainty* to keep the every-expanding cycle in motion. It was suggested that merging the *domains of knowledge creation* (i.e. *interest*, *career*, and *literature*) would enable the pursuit of a practical disciplined inquiry topic (e.g. research topic) that would be represented by a high degree of focus, clear sense of direction, and reasonable time to completion.

The autoethnographic method applied for this study led me from a point of nowhere (i.e. an ambiguous thought without a vision) to a place of somewhere (i.e. new perspective). The method provided me with an opportunity to analyze personal written reflections through a process that led to the creation of a scholarly product, as well as to a greater appreciation for the process and practice of written reflection. The writing and analyses of my reflections, along with periodic reviews of applicable literature, further helped me begin to trace the origins of my worldview.

For the Love of Research. The Passion Factor of Doctoral Education Success

This manuscript presented a quantitative study on passion for research. Passion for research, as a factor of success in doctoral education, has been discussed in qualitative terms; however, quantitative studies on passion for research are rare. For this study, Vallerand et al.'s (2003) *Passion Scale* was adapted for the activity of research to help better understand the roles that *harmonious passion* for research and *obsessive passion* for research play in doctoral education success. This study sought to answer whether differences existed between levels of the two types of passion for research, *obsessive passion* and *harmonious passion*, for doctoral students and alumni, whether differences in each type of passion existed at different stages of the doctoral journey, and whether the two types of passion were significant predictors of doctoral education success in terms of knowledge creation and dissemination. The adapted *Passion Scale*, along with an adjacent survey with questions requesting demographic and knowledge creation information, was administered electronically to Ph.D. students and Ph.D. alumni representing a Midwestern research university. The sample was comprised of 209 respondents, including 62 students who had not yet completed coursework, 48 students who had completed coursework but not yet graduated, and 99 alumni.

Paired samples *t*-test results indicated a significantly higher level of *harmonious passion* for research ($M = 4.58$, $SD = 1.36$) over *obsessive passion* for research ($M = 2.46$, $SD = 1.34$), $t(208) = 22.80$, $p < .001$. ANOVA results indicated that *harmonious passion* differences between the three stages of doctoral education were not significant in the aggregate [$F_{(2,206)} = 0.35$; $p > .05$] and that *obsessive passion* differences between the three stages of doctoral education were also not significant in the aggregate [$F_{(2, 206)} = 0.81$; $p > .05$]; however, when disaggregating the sample by college, ANOVA results revealed significant [$F_{(2,42)} = 7.16$; $p = .002$] *obsessive*

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passion differences between the three stages of doctoral education for participants representing the college of Human Development and Education. Multiple regression indicated that *harmonious passion* for research and *obsessive passion* for research explained approximately 4% ($R^2 = .04$) of the variability in knowledge creation and dissemination [$F_{(2,206)} = 4.50$; $p = .012$] in the aggregate. When disaggregated by college, multiple regression indicated that *harmonious passion* for research and *obsessive passion* for research explained approximately 13% ($R^2 = .13$) of the variability in knowledge creation and dissemination [$F_{(2,46)} = 3.37$; $p = .04$] for participants representing the College of Science and Mathematics. Interpretations of the results were discussed and implications for administrators, faculty, and researchers were presented.

Limitations

Limitations are evident in each manuscript. In terms of the first manuscript, *The P Model of Doctoral Success: A Framework for Success in Doctoral Education*, the intent to concisely introduce a new lens for interpreting doctoral education success consequently inhibited discussions toward the deeper meaning of each factor and outcome. Further, the semantics of alliteration and metaphor, which were intentionally applied to enhance resonance with the model for a broader audience of readers, could alternatively serve as barriers to the essence of the model for other readers.

In terms of the second manuscript, *From Nowhere to Somewhere: Developing a Reflective Scholar Through an Autoethnographic Process of Uncertainty, Inquiry, and New Perspective*, the findings are interpretations of one individual who served dual roles as the sole researcher and sole participant. As such, the presented understandings of reflective scholarship, domains and processes of knowledge creation, and the perceived effectiveness of written reflection cannot be generalized to all scholars within and beyond the scope of academia.

