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Increasing Doctoral Student Completion Rates Within the College of Humanities and Sciences at Virginia Commonwealth University

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A capstone project submitted in partial fulfillment of the requirements for the degree of Doctor of Education in the Department of Educational Leadership at Virginia Commonwealth University.

by

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Abstract

INCREASING DOCTORAL STUDENT COMPLETION RATES WITHIN THE COLLEGE OF HUMANITIES AND SCIENCES AT VIRGINIA COMMONWEALTH UNIVERSITY

By Michaela Ranaldi Bearden and Victoria A. Keel

A capstone project submitted in partial fulfillment of the requirements for the degree of Doctor of Education in the Department of Educational Leadership at Virginia Commonwealth University

Virginia Commonwealth University, 2020.

Capstone Chair: Tomika L. Ferguson, Ph.D., Department of Educational Leadership

Research on doctoral education primarily focuses on broad fields of study and general attrition. Often overlooked, is an examination of the student at each stage of their program and the challenges they face that can potentially lead to stopping out. This capstone project explored the doctoral student experience within the Department of Humanities and Sciences at Virginia Commonwealth University. A mixed method study via an online survey was utilized to gather data about the student experience on their path towards candidacy. Quantitative and qualitative data was analyzed through Chi-square tests and thematic coding to identify answers to each research question. This paper aims to inform students, faculty, and administrators, of common attrition points on a doctoral student's path to completion. In addition, this research aims to use the data to identify interventions that will support doctoral students in their journey and increase retention rates.

Key Words: retention, attrition, doctoral program, doctoral degree, completion, barriers, considerations linked to leaving a doctoral program, faculty support, personal circumstance, stages of degree program, factors impacting attrition, resources, avenues of support

Chapter 1: Introduction

Introduction

Doctor of Philosophy degrees exude an expectation of scholastic aptitude that cultivates respect (Van de Schoot et al., 2013). The degree is pursued by students due to the prestige and credibility resulting from rigorous programs, the concept of attaining a terminal degree, and the knowledge obtained that allows contributions to their own research to respective fields of study (Rudolph, 1990; Sanders & Landrum, 2012). Students pursue doctoral degrees because they understand the degree is a requirement for faculty and research appointments within environments of higher education. Additionally, students anticipate faculty positions becoming available as the Baby Boomer generation retires (Sowell et al., 2008).

The course of doctoral education is arduous, like that of a mountain terrain; entailing a three to ten-year commitment including coursework, supervision, writing, and research (Sowell et al., 2008). Most students graduate within seven years (Sowell et al., 2008). However, for the past several decades, nationwide, only half of the students who begin doctoral programs obtain their degree (Bowen & Rudenstine, 1992; Crede & Borrego, 2014; Sowell et al., 2008; Sowell et al., 2008a). Attrition is attributed to a myriad of reasons falling into the following categories: personal, academic, and financial (Gardner, 2008a). Currently, there is scant data describing when doctoral students leave their program and why they leave. Uncovering the data could contribute to a decrease in attrition for doctoral programs and promote doctoral student success and well-being.

Problem Statement

There is minimal data describing when doctoral students leave a program or explanation as to why they leave. Nationally, 50% of doctoral students enrolled in universities in the United

States earn a doctoral degree (Di Pierro, 2012; Ehrenberg et al., 2007; Gardner, 2008; Jairam & Kahl, 2012; Van der Haert et al., 2014; Martinez et al., 2013; West et al., 2010). Further, information concerning student demographics and doctoral graduation rates are lacking. At Virginia Commonwealth University (VCU), the graduation rate for students pursuing a Ph.D. is higher than the national average, at 70%. VCU's Graduate School actively seeks to increase this retention rate. Therefore, this study, centered within the College of Humanities and Sciences at VCU, aimed to improve doctoral graduation rates by understanding the student experience, identifying what challenges students face, and identifying the needs students have during each stage of the degree conferral process.

Study Purpose and Research Questions

The purpose of this study was to improve understanding of doctoral students' experiences during each stage of their program. In doing so, the researchers identified interventions and opportunities in direct response to doctoral students' challenges. Data collected can improve their experiences, and ultimately decrease attrition in the VCU College of Humanities and Sciences.

Research Questions and Hypothesis

This study explored one broad question and sought to answer two subsequent questions. The questions for the study are as follows:

1. At what stage are doctoral students most likely to consider leaving a doctoral program in the humanities and sciences at VCU?
    a. What factors impact attrition in doctoral programs in the humanities and sciences at VCU?

b. What resources or avenues of support do doctoral students need to successfully complete a doctoral program in the humanities and sciences at VCU?

As the study was a mixed-method design, one hypothesis was that doctoral students in the humanities and sciences at VCU were more likely to leave their program during specific stages. A second hypothesis suggests there were specific factors that impacted attrition at each stage of a doctoral degree. The final hypothesis posited that, doctoral students need specific resources for academic and emotional support to successfully complete each stage of their doctoral program.

Research Objectives

The objective of the research was to explain doctoral students' experiences so as to offer interventions to foster doctoral student success and decrease attrition. Success was defined as degree completion and barriers were considered obstacles that impede students from obtaining their doctoral degree. Interventions were explored and identified to address specific barriers. Concepts included the following:

- Stages within a doctoral program;
- Reasons students leave doctoral programs;
- Internal and external factors that impact student success;
- Resources students utilize that prevent them from leaving a program;
- Resources students need to successfully complete a program; and
- How doctoral students perceive support.

Nature of the Study

A mixed-method design explored when and why students considered leaving doctoral programs. An initial document analysis uncovered what doctoral programs aim to achieve and how they intend to meet those aims. The initial overview of programs provided a frame for evaluating what is offered and what actually occurs.