In terms of the third manuscript, *The Passion Factor of Doctoral Education Success: The Role of Passion in Knowledge Creation*, the self-reporting design of the survey created a risk for inaccurately reported data. In terms of refereed publications, some respondents might have reported a greater or lesser number of publications than that which they actually authored or co-authored. Respondents might have also had varying interpretations of what constitutes a refereed publication. Further weaknesses of the study included the use of a convenience sample and the implementation of a cross-sectional design with intentions to address questions that could have been more effectively answered with a longitudinal study.

Closing Reflections: Adages for Success

The preparation of these manuscripts contributed to my personal transformation as scholar. For example, the first manuscript enhanced my attention toward the complex system of factors that help facilitate the creation and dissemination of knowledge; the second manuscript empowered my confidence to create something through a process stemming from a seemingly arbitrary starting point; the third manuscript honed my skill in quantitative research design and analysis. Taken together, the three manuscripts comprising the body of this disquisition add insight to the knowledge base of success in doctoral education. This section draws from various tenets contained within these manuscripts to present brief adages intended to further encourage a path of doctoral education success.

Begin the Doctoral Journey With an Intention to Achieve the Desired Outcomes of Doctoral Education

To develop your expertise as a knowledge creator and fully formed scholar, have at least somewhat of an understanding of your core values and beliefs at the onset of your journey. Achieving success will be difficult if you are unable to draw connections between your doctoral

experiences and your genuine self. Developing expertise of yourself (i.e. understanding your core values and beliefs) optimizes your capacity to develop expertise within and across external domains, including those relevant to your doctoral discipline. Use the doctoral journey to build upon and discover your gifts, passions, and core values. Understanding and acknowledging them will enhance your ability to identify opportunities where they could be contributed and enhance your capacity to make meaning out of various types of content, experiences, and relationships that you encounter.

Purposefully Position Yourself in Domains That Nurture Your Scholarly Disposition

Purposefully positioning yourself in suitable domains includes surrounding yourself with the right people, working at the right place of employment, and studying in the right program. Pay attention to the development of your scholarly disposition; it is the foundation upon which your expertise will be built, the soil from which your expertise will grow. Learn to sift through the clutter of the content to find the relevant information that resonates with you. Much of the content exposed to you throughout your doctoral journey will be messy, but it is necessary to address the mess; within it exists the meaning for which you are seeking. Be aware that meaning can found in the messiest, quietest, and most ordinary places. Have an intention to find the right place for you, but do not force yourself into a place where you were not designed to fit. In the context of research, be purposeful in finding a topic with which you resonate, but do not force yourself to resonate with a research direction that is not right for you. Forced resonance is false resonance. Framing your journey through the lenses of the following adages could help ensure that your resonance is real, enhancing your potential to create important knowledge and develop into fully formed scholar.

It Doesn't Matter What You're Capable of Doing; What Matters is That Which You Actually Do

This adage highlights the *Ps* of *purpose*, *proficiency*, *possibility*, *presence*, and *process*. As a scholar, you are capable of making a meaningful difference (i.e. serving an important *purpose*) in the world through the creation and dissemination of knowledge; however, possessing the gift of ability to be a potential knowledge creator (i.e. being *proficient* as a knowledge creator) only matters if you actually create knowledge. To optimize your impact as a knowledge creator, allow yourself to be aware of (i.e. *present* to) your gifts and act on opportunities (*possibilities*) to nurture your potential as a contributor of your gifts. The doctoral journey is a *process* of boundless opportunity (i.e. *possibility*) to discover, develop, and contribute your gifts.

In Whatever You Do, Do Nothing Less Than Your Absolute Best

This adage highlights the *Ps* of *passion*, *purpose*, *process*, *practice*, *play*, *pause*, and *presence*. Work hard; take breaks. You perform your best through a pursuit of balanced effort and rest. Your best work is performed when it is aligned with your *passions* and executed with *purposeful* intent. To do your best, allow yourself to engage in *process* balanced by appropriate amounts of *practice*, *play*, and *pause*. In other words, work hard, have fun, and take breaks. Reject temptations to merely go through the motions. Mindless processes of simply going through the motions represent empty approaches, which ultimately lead to empty outcomes. Approaches filled with attention (i.e. *presence*) and meaning (i.e. *purpose*), however, ensure that the entirety of the *process* and the outcomes are fulfilled. Your best work is rigorous, but when performed with *presence*, in alignment with *passion*, and through a lens of *purpose*, rigorous work does not feel daunting or quite as difficult.

Others Show You That Which You Seek in Them; Seek Their Best

This adage highlights the *Ps* of *presence*, *people*, and *perspective*. Seek out and be attentive (i.e. *present*) to the inherent gifts and strengths of your colleagues and classmates (i.e. *people*). Each student and faculty member with whom you interact along your journey is incredibly gifted. Position yourself with an adjustable *perspective* to ensure that you are a humble, *present* learner in your interactions with each of them. Embracing and drawing from the excellence of the *people* along your journey will help you develop a rich, diverse capacity to optimize your contributions and impact as a scholar across a broad scope of contexts and experiences.

The Door to Opportunity is Opened With Your Heart

This adage highlights the *Ps* of *passion*, *possibility*, *presence*, *pertinence*, and *proficiency*. The doctoral journey is a place to kindle the *passions* within your heart, even if they do not initially seem to align with the surface of the program. You might have a spark of something in your heart that begins to ignite your *passions*, but have not yet identified with practical opportunities (i.e. *possibilities*) to align your *passions* with your personal or professional journey. *Presence* to your innermost self, coupled by *presence* to the academic context of your doctoral journey, will enable you to identify a common path along which the pursuit of your *passions* are relevant (i.e. *pertinent*) to your desired personal and professional outcomes. Nurture your *passions* throughout the duration of your doctoral program by consulting with your heart when completing assignments, participating in discussions, and engaging in other scholarly activities. As your efforts to achieve personal outcomes become more closely aligned with your efforts to achieve professional outcomes, the level of expertise (i.e. *proficiency*) accumulated through the *process* of your efforts positions you to identify and open doors of

opportunity (i.e. *possibility*) that are *pertinent* to your individual and academic activities and goals.

That Which is Truly Best for You is Also Truly Best for the World

This adage highlights the *Ps* of *possibility*, *passion*, *proficiency*, *process*, *presence*, and *practice*. The doctoral journey is a path on which you have the opportunity (i.e. *possibility*) to pursue your *passions* and develop your capacity (i.e. *proficiency*) to be a contributor to the world as a creator and disseminator of knowledge. Avoid resisting that which you truly love (i.e. your *passion*) simply because you do not currently see how it would fit or because you fear the perception of others. Use your doctoral journey as a *process* to nurture, expose, and contribute your innermost *passions*, gifts, and values. Remaining *present* to, and acting upon, opportunities (i.e. *possibilities*) to nurture your gifts and *practice* integrating your *passions* throughout the doctoral *process* will optimize your *proficiency* to create and disseminate knowledge relevant to you and to the world. The contributions from your deepest self will feel right to you; they will feel right to the world.

Reach for the Stars, but Remember to Touch the Clouds, Moon, and Sun on Your Way up

This adage highlights the *Ps* of *proficiency*, *presence*, *process*, *persistence*, and *patience*. You have already demonstrated that you are capable of setting and achieving elevated goals. As you move forward in your doctoral journey, continue to set high goals to build upon your level of *proficiency*. Remember, however, the importance of setting and acknowledging intermittent goals to help retain focus on the acute context of your journey (i.e. remain *present* to the current step of the *process*). Be *persistent* in the pursuit of your goals to create new knowledge and complete your program, but also be *patient* enough to ensure that the steps toward your goals are taken at the right time. Allow brief or extended moments of *pause* to recognize and appreciate

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each of your achievements. On the journey to the successful defense of your disquisition, celebrate the milestones of finalizing your plan of study, finishing your capstone paper, and passing your comprehensive exams, along with the milestones of completing each class and meeting the requirements of each assignment. Although some achievements across your journey might be recognized as more significant than others, each step is critical in the overall effectiveness of the *process*. As such, each should be acknowledged and valued as a necessary component of the degree pursuit.

The Purest Form of Contentment Exists in the Realization That You are Already There

This adage highlights the *Ps* of *process*, *presence*, *purpose*, *practice*, *play*, *pause*, and *possibility*. Your journey toward degree completion and knowledge creation requires a *process* of several important efforts and experiences. Be *present* to the *purpose* of each moment of *practice*, *play*, and *pause* in which you engage throughout your doctoral pursuit. Find contentment in knowing that you are exactly where you need to be along your path to success. Each point on your path is the right destination at its given time. Give full attention to the step you are currently taking; at any given moment, you could be presented with an opportunity (*possibility*) to learn something new. You prepare yourself for effective steps in the future through ongoing readiness and attention to the moment right now. Be fully *present* to each experience along your journey. Pay attention to each discussion, each reading, each assignment, and each interaction along your journey. Being *present* participant at each step of your journey will cultivate sustainable success through your doctoral pursuit and beyond.