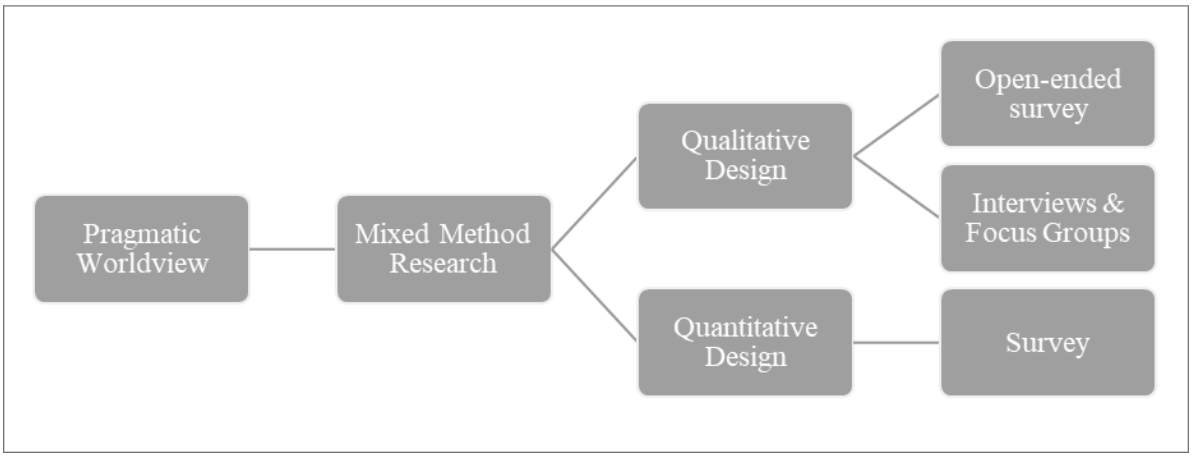
A survey instrument was developed and administered to currently enrolled doctoral students and administered to doctoral students who were previously enrolled but who have not obtained their degree. The online survey was sent to each currently enrolled doctoral student in the College of Humanities and Sciences at Virginia Commonwealth University as well as to each previously enrolled doctoral student in the College of Humanities and Sciences at Virginia Commonwealth University. Statistical survey data was analyzed quantitatively and qualitatively. Specific details of this study related to design and methods are detailed in Chapter III.

Conceptual Framework

The study utilized a pragmatic approach for the research which allowed for a complex perspective to heed a broad outcome (Creswell & Creswell, 2018). The pragmatic approach is *problem-centered* (Creswell & Creswell, 2018). Thus, it was consistent with the goals of the study; to identify when doctoral students leave their programs and understand barriers preventing doctoral students from completing their degrees (Creswell & Creswell, 2018). As indicated in Figure 1, the study implemented a pragmatic worldview and utilized both qualitative and quantitative data, or a *mixed method design* to address the research questions, contributing to the depth of research and findings.

Figure 1

Overall Research Approach



Assumptions

When conducting a mixed methods study, assumptions and limitations naturally occur. For example, when disseminating an online survey, it was anticipated that the student corresponding to the email address would respond to the survey. Additionally, it was expected that students would respond openly and honestly. Researchers assumed students would engage and maintain focus as they responded to each survey question.

For the qualitative portion of the survey, it was expected that students would thoughtfully, openly, and honestly provide responses. In opening up the research to program directors overseeing students, it was assumed they would be willing to be active participants in the research and provide their professional opinion of the doctoral student experience.

Scope and Delimitations

The scope of this study included a large, urban university. Thus, the research may or may not be generalizable to universities of varying sizes or location descriptors. Generalizability across doctoral students was enhanced as this study considered the experiences of doctoral students in the humanities and sciences. Additionally, the qualitative data from the document analysis provided a more comprehensive picture of what doctoral programs aim to do and what

they actually do. The perspectives of doctoral students enrolled at different stages and previously enrolled doctoral students, provided an overview of doctoral programs from multiple angles. With any research, it is advantageous to consider the appropriateness of application for the results from this study for various other institutions of higher education.

Significance of the Study

Much of the current research related to attrition is limited to undergraduate students and strategic enrollment management (Hossler & Kalsbeek, 2013). Similarly, despite a salient link between retention and student satisfaction, there is minimal research describing the relationship (Schreiner, 2009). Research specific to doctoral students' experiences and attrition broadens knowledge pertaining to attrition and strategic enrollment management. Including doctoral students in the literature provides data to administrators responsible for allocating resources to different student populations. This research gives voice to the doctoral student experience, underscoring the importance of interventions to support this unique student body.

Doctoral student attrition has a significant financial impact on students and universities and can cost universities millions of dollars annually (Gardner, 2008a). For example, the University of Notre Dame found if they decreased doctoral student attrition by 10%, they would save $1 million a year in stipends (Gardner, 2008a). The financial impact on doctoral students individually can also be substantial with longstanding negative impact on students' lives (Gardner, 2008a). By identifying barriers to doctoral degree completion, institutions can develop successful interventions and increase doctoral student graduation rates, proving lucrative for institutions and economical for students.

Operational Definitions

Within the context of the study, the following definitions were utilized:

- *Attrition:* refers to students who enter a doctoral program but who do not complete the program they began (Denecke & Slimowitz, 2004)
- *Doctorate:* the highest degree that is given by a university ("Merriam-Webster," 2019); a degree that is oriented toward preparing students to make original intellectual contributions in a field of study that is not primarily intended for the practice of a profession (National Science Foundation, 2017).
- *Graduate enrollment management:* how institutions approach recruitment, student admissions, student support, retaining students, and graduating students from post-baccalaureate programs ("NAGAP," n.d.)
- *Strategic enrollment management:* not limited to graduate students but considers demand, "enhancing the academic profile of the student body," financial feasibility, student diversity, graduation rates, and revenue from tuition with competing demands across the university as it relates to allocation of resources (Hossler & Kalsbeek, 2013, p. 8)
- *Stage One (Coursework):* entails the first two-three years of a doctoral program during which time students are enrolled in classes (i.e. learning how to become researchers) (Bowen & Rudenstine, 1992)
- *Stage Two:* follows Stage One and includes a qualifying exam that students must pass to progress. Also, in this stage, students must select a dissertation topic and submit an approved prospectus (Bowen & Rudenstine, 1992)
- *Stage Three (Dissertation):* follows Stage Two and is the final stage in the doctoral program. During this stage, students are supervised as they research, write, and defend their dissertation (Bowen & Rudenstine, 1992)

- *Stop-out vs stay-out:* stop-out refers to students who leave a program but return, or do not make it immediately known of their intention to not return. Stay-out refers to students who stop-out and do not return (National Center for Education Statistics, 1998)

Organization of the Study

This quality improvement study is broken down into five chapters. Chapter I provided an overview of the study, identified the problems to be addressed, and detailed research questions, hypotheses, and objectives. Additionally, the conceptual framework was described along with assumptions as well as scope and delimitations, significance of the study, and operational definitions. Chapter II provides a review of current literature related to doctoral education in the United States, administration to include enrollment and admissions, factors that impact completion, factors that promote completion, and avenues for increasing doctoral degree completion. Chapter III describes the methodology utilized for the study. Chapter IV provides the process of obtaining the data while reviewing the findings. In closing, Chapter V details the researchers' recommendations for retaining doctoral students based on the data collected.