True Wealth Exists Through the Genuine Appreciation of All That You Have

This adage highlights the *Ps* of *proficiency*, *perspective*, *presence*, *people*, *prosperity*, and *possibility*. A doctoral journey leading toward degree completion and sustainable knowledge

creation often parallels a personal transformation marked by enhanced *proficiency* and new *perspective*. As you proceed through your journey, appreciate that which you already have, know and see. A *perspective* of appreciation will enable you to realize the full and true value of everything that comprises your doctoral pursuit, positioning you with contented confidence at any given point along your way. Recognize and appreciate your existing competencies and worldviews, along with all resources and experiences encountered along your path. Being *present* to and grateful for your current *proficiencies* and *perspectives*, as well as the *people*, *prosperities*, *possibilities*, and all other factors of success that line your doctoral path, will enable each variable to function as a critical tool for optimizing the development of your scholarly capacities.

When the Perfect Solution Does Not Exist, Proceed With the Best Available Option

This adage highlights the *Ps* of *process*, *persistence*, *patience*, *perspective*, *pertinence*, and *presence*. To create knowledge, students engage in a *process* of disciplined inquiry. When presented with a question or problem, begin to search for the perfect disciplined inquiry design to answer the question or solve the problem. However, understand that the perfect design rarely, if ever, exists. Practice *persistence*, *patience*, and an objective *perspective* to help inform the continued identification and evaluation of potential designs; then, select the solution that is both feasible and *pertinent* to the question or problem in focus. Think critically. Think productively. Allow resonance with thought that is relevant to the context of the inquiry; let go of incessant preoccupations of false awareness and irrelevant thinking. Remain *present* throughout the entire *process* to help empower confidence in your ability to determine if you should continue to build the perfect design or reposition your approach to conceptualize a less than perfect design that might be more appropriate for the context.

When the Wait is Inevitable, be Patient…Wait

This adage highlights the *Ps* of *process*, *patience*, and *presence*. Timing and appropriate pace are critical to ensure that you advance through your journey at the optimal speed. Allow yourself to move forward at the pace that is right for you. At times you will be weighted down with the burden of a *process* that does not flow in alignment with the swiftness of your expectations. Rushing things in excess of the pace in which they were meant to unfold inhibits the value of your doctoral *processes* and outcomes. To optimize the richness of your experience, remain *present* to the *process* to ensure that you are contented in the waiting when the timing is right for you to be *patient*.

When You Stop Trying to Keep Up, That's When You Get Ahead

This adage highlights the *Ps* of *people* and *presence*. Paying attention to the behaviors and successes of the *people* encountered along your journey contributes to the cultivation of your own successes; however, incessant attempts to keep up with the successes of *people* lining your path, such as your classmates and colleagues, positions you to place excessive focus on what they are doing instead of on what you are doing. Keeping up is tedious and often leads you along a path that is not meant for you, resulting in discontent, distress, and less than optimal outcomes. Look to your classmates and colleagues for guidance, lessons, and inspiration, but refrain from meticulously modeling your approach to success after theirs. Undue comparisons of yourself against others distract the quality of attention that could otherwise be dedicated to the development of your truest self and scholarly capacities. When you are *present* to how and where the innermost essence of your being aligns with your doctoral journey, you walk an authentic path that naturally optimizes your own successes and satisfaction.

The Direction You Travel is More Important Than the Simplicity of Your Path

This adage highlights the *Ps* of *presence* and *persistence*. Although doctoral education is outlined by credit requirements and a plan of study, the journey can often feel like a bumpy and curvy maze that sometimes seems to lead you backwards or off-track. Be *present* to the complexities of your journey to help ensure awareness that the seemingly disruptive path is ultimately leading you in the right direction. *Presence* will enable you to find faith in your frustrations and confidence in your confusions, empowering you to *persist* through the most difficult challenges that emerge along pathway to new knowledge and *perspective*. The doctoral journey requires adequate levels of *persistence* to trudge through the rigor and uncertainty that inevitably surface throughout the duration of the pursuit. What might seem to be the wrong direction at first glance might actually be the direction that resonates with the deeper essence of your truest self and goals. Choosing to take a straight and smooth path because it is easier and more appealing in the moment could lead to a dead end with empty outcomes and little sense of accomplishment. Take the path that aligns with your authentic self, even if it does not seem as simple in the moment.

To Live a Life of Satisfaction, Put Your Inspirations Into Action

This adage highlights the *Ps* of *presence* and *persistence*. Your doctoral journey provides opportunities to operationalize your inspirations. Inspiration is the source of your most meaningful work. Be *present* to your inspirations. Embrace them as they enter your consciousness, allow them to resonate with you, and *persistently* put them into action. If you feel a sense of inspiration to complete an assignment with a focus that is not common to your typical work, *persistently* strive to fulfill the requirements your assignment in alignment with your inspired focus. If you feel a sense of inspiration to contribute to a discussion in a manner that is

not common to your usual contributions, then share your inspired contribution. Inspired voices derive from the heart and add significant value to the assignments, discussions, and other experiences along your journey. Not only does acting on inspirations contribute value to the context in which you interact, it also prevents the burden of regret that could follow a decision to reject or disregard your inspirations.

Implications for Researchers

Each manuscript led to recommendations for future research. The *P Model of Doctoral Success* begged for research that will offer insight toward the levels at which any single factor, or combination of factors, impact(s) measurable outcomes of doctoral education success. The autoethnographic study called for subsequent autoethnographic research, research with additional participants to further explore the meanings of the themes that surfaced through the study, and research to gain a better understanding of the extent to which students value and resonate with written, oral, and other reflective processes. The passion study suggested that future research directions could warrant a longitudinal design or an expanded sample to include attrited students and students at bachelors and masters levels of education, as well as research that would begin to explore whether passion for a topic of research and passion for the practice of research impact doctoral education success at different levels.

In terms of the *P Model of Doctoral Success*, future research could be conducted to determine the extent to which success factors, which have been primarily informed by qualitative literature, quantifiably impact doctoral education success. Further research could be conducted to establish a better understanding of the interplay among the basic, internal, external, and operational factors (e.g. How do the *Ps* impact one another? Or, do internal factors have an impact on external factors or vice versa?). These types of studies would require the

identification, adaptation, or creation of scales relevant to each factor of success, similar to the means by which the *Passion Scale* was adapted to measure passion for research in the third manuscript of this disquisition. Finding, adapting, or creating the right scales would be beneficial for studies requiring regression or path analyses.

Other research framed by the *P Model of Doctoral Success* could include studies to measure the perceived importance of the factors of success through student, graduate, and faculty perspectives. Such research, which could be informed by Q-methodology, would help determine the extent to which each factor is considered important and whether gaps exist in the perceived levels of importance among faculty, students, and graduates. Research that makes transparent the perceptions of factor importance through faculty and graduated student lenses could provide current students with knowledge that would enable them to direct purposive, appropriate levels of focus and effort toward each factor, supporting their capacity to endure the doctoral journey though degree completion.

In terms of the autoethnographic manuscript informing future research, subsequent studies could include an autoethnographic account of my doctoral journey spanning the time period from my decision to apply for admission through program completion. It could further serve as a framework for providing students with opportunities to pursue semester-long autoethnographic experiences in which they write and interpret their reflections according to a single writing prompt at the beginning of the term. Replicating the methods and topic of this study could provide students with better understandings of their personal interpretations of reflective scholarship, potentially leading to enhanced positioning of themselves to pay closer attention to, and take prompter action upon, the processes, domains, and/or other themes of knowledge creation. Findings from subsequent reflective scholarship autoethnographic studies,

as well as findings form other types of reflective scholarship research could help Graduate-level administrators and faculty refine programs to ensure conduciveness for knowledge creation.

The autoethnographic manuscript presents my personal interpretations of the themes that emerged; however, future research with multiple participants would be required to capture a clearer image of the academy's understanding of the domains and process of knowledge creation and what it means to be a reflective scholar. Although I realized benefits through writing reflections during the study, additional research would be required to determine the extent to which written reflection would be effective for others seeking new knowledge and perspective.