Chapter II: Review of Literature

Review of Literature

This literature review catalogues the history of doctoral education in the United States and looks distinctly at the role of the university and the role of the student in achieving a doctoral degree. By exploring the original intent of the doctoral degree and current trends, the researchers attempt to define how the university has adapted to the needs of today's student. By examining the student profile, the researchers identified external and internal factors contributing to academic success, or failure to complete. The literature review compiled the experience of the doctoral student in an attempt to uncover reasons behind high attrition rates within doctoral education.

Doctoral Education in the United States

In 2017, 181,000 doctoral degrees were conferred in the United States (National Center for Educational Statistics, 2019). Doctoral degrees included Doctor of Philosophy, Doctor of Education, Doctor of Medicine, Doctor of Dental Surgery, and Doctor of Jurisprudence. Doctoral education is an investment of three to ten years of coursework, supervision, writing, and research, with most students graduating by year seven (Sowell et al., 2008).

A student's path to completion is met with many challenges. Attrition rates within doctoral education are high, with approximately 50% of students dropping out (Sowell et al., 2018; Sverdlik et al., 2018). Internal and external factors lead to attrition, and for some students, multiple factors contribute to incompletion (Sverdlik et al., 2018). Julie Gould (2015), in *How to Build a Better Ph.D.*, discussed how the entire field faces criticism for high attrition rates, with the production of "more Ph.D.'s than there is demand for them in research positions" (p.

22). With multiple factors affecting student success, and attrition rates that cost both students and universities substantial investment, the researchers aim to explore the history of doctoral education and the factors that contribute to either points of completion, or points of attrition.

Inception

In 1847, in New Haven, Connecticut, scholars Benjamin Silliman, Jr. and John P. Norton developed new special interest areas within higher education, initiating the start of a new era in America; the pursuit of the Doctor of Philosophy (Rudolph, 1990). Bourner, Bowden, and Laing (2001) indicate the first ever Doctor of Philosophy (Ph.D.) in terminal teaching was awarded in 1150, in medieval Paris. In 1861, Yale awarded the first Ph.D. from an American University, emphasizing differences in an undergraduate and graduate education (Rudolph, 1990). Yale awarded three doctoral degrees that year, all within the Department of Philosophy and the Arts (Rudolph, 1990).

Between 1861 and 1876, twenty-five institutions developed Ph.D. programs and together, awarded forty-four Ph.D. degrees (Rudolph, 1990). The movement set a precedence within the field of higher education and "the notion of serious study beyond the B.A. was being widely established" (Rudolph, 1990, p. 335). By the 1890's, professors holding the prestigious Ph.D. designation began receiving faculty appointments (Rudolph, 1990).

According to elite schools, professors with Doctorates in Philosophy were more credible, respected in their field, and better trained (Rudolph, 1990). In the early 1900's, some American universities began requiring Ph.D. status from their professors in an effort to distinguish their establishment from other, less rigorous programs. The Ph.D. became a symbol of "academic respectability, the mark of professional competence, the assurance of a certain standard sameness of training, experience, and exposure to the ideals" (Rudolph, 1990, p.

395). The exclusivity of the Ph.D. became something for those in higher education to strive for. By 1988, over 350 institutions offered doctoral programs and conferred more than 33,000 degrees (Bowen & Rudenstine, 1992). Today, colleges and universities continue to expand fields of study within, with the United States leading the way.

Current Trends

Today, the United States is the model for doctoral education (Sowell et al., 2008). The Doctor of Philosophy (Ph.D.) is a terminal degree that carries prestige, producing scientific output and improving teaching efforts (Van de Schoot et al., 2013). Students are drawn to the degree, interested in contributing their own research to their chosen field of study (Sanders & Landrum, 2012). In addition, retirements from the 'baby-boomer' generation will create approximately 55 million job openings over the next decade, creating a demand for an advanced workforce with graduate level education (Sowell et al., 2008). Economic opportunities and promise of job openings make the path towards a graduate degree enticing. However, no two doctoral programs are alike. Doctoral programs come in different sizes, and offer different levels of support and autonomy. The institution selection process might be the most important choice a doctoral student makes, weighing variables such as size, quality, cost, and pathway to completion.

Size and Quality

In the 1950's, the push to expand doctoral programs came from economic forces, market demand, and the government (Bowen & Rudenstine, 1992). However, a lack of forethought prohibited the ability of universities to consider long term effects of mass growth. For example, in 1958, the National Defense Education Act (NDEA) was created to (a) increase the number of college and university teachers and, (b) increase the number of quality doctoral programs

amongst a broader geographic region (Bowen & Rudenstine, 1992). As a result of the NDEA, new doctoral programs emerged, yet over time, the funding to support new programs dwindled affecting program quality and student support (Bowen & Rudenstine, 1992). Lack of funding is a potential factor in attrition rates, leading to a lack of adequate support for doctoral students. Therefore, understanding the size and quality of a program, along with the available resources for student success is a critical point of distinction.

There is an ongoing debate around the ability of institutions to maintain quality with a critical mass of doctoral programs (Bowen & Rudenstine, 1992). Bowen and Sosa (1989) questioned whether universities could benefit by focusing on select graduate programs, instead of large-scale operations. To begin a program, large financial investments must be made (Bowen & Rudenstine, 1992). Therefore, there is substantial pressure to sustain such programs, even when they fall below expectations and quality suffers (Bowen & Rudenstine, 1992).

Program quality is difficult to measure because no two programs are alike. Therefore, analyzing program requirements as a metric to measure quality is inherently difficult (Golde, 1998). Bowen and Rudenstine (1992) recommend reviewing the requirements of the Ph.D., exploring and comparing catalogs, and speaking with faculty and students, to examine program quality.

Those who wish to pursue their Ph.D. can face significant expenses measured in financial terms, and also in personal time and effort. Additionally, research suggests that only 50% of all U.S. doctoral students complete their degree (Bowen & Rudenstine, 1992). It is imperative to explore the financial implications of a Ph.D. program and statistics on enrollment, admissions, and completion.