Having a better understanding of the extent to which other forms of reflection (e.g. oral reflection) are valued by students and support the creation of new knowledge and perspective would also benefit the academy, as different types of students likely vary in the levels at which they grow through and resonate with different types of reflective processes. Such research could help faculty differentiate reflective assignments according to the mode of reflection that is most appropriate for developing each student's capacity as a knowledge creator. Additional questions to guide research stemming from this study could include the following: What types of uncertainties do students encounter during doctoral education? To what extent do uncertainties impede or support progress toward degree completion and knowledge creation? What types of strategies do students employ to effectively work through their uncertainties?

In terms of the passion study, future research would be necessary to enhance understanding of how *harmonious passion* and *obsessive passion* are developed to reach levels that align with levels exhibited by Ph.D. students and alumni. Although significant differences did not exist between groups at various stages of doctoral education, there appeared to be a slight upward rise in both types of passion for groups progressively representing later stages of their

doctoral journeys. Researchers might consider broadening the sample scope to include undergraduate and masters level students in attempt to better understand when and how passions for research are developed. Improved understandings of passion for research development could prompt enhanced cultivation of passion for research through undergraduate and masters programs preparing students for future doctoral endeavors. Such research could include variables assessing research exposure in hopes of better understand whether research exposure impacts the development of passion for research. Although cross-sectional designs could help lead to answers, longitudinal designs following students for several years could lead more reliable findings.

Researchers might consider conducting similar studies that would also include students lost to attrition. Because degree completion is a desired outcome of doctoral education, it would be helpful to know if levels of passion for research are significantly different for attrited students. Being that the present study does not include a subgroup of attrited students, and not knowing which students in the current study will leave their programs prematurely, if any, it is difficult to draw inferences relevant to the role that passion for research might play in doctoral education attrition.

Additional directions for research might also include studying passion for the topic of research. Passion for a research topic could potentially be studied by triangulating the methods of the current study with an adapted *Passion Scale* instrument, similar to those used in previous ideological passion studies (Rip et al., 2012). Research questions might ask whether passion for the topic of research impacts outcomes of doctoral success and, if it does have an impact, whether passion for the practice of research and passion for a topic of research impact outcomes of doctoral education success at different levels.

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Implications for Practitioners

Each manuscript led to implications for practitioners. In terms of the *P Model of Doctoral Success*, the proposed definition of success could serve as a common root from which administrators, faculty, and advisors could cultivate discussions and decisions impacting student success in doctoral education. The *P Model of Success* framework could serve as a conceptual model for advisors to use when helping students make purposeful decisions to optimize success or as a supplemental framework for administrators to reference when establishing and/or reviewing doctoral program admission standards. Further, the reflection questions proposed for each factor could activate this model as a reflective tool for potential students to consult when contemplating application to doctoral programs or for current students to evaluate the degree to which various factors of success support their desired personal and professional outcomes.

In terms of the autoethnographic manuscript, the study helped me gain a better understanding of my own interpretations of reflective scholarship, enhancing my capacity as a knowledge creator through keener attention toward, and action upon, the processes and domains of knowledge creation. As a vehicle that transported me from a seeming point of nowhere to a place of somewhere, the autoethnographic study empowered me to conceptualize research questions, transform my worldview, enhance self-awareness, and trace the origins of my thoughts and beliefs. Faculty may consider presenting students with opportunities to engage in similar types of autoethnographic processes in which they would write and interpret their reflections according to a single writing prompt presented at the beginning of an academic term. Such experiences could empower students with creative confidence and process-oriented faith that would enable them to cultivate something meaningful from a seemingly arbitrary starting point.

In terms of the passion study, the findings add to a quantitative frame of reference from which faculty and administrators can make decisions that contribute to the cultivation of passion for research. Results from the question asking whether *harmonious passion* and *obsessive passion* were significant predictors of knowledge creation and dissemination provide quantitative support for the importance of passion for research. As such, the findings may add a point of data to the triangulation of information that faculty could utilize when conveying the importance of passion for research to students. Ph.D. admissions committees may consider administering the *Passion Scale* as part of the student application process as a means to better gauge whether applicants possess levels of passion consistent with current students and alumni. They may further consider making the *Passion Scale* or a similar instrument available as an online assessment tool to help potential applicants gain a better understanding of whether they exhibit levels of passion for research that would be suitable for a successful doctoral journey.