Cost

The expenses associated with doctoral programs are measured not only in financial terms, but also in terms of time and effort put forth by the student, the professor, and the university (Sowell et al., 2008). Universities are often forced to consider how to afford strong doctoral programs as funding options wane. Managing attrition and completion are key considerations, tied to current and future funding opportunities (Shariff et al., 2015).

While it is difficult to assess the average annual cost of doctoral programs due to inconsistent metrics, the National Center for Educational Statistics reported the average graduate tuition and required fees in degree-granting postsecondary institutions for 2014-2015 at $17,385.00 (U.S. Department of Education, 2015). This average combines public and private (for profit and not-for-profit) universities weighted by fall full-time graduate enrollment (See Appendix A). The figure excludes doctoral students in professional practice programs. With an average completion rate of 7.5 years, that places the average financial expense of graduate school at approximately $130,387.50, without interest or adjusting for inflation (U.S. Department of Education, 2015). With half of the students enrolled and not graduating, that is a significant burden of debt to carry without a degree in hand. Recognizing this burden, administrators place time and effort on understanding the enrollment and admissions process. They also place focus on program design, oversight, and university culture (Bowen & Rudenstine, 1992).

With the burden of cost, the traditional profile of an individual pursuing a doctoral degree was a privileged White male. Today, although costs are still high, access to doctoral education has diversified the field. Increasingly, minorities including women and people of color are earning degrees (Offerman, 2011).

Student Profile

Today, doctoral students are a collection of diverse cultures and backgrounds, aspiring to earn a degree. However, the traditional doctoral student was a privileged White male (Gardner, 2009). As cited in *The Profile of the Nontraditional Doctoral Degree Student*, that demographic held constant until 1960 when federal aid and more diverse program offerings became available (Offerman, 2011). In 2001-2002, Gardner (2009) noted a historic shift with women receiving more degrees than men. Minorities earning degrees experienced similar growth in the 2000's. According to Gardner (2009), minorities saw a 167% increase in earned doctoral degrees between 1939 and 2005. Between 2006-2007, African American doctorates and White Hispanic doctorates increased 131% and 140%, respectively, "indicating the greatest gains in doctorates earned by minorities" (Offerman, 2011).

Offerman (2011) places students into two distinct groups, traditional and non-traditional (Table 1). Each with unique expectations and demands, the diverse student profile creates challenges when attempting to support student success (Offerman, 2011).

Table 1

Characteristics of Traditional and Nontraditional Doctoral Students

Traditional Students	Nontraditional Students
White, male, full-time study, twenty-two to thirty years old, single, childless, preparing to be research faculty, working in assistant role, immersed in study, funded through tuition waiver or stipend	Diverse, increasingly female, part-time study, over thirty, married, with children or dependent parents, numerous purposes, increasingly professional research doctorate (Ed.D.), career outside their program, study in addition to career and family, self-funded

Note. From Offerman, 2011.

The student profile affects faculty-student relationships with nontraditional students exploring career paths that are different from the paths of their advisors, creating a lack of mutual

understanding (Offerman, 2011; Sverdlik et al., 2018). The profile of a nontraditional student suggests their struggle with balance, challenging programs to consider program structure and support in a way that was not necessary with the traditional student (Offerman, 2011).

In 2017, the *National Science Foundation* presented their findings of 2015 Doctorate recipients from U.S. Universities. The annual report draws from a survey and calls attention to major trends within doctoral education, with specific regard to doctoral recipients (National Science Foundation, 2017). The 2015 trends include an annual growth of earned doctorates, up 1.9% since 1975 (National Science Foundation, 2017). Related to foreign citizenship, "ten countries account for 71% of the doctorates awarded to temporary visa holders from 2005-2015" (National Science Foundation, 2017, p. 2). Since 2002, women have earned the majority of all doctorates awarded to U.S. citizens and over the past ten years, underrepresented minorities have seen a 71% uptick in earned doctoral degrees (National Science Foundation, 2017). The changing student profile impacts student completion, and is a factor in student enrollment and admissions decisions.

Enrollment, Admissions, and Completion

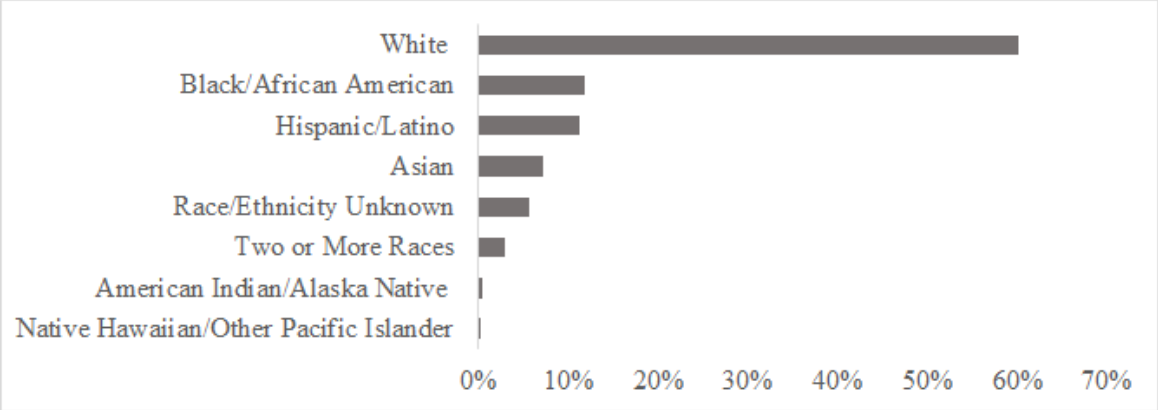
While there is a growing need for accurate data on Ph.D. attrition and completion rates, obtaining that data is difficult (Sowell et al., 2008a). Limitations include the differences of each university's tracking mechanisms, and accurately identifying students who stop out, withdraw, transfer, or stop pursuing their degree (Bowen & Rudenstine, 1992; Sowell et al., 2008a). However, accurate data can assist administration in identifying where students struggle in the admissions, enrollment, and completion process, providing opportunities to develop interventions and increase completion rates.

In the Fall of 2017, the Council for Graduate Schools released findings of a survey documenting applications, enrollment, and degree status of doctoral students. In 2017, institutions responding to the "CGS/GRE Survey of Graduate Enrollment and Degree received approximately 2.2 million applications requesting admission to graduate programs" (Okahana & Zhou, 2018, p. 11). This number included both graduate and doctoral requests for admission. Admissions is a competitive practice, with private and not for profit institutions generally more selective than public institutions (Okahana & Zhou, 2018). As a result, of all recorded responses, 28% of doctoral applicants were accepted for admission (Okahana & Zhou, 2018).

Fields of study varied, with the largest number of applicants seeking admission into business, engineering, and health sciences (Okahana & Zhou, 2018). Of the documented survey respondents, men and women were almost equally represented in doctoral programs, with women slightly ahead (Okahana & Zhou, 2018). Displayed in figure 2, U.S. citizens and permanent residents make-up the majority of first-time graduate enrollments, and international students constitute a large share of the full-time graduate population (Okahana & Zhou, 2018).

Figure 2

U.S. Citizen and Permanent Resident First-time Enrollment by Race/Ethnicity, Fall 2017



Note. From 2017 CSG/GRE Survey of Graduate Enrollment and Degrees, Table B.11.

When comparing admissions to completion, graduation rates are not demographically neutral (Sowell et al., 2008). Women and students of color have the largest 'failure to complete' rate across all accepted applicants (Sowell et al., 2008).

Fields of Study

Denecke and Slimowitz (2004) identify eleven broad fields of study within graduate enrollment, displayed in Table 2. The study reveals the number of applicants, accepted students, and enrolled students based on institutions responding to first-time enrollment questions for the Fall 2017 academic year. Based on the eleven fields of study, the Social and Behavioral Sciences program attracted the most applicants, while the field of Education accepted the largest number of applicants (Okahana & Zhou, 2018). Once accepted, the field of Physical and Earth Sciences enrolled the highest percentage of students, at 60% (Okahana & Zhou, 2018). Across all fields, 67.5% of students enrolled as full time, while 32.5% enrolled as part-time (Okahana & Zhou, 2018).

Table 2

Application and Enrollment by Broad Field, Doctoral Studies, Fall 2017

Broad Field	**Applied**	**Accepted Applicants**	**Enrolled**
Arts and Humanities	56,652	11,087	5,484
Biological and Agricultural Sciences	77,126	15,900	8,364
Business	24,065	3,459	4,359
Education	27,048	11,970	11,117
Engineering	100,841	25,037	10,391
Health Sciences	80,682	18,663	13,579
Mathematics and Computer Sciences	54,512	11,903	5,063
Physical and Earth Sciences	69,051	17,146	7,335

Public Administration and Services	3,780	1,094	996
Social and Behavioral Sciences	122,638	18,760	11,955
Other Fields	18,076	4,860	2,785

Note. From CGS/GRE Survey of Graduate Enrollment and Degrees.

Trends in graduate enrollment, specifically enrollment for doctoral seeking students, has flattened (Okahana & Zhou, 2018). Between 2012-2017, there was an uptick in doctoral degree production when compared to the number of graduate degrees awarded (Okahana & Zhou, 2018). However, "the number of master's degrees earned continues to far exceed the number of doctoral degrees conferred," raising questions about completion time and factors affecting completion (Okahana & Zhou, 2018, p. 18). Specifically, administrators are interested in identifying how best to support their doctoral students, increasing the likelihood of degree completion.

Time to Completion

Nationally, only half of doctoral students receive their degree, an attrition rate that has been consistent for over half a century (Bowen & Rudenstine, 1992; Crede & Borrego, 2014; Sowell et al., 2008; Sowell et al., 2008a). Schools struggle with not only completion rates, but also with timely completion (Geven et al., 2017). The average length of time for degree completion is between seven and ten years, and highly affected by field of study (Spronken-Smith et al., 2018). The Spronken-Smith et al. (2018) study of 30 institutions found "completion rates of just 46% after seven years and 57% after ten years" (p. 95).

A second study suggests the target time for completion is five years, noting candidates rarely complete in three (Stock et al., 2009). The median time to Ph.D. completion is 7.5 years after enrollment; a number that has changed only marginally over three decades (Geven et al., 2017). Exploring the highest cumulative ten-year completion rate, White students lead

completion at public institutions while Asian Americans lead at private institutions (Sowell et al., 2008). According to Offerman (2011), both groups are defined as nontraditional, citing that these students are often older, live off campus, and study part-time. Time to completion varies based on the individual student and their area of study. Examining the path to candidacy allows for the dissection of each stage of the process, identifying stumbling blocks and areas of concern.

The Path to Conferred Degree

Over time, the pursuit of the Ph.D. has evolved. In the 1960's, a strong demand for college teachers drove admissions requests upward, coupled with a dramatic rise in federal support for higher education (Bowen & Rudenstine, 1992). Increasing the number of individuals with a graduate education is a priority for our nation driven today by the needs of our future workforce (Sowell et al., 2008). A sought-after status with over 1.2 million applying for admission each year, the process of obtaining the degree is semi-structured and often times, a meticulous practice (Okahana & Zhou, 2018). A doctoral students' well-being decreases on their path towards completion (Sverdlik et al., 2018). Doctoral education can have a negative impact on society, straining relationships and finances, particularly among non-traditional students (Offerman, 2011; Sverdlik et al., 2018). Exploring the path to conferred degree and looking specifically for trends among non-completers allows administrators to discuss issues facing current doctoral students and develop interventions to support students entering the doctoral education system (Sverdlik et al., 2018).

The path to candidacy is explored in stages. First, program selection, followed by program structure. Structure varies by the program the student is enrolled in but generally

follows three distinct stages (a) coursework, (b) comps or qualifying exams and (c) candidacy or dissertation.

Program Selection

In their 2007 study, the Council of Graduate Schools placed a question on their exit survey asking enrolled students why they selected their particular degree program (Sowell et al., 2009). Overwhelmingly, 'faculty/program reputation' headed the list, with financial support mentioned by over half of the respondents (Sowell et al., 2009). At the bottom of the list, 'job placement' and 'program requirements' (Sowell et al., 2009). Selection of 'faculty/program reputation' aligns with the original purpose of a doctoral education, to prepare scholars to teach other scholars, and not graduate in order to work in a particular industry (Offerman, 2011). Students are less focused on their work post degree, and may select programs based on their expected experience during the pursuit of a degree, failing to plan for obstacles or to acknowledge how their lives may evolve while in pursuit.

Graduate school is a daunting experience (Bowen & Rudenstine, 1992). Students are balancing multiple responsibilities, preventing them from focusing solely on their doctoral education (Offerman, 2011). While traditional students spend the majority of their time with their research, a growing number of non-traditional students are working, caring for children and parents, and financing a portion or all of their program (Offerman, 2011). Selecting a strong program that aligns to the goals of the student is a critical step in the process, with students disengaging when the program becomes too overwhelming to manage (Offerman, 2011).

Research indicates that many students choose the wrong program and often leave school within the first year (Bowen & Rudenstine, 1992). New doctoral students report the first year of school as the most stressful (Golde, 1998). Students who leave graduate school early in their

program typically do so because they feel they did not select the program that was right for them (Bowen & Rudenstine, 1992). Coursework gives context to what they might expect in their field post-graduation and it triggers a response from the student and sometimes the faculty, that the choice to enroll was not the right choice (Bowen & Rudenstine, 1992). Understanding program structure becomes an integral part of fully appreciating the attrition process in doctoral programs and may contribute to identifying the placement of interventions to keep students enrolled.

Program Structure

As Bowen and Rudenstine (1992) state, significant time and energy goes into program structure and "how universities and facilities define and conduct programs of graduate education matter enormously" (p. 229). Program structure varies greatly but a major characteristic of doctoral work is its *less structured* approach (Bowen & Rudenstine, 1992; Sverdlik, 2018). Three stages make-up the doctoral process, common in almost all Ph.D. programs: the Ph.D. process includes coursework, research with a rigorous study, and a presentation of findings (Bowen & Rudenstine, 1992; Campbell et al., 2005; Sowell et al., 2009).

Stage one, or coursework, lasts two or three years depending on the program (Bowen & Rudenstine, 1992). As the first stage in the program, students are overwhelmed re-learning their role as a student (Castello et al., 2017). During this stage, roughly 25% of students choose to leave their program (Bowen & Rudenstine, 1992). A common reason for leaving during this stage included the realization that life as a graduate student is often all encompassing, and that it would make up a significant part of life for five plus years (Golde, 1998). A student's personal and social life, while impacted in each stage, is disrupted most when they first enter a doctoral program and adjust to the demands of their education (Brus, 2006).

Stage two includes a more refined and independent stage of the process. Waning away from structured classes, stage two is often the point in the program where students must pass a qualifying exam, select a dissertation topic, and prior to moving to stage three, submit an approved prospectus (Bowen & Rudenstine, 1992). An additional 10-15% of students typically leave their program during this stage (Bowen & Rudenstine, 1992). The balance students find during stage one is disrupted once again as students begin to associate more closely with faculty within their departments and learn to navigate department culture and resources (Sverdlik et al,, 2018). At this stage, students may recognize the pace and life of a doctoral student as undesirable; "an unbalanced lifestyle that they were not willing to lead" (Golde, 1998, p. 57). Student expectations are often unclear in stage two, with students learning informally about program requirements and faculty expectations (Sverdlik et al., 2018). According to Ferrer de Valero's (2001) study of high/low completion rates, lack of socialization and cultural understanding of the department contributed to attrition in later stages of doctoral education.

The final stage is often the most isolated and loosely structured portion of the program. One third of students within stage three will not finish (Golde, 1998; Sowell et al., 2009). It includes a supervised study, intensive dissertation research and writing, and a final defense of the dissertation (Bowen & Rudenstine, 1992). Stage three is often not time-bound, contributing to large gaps in time-to-completion numbers and additional attrition (Gordon, 2003). During this stage, "the candidate is responsible for finishing on his or her own time" (Van de Schoot et al., 2013, p. 2). Cited by Sverdlik et al. (2018), the role of a supervisor at this stage in the doctoral process contributes to the number of successful completers. Findings from Sverdlik et al. (2018) "emphasizes the importance of a collaborative supervisory relationship" (p. 369). Doctoral program completers shared interests with their supervisors, and built a

relationship of respect and agreed upon expectations (Sverdlik et al., 2018). Research suggests that the format of doctoral education is a contributing factor in high attrition (Bowen & Rudenstine, 1992). Understanding all factors that lead to high attrition is a step towards graduating more students.

Administration: Enrollment and Admissions

Attrition encompasses more than doctoral students, doctoral programs, and faculty and advisors. Attrition is also impacted by administrators whose focus is on recruitment, admissions, enrollment, retention, and graduation. Strategic Enrollment Management is utilized across academic programs at institutions of higher education and is not limited to consideration of graduate programs or doctoral programs (Hossler & Kalsbeek, 2013). Specifically focusing on graduate student enrollment, is Graduate Enrollment Management, which is a subset of Strategic Enrollment Management.

Strategic Enrollment Management

To date, graduation rates are considered in evaluating the quality of a university (Hossler, 2006). Strategic Enrollment Management (SEM) strategies are salient because they "enable institutions to pursue their strategic goals in informed, intentional, and integrated ways" (Hossler & Kalsbeek, 2013, p. 7). Overarchingly, SEM goals tend to consider demand, "enhancing the academic profile of the student body," financial feasibility, student diversity, graduation rates, and revenue from tuition with competing demands across the university as it relates to allocation of resources (Hossler & Kalsbeek, 2013, p. 8;). Additionally,

> Enrollment management strategies employ financial and econometric modeling to understand the role price and financial aid play in influencing students' decisions to enroll and to persist and to explore how changes in price and aid can shape a wide range

> of enrollment outcomes, including increasing net tuition revenue, enhancing the academic profile, and achieving diversity and access. (Hossler & Kalsbeek, 2013, p. 7)

Hossler and Kalsbeek (2013) suggested that successful enrollment management offices collaborate with admissions personnel, marketing personnel, and financial aid offices to consistently cultivate research to study the admissions processes, matriculation, and student retention. SEM offices should also collaborate with academic deans and faculty to develop curricula that directly responds to market needs related to new degree programs and effective methods of instruction (Hossler & Kalsbeek, 2013). Often SEM offices, financial aid personnel, admissions personnel, and faculty and program administrators are siloed in their departments and on their campuses and miss opportunities to unite, strategize, and collaborate. Additionally, many universities do not have established programs to focus on to improve avenues promoting student retention (Hossler, 2006). Specific point persons are needed for these efforts (Hossler, 2006).