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APPENDIX A. IRB APPROVAL

NDSU NORTH DAKOTA
STATE UNIVERSITY

Thursday, May 09, 2013   FederalWide Assurance FWA00002439

Chris Ray
School of Education
216A FLC

Re: IRB Certification of Exempt Human Subjects Research:
       Protocol #HE13252 , "The passion factor of doctoral education success: The role of passion in
                            knowledge creation"

Co-investigator(s) and research team: **Nathan Anderson**

Certification Date: 5/9/2013   Expiration Date: 5/8/2016
Study site(s): **NDSU**
Funding: **n/a**

The above referenced human subjects research project has been certified as exempt (category # 2) in
accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, *Protection of Human
Subjects*). This determination is based on the protocol (received 5/6/2013) and consent information
(received 5/8/2013).

Please also note the following:
- If you wish to continue the research after the expiration, submit a request for recertification
  several weeks prior to the expiration.
- Conduct the study as described in the approved protocol. If you wish to make changes, obtain
  approval from the IRB prior to initiating, unless the changes are necessary to eliminate an
  immediate hazard to subjects.
- Notify the IRB promptly of any adverse events, complaints, or unanticipated problems involving
  risks to subjects or others related to this project.
- Report any significant new findings that may affect the risks and benefits to the participants and
  the IRB.
- Research records may be subject to a random or directed audit at any time to verify compliance
  with IRB standard operating procedures.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.
Sincerely,

Kristy Shirley

Kristy Shirley, CIP, Research Compliance Administrator

APPENDIX B. SURVEY AND PASSION SCALE

Demographic Section

Gender
- Male
- Female

Current age: (category)
- <21
- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- >70

Academic College through which you earned a Ph.D. (7 NDSU colleges):
- Agriculture, Food Systems, and Natural Resources
- Arts, Humanities, and Social Sciences
- Business
- Engineering and Architecture
- Human Development and Education
- Pharmacy, Nursing, and Allied Sciences
- Science and Mathematics
- Other

Employment status during pursuit of your doctoral degree coursework (mark all that apply):
- Full time
- Part time
- Not employed

Employment status while completing your dissertation (mark all that apply):
- Full time
- Part time
- Not employed

Mark the term you began coursework for your Ph.D. program:
- Fall
- Summer
- Spring

Enter the 4-digit year you began coursework for your Ph.D. program (YYYY): _____

Mark the term you completed coursework for your Ph.D. program:
- Fall
- Summer
- Spring

Enter the 4-digit year you completed coursework for your Ph.D. program (YYYY): _____

Mark the term you completed the comprehensive exam(s) for your Ph.D. program:
- Fall
- Summer
- Spring

Enter the 4-digit year you completed the comprehensive exam(s) for your Ph.D. program (YYYY): _____

Mark the term you began working on your dissertation:
- Fall
- Summer
- Spring

Enter the 4-digit year you began working on your dissertation (YYYY): _____

Mark the term you defended your dissertation:
- Fall
- Summer
- Spring

Enter the 4-digit year you defended your dissertation (YYYY): _____

Mark the term you graduated from your Ph.D. program:
- Fall
- Summer
- Spring

Enter the 4-digit year you graduated from your Ph.D. program (YYYY): _____

Knowledge Creation Section

Enter the number of REFEREED publications you have authored or co-authored since the term you were admitted to your Ph.D. program: _____

Enter the number of NON-REFEREED publications you have authored or co-authored since the term you were admitted to your Ph.D. program: _____

Enter the number of REFEREED oral presentations you have delivered or co-delivered since the term you were admitted to your Ph.D. program: _____

Enter the number of NON-REFEREED oral presentations you have delivered or co-delivered since the term you were admitted to your Ph.D. program: _____

Enter the number of REFEREED posters you have presented or co-presented since the term you were admitted to your Ph.D. program: _____

Enter the number of NON-REFEREED posters you have presented or co-presented since the term you were admitted to your Ph.D. program: _____

Passion Scale Section

While thinking of the activity of doing research and using the scale below, please indicate your level of agreement with each item.