Connor et al. (n.d.) and Hossler (2006) indicated that on many campuses, individuals who are responsible for evaluating and understanding retention are also tasked with various other responsibilities, thus retention is often not prioritized as it should be to create sustainable, positive change. As an example, a study completed by Connor et al. (n.d.) indicated that administrators and staff in roles where a portion of their responsibility is geared toward retention spend most of their time on tasks directly related to admissions. An effort to narrow the focus of enrollment management, is the "systematic approach" of *Graduate Enrollment Management* (GEM) ("NAGAP," n.d.).

Graduate Enrollment Management

GEM considers how institutions approach recruitment, student admissions, student support, retaining students, and graduating students from post-baccalaureate programs ("NAGAP," n.d.). Refer to Figure 3 for a linear model of an "Integrated Interdependence Model of GEM" ("NAGAP," n.d.). This model allows professionals, trained in various aspects of the model, to provide support for graduate students from recruitment through graduation ("NAGAP," n.d.). Each aspect of GEM focuses on administrative tasks that lead graduate students through the decision to apply, acceptance, matriculation, program requirements, and then graduation. Aspects of GEM focus on how institutions market their programs, how they advise students once they are enrolled, how they support students related to financial aid, and how they provide services for students to promote academic successes that lead to graduation ("NAGAP," n.d.). Systematic approaches to GEM consider challenges related to resources while also considering the student's experience and the competitive nature of recruitment ("NAGAP," n.d.).

Figure 3

The Systematic Approach to GEM

Note. Source: CGS/GRE Survey of Graduate Enrollment and Degrees.

Attrition

Graduation rates provide insights about doctoral programs and the students enrolled in them. Students who do not graduate in a designated time-frame must be explored further in an

effort to better understand completion rates (Sowell et al., 2008a). On average, students take 7.5 years to complete their program (Sowell et al., 2008). Research indicates that 50 percent of doctoral students will not obtain their degree (Di Pierro, 2012; Ehrenberg et al., 2007; Gardner, 2008; Jairam & Kahl, 2012; Martinez et al., 2013; Van der Haert et al., 2014; West et al., 2010).

Attrition measures the number of students who enter a doctoral program but who do not complete the program they began (Denecke & Slimowitz, 2004). It is difficult to accurately measure attrition because doctoral students may take courses and pursue their doctoral degree off and on for several years (Denecke & Slimowitz, 2004). Non-completers tend to leave programs either early in their program, or during candidacy. Conflicting research suggests that early attrition is positive, with students self-selecting to remove themselves from fields they are disinterested in (Bowmen & Rudenstine, 1992; Golde, 1998). Early attrition means a student invests less time and money in a program that is not suited for them. It also means departments and faculty are not using valuable resources to nurture a student who will inevitably leave the field. While non-completion is undesirable, early attrition prevents the loss of valuable time and resources that a supervisor may have invested in a candidate (Van de Schoot et al., 2013).

Denecke and Slimowitz (2004) indicated that 11% of doctoral students took a leave from academics at some point during their pursuit of the doctoral degree. Thus, "to treat non-enrolled students as non-completers will not account for students who ultimately return and complete their degrees" (Denecke & Slimowitz, 2004, p. 6). Doctoral students take a leave of absence or leave programs entirely at different points throughout their programs. "In the first year, 6.6% of Ph.D. students left their program," and at year two, the cumulative rate nearly doubled (Sowell et al., 2008a, p. 37). By year four, the attrition rate reached 23.6%, then stabilized (Sowell et al., 2008a). Completion rates fluctuate based upon program and student demographics.

Research indicated that completion rates are lowest in social sciences and humanities and highest in physical and life sciences (Denecke & Slimowitz, 2004). Completion rates are higher for men than for women and data for gender non-conforming identities was not accounted for (Denecke & Slimowitz, 2004). Additionally, completion rates for minorities students are lower than completion rates for majority students (Denecke & Slimowitz, 2004). Completion rates also increase for foreign nationals as compared to residents and permanent residents of the United States (Denecke & Slimowitz, 2004). Lastly, completion rates increase in smaller graduate programs and decrease in larger programs (Denecke & Slimowitz, 2004).

Doctoral student attrition has a significant financial impact on students and universities; attrition can cost universities millions of dollars annually (Gardner, 2008a). Gardner (2008a) reported research findings that indicated that schools would save $1 million per year if doctoral attrition rates decreased 10 percent. There are a myriad of reasons to account for the lack of doctoral degree completion. Denecke and Slimowitz (2004) explained that doctoral students

> May transfer to other fields or other universities to pursue their doctorates, they may leave doctoral study for professional programs in law or medicine, or they may be lured away by attractive employment opportunities. Some students may come to realize that the requirements of doctoral study do not meet their expectations, and others will be unsuccessful in meeting the expectations of the program. (p. 4)

Gardner (2008) indicated that attrition is multi-faceted and there is not one reason why doctoral students leave their programs.

Gardner (2008a) cited research indicating the percentage of students who provided reasons for leaving doctoral programs (see Table 3). Sowell et al. (2009) supported these findings in a separate study, citing “financial support, mentoring/advising, and family support”

as main factors in their ability to complete their degree (p. 14). Institutions of higher education recognize that student satisfaction directly impacts retention and the likelihood of students persisting to degree completion (Schreiner, 2009).

Table 3

Reasons Students Leave Doctoral Programs

Reason	**Percentage**
Personal	70%
Academic	42%
Financial	20%

Note. Information obtained from Gardner (2008a).

Schreiner (2009) indicated that despite an understanding of the salient connection between retention and student satisfaction, there is little research attesting to the relationship. Schreiner's (2009) research indicated that the campus climate (feeling connected to their school and a sense of pride about their school), the selectivity of the institution, and the cost of the institution directly impacted retention. Impacting students' sense of belonging on campus were students' desire to feel cared for and visible on campus. While this data from Schreiner's (2009) study is directly linked to first- and second-year students, it is not unlike doctoral students' experiences where they are seeking connection and support from faculty and advisors.

The most urgent issue facing Ph.D. programs today, is the fact that too few admitted students are graduating (Sowell et al., 2008). Studies examining completion and attrition rates identify multiple trends affecting a student's path to degree completion. Published studies aim to encourage conversation, then intervention to address each trend, improving completion (Sowell et al., 2008). According to Denecke and Slimowitz (2004), "under highly favorable conditions, no more than three quarters of students who enter doctoral programs complete their doctoral

degrees" (p. 3). Doctoral students carry more weight pertaining to "defining the scope of their educational experience than do other students" (Denecke & Slimowitz, 2004, p. 4). The overall goal then, is to help students reach their goals while avoiding the real costs that early attrition can impose on students, faculty, administration, and society (Sowell et al., 2008a).

Barriers to Degree Completion

Research indicates a myriad of reasons why doctoral students do not complete their programs and earn degrees. Stress, a sense of isolation, lack of incoming skills, conflict related to advisors, personal circumstances, and the available resources are the most frequently cited barriers that impact completion (Di Pierro, 2012; Gardner, 2008a; Jairam & Kahl, 2012; Lake et al., 2018; & Martinez et al., 2013; Martinsuo & Turkulainen, 2011; Spaulding & Rockinson-Szapkiw, 2012; West et al., 2010). Students can experience multiple barriers simultaneously and stress is often a thread that is woven throughout barriers impacting degree completion.

Stress

Doctoral students experience significant stressors that impact their ability and desire to complete their degree (Jairam & Kahl, 2012; Martinez et al., 2013). Stress is triggered and often exacerbated by adjusting to a new place, program, and school (Jairam & Kahl, 2012). Di Pierro (2012) indicated that graduate students beginning doctoral programs can be "just as confused and anxious as they were as new undergraduates" (p. 31). Additionally, doctoral students consistently experience stress related to finances, lack of sleep, diminished confidence and doubt of their ability to complete the degree, cultivating new relationships, and pressure to develop a professional identity (Jairam & Kahl, 2012).

Stress is exacerbated by a perceived lack of time. Martinez et al. (2013) noted that deadlines also contributed to stress for doctoral students. Students identified feeling guilty,

anxious, and stressed when their studies took them away from time with family (Spaulding & Rockinson-Szapkiw, 2012). Additionally, students felt consumed by their studies. Students described feeling as though they were no longer people with interests outside of academics because they did not have time to spend on other interests (Spaulding & Rockinson-Szapkiw, 2012). Experiences of stress reportedly led to feeling burnt out and broken down (Spaulding & Rockinson-Szapkiw, 2012). Research indicated that stress by itself did not necessarily lead to students leaving their programs (Spaulding & Rockinson-Szapkiw, 2012). However, stress in combination with other factors (health concerns, mental health concerns, personal circumstances, and program expectations) could lead students to leave a program (Gardner, 2008a). Stress is exacerbated in a number of ways, including through a sense of isolation.

Isolation

Spaulding and Rockinson-Szapkiw (2012) define social integration as "feeling a sense of connection and community with faculty and peers" (p. 203). Social integration mitigates a sense of isolation that is common for doctoral students. Isolation may be related to moving to a new place and having minimal time to cultivate relationships within or outside of the doctoral program (Jairam & Kahl, 2012). Lake et al. (2018) and Martinez et al. (2013) indicated that a lack of social support and a sense of isolation negatively impacts completion of a doctoral degree. West et al. (2010) stated students miss contact with their colleagues while completing the dissertation and described feeling socially isolated.

Students' personal culture and the departmental culture impact how connected they may feel to one another, to faculty, and to the program itself. Research derived from social support surveys indicated that female students experienced greater stress and had access to fewer social supports than male students (Jairam & Kahl, 2012). Gardner (2008b) indicated the importance

of socialization and fitting in. Further, she said that in many fields, doctoral students are predominantly White, single men and as a result, minority students may struggle to see themselves as successful in the program (Gardner, 2008b). Gardner (2008b) reported the attrition rate is higher for women and racial/ethnic minorities. Fitting in goes beyond gender, race, and ethnicity and is also related to university or departmental culture.

Gardner's (2008b) research indicated students who were older, female, individuals of color, who had children, and who were part-time often felt "different" and as a result, were more likely to leave a doctoral program. In Gardner's (2008b) research, several students referred to their doctoral programs as an "Old Boys' Club," where sexist attitudes were rampant and where successful women were deemed threatening and often disrespected (p. 131). While the number of doctoral students who describe themselves as people of color is increasing, many racial and ethnic minority students reported dissatisfaction related to integration within their doctoral experience and did not complete their degree (Gardner, 2008b). Hodapp and Woodle (2017) spoke to the impact of stereotypes and racial profiling in fields such as physics.

Minority students face stereotypes that suggest they are intellectually inferior (Steele, 1997). They may conform to stereotypes that can result in underperforming due to experiences with stereotype threat (Hodapp & Woodle, 2017; Steele, 1997). Additionally, Hodapp and Woodle (2017) described additional stress and sense of isolation resulting from being questioned about student status and belonging in a lab, based upon racial or ethnic identity. The importance of fitting in goes even further. Gardner (2008b) also spoke to the perception students had about fitting in, believing they were the only ones struggling within a program. Their perception of their inadequacies prevented them from connecting and affirming their experiences with others (Gardner, 2008b).

Gardner (2008b) identified positive impact between a student's ability and willingness to adapt to the rules, beliefs, and culture of a department and degree completion. A sense of belonging within the community was directly related to a student's willingness and ability to acculturate to that of the department (Gardner, 2008b). Similarly, West et al. (2010) found that students were more likely to persevere if they perceived their department as supportive.

Supportive departments promote socialization. There are four stages of socialization that occur for doctoral students; "anticipatory, formal, informal, and personal" (Gardner, 2008b, p. 127). In the *anticipatory stage*, the student is learning about procedures and roles (Gardner, 2008b). In this stage, students are learning what is expected of them behaviorally. During stage two, the *formal stage*, the student is observing expectations for specific roles. Students are primarily concerned with tasks; they are learning through their courses and through interactions with faculty. In contrast, during the *informal stage,* the student begins to understand the informal role responsibilities by observing others in the role. In the final or *personal stage*, the student's role is internalized (Gardner, 2008b). Gardner (2008b) explained that "students will be able to separate from the department and search for their own identity" because the "conflict impeding the total role transformation is resolved" (p. 128). The life cycle of a doctoral program is between three and ten years, moving students through the four stages of socialization at a pace