Not Agree at All	Very Slightly Agree	Slightly Agree	Moderately Agree	Mostly Agree	Strongly Agree	Very Strongly Agree	
1	2	3	4	5	6	7	

	1	2	3	4	5	6	7
1. Doing research is in harmony with the other activities in my life.	1	2	3	4	5	6	7
2. I have difficulties controlling my urge to do research.	1	2	3	4	5	6	7
3. The new things that I discover doing research allow me to appreciate it even more.	1	2	3	4	5	6	7
4. I have almost an obsessive feeling for doing research.	1	2	3	4	5	6	7
5. Doing research reflects the qualities I like about myself.	1	2	3	4	5	6	7
6. Doing research allows me to live a variety of experiences.	1	2	3	4	5	6	7
7. Doing research is the only thing that really turns me on.	1	2	3	4	5	6	7
8. Doing research is well integrated in my life.	1	2	3	4	5	6	7
9. If I could, I would only do research.	1	2	3	4	5	6	7
10. Doing research is in harmony with other things that are part of me.	1	2	3	4	5	6	7
11. Doing research is so exciting that I sometimes lose control over it.	1	2	3	4	5	6	7
12. I have the impression that doing research controls me.	1	2	3	4	5	6	7
13. I spend a lot of time doing research.	1	2	3	4	5	6	7
14. I like doing research.	1	2	3	4	5	6	7
15. Doing research is important for me.	1	2	3	4	5	6	7
16. Doing research is a passion for me.	1	2	3	4	5	6	7
17. Doing research is part of who I am	1	2	3	4	5	6	7

CODIFICATION (*codification not visible to survey participants*)
2, 4, 7, 9, 11, 12 Obsessive Passion
1, 3, 5, 6, 8, 10 Harmonious Passion
13 - 17 Passion Criteria

APPENDIX C. EMAIL RECRUITMENT SCRIPT

To: [current NDSU Ph.D. students and NDSU Ph.D. alumni]
From: nathan.c.anderson@my.ndsu.edu
Subject: Ph.D. Student and Alumni Survey Request: Help Improve Doctoral Education

Greetings NDSU Doctoral Community!

Are you willing to help a current NDSU doctoral student by sharing your own doctoral degree experiences? You are invited to participate in an online survey that is expected to only take about 10-15 minutes to complete.

My name is Nathan Anderson and I am a current doctoral student in the NDSU School of Education. My dissertation study seeks to understand the role of "passion for research" in the achievement of doctoral education success, and I would greatly appreciate your assistance.

For more information, or to participate in the study, please click the following link:

http://www.ndsu.edu/pubweb/~chrray/passion/

APPENDIX D. INFORMED CONSENT WEBPAGE SCRIPT

My name is Nathan Anderson and I am a current doctoral student in the NDSU School of Education. My dissertation study seeks to understand the role of "passion for research" in the achievement of doctoral education success, and I would greatly appreciate your assistance.

Thank you for considering participation in this study. We hope to gain a better understanding of the impact of passion on knowledge creation and acquire insights into the levels of passion that exist at various stages during and following the doctoral education journey. Such understanding and insights could help inform improvements to a variety of facets of doctoral education, including instruction, advising, and overall programming.

The study will involve completing an online questionnaire, which includes demographic items, items related to your passion for research, and additional questions about your scholarly productivity. Your participation is entirely voluntary, and you may change your mind or quit participating at any time, with no penalty; however, your assistance would be greatly appreciated in making this a meaningful study. It should take about 10-15 minutes to complete the entire process.

We may publish the results of this study; however no research information will be reported in association with your name, which will not be collected, or in any other way that will allow you to be identified. To further protect your confidentiality, you are welcome to skip any demographic items or other questions that you believe could allow you to be identified.

If you have any questions regarding this survey, please contact Nathan Anderson at (701) 721-9272 or Nathan.C.Anderson@my.ndsu.edu or Chris Ray, PI, at (701) 231-7417 orChris.Ray@ndsu.edu. If you have questions about your rights as a research volunteer or to report a complaint, you may contact the Institutional Review Board at (701) 231-8908 or toll-free at 1-855-800-6717 or NDSU.IRB@ndsu.edu.

Again, thank you for participating!

Are you a Current Ph.D. student or a Ph.D. alum?
Note: By clicking on either of the links below, you indicate your willingness to participate in this study.
•   Yes, I Am a Current Ph.D. Student or Alum

•   No, I am Not a Current Ph.D. Student or Alum

NDSU IRB Approval
IRB #: HE13252
Approved: 5/09/2013
Expires: 5/08/2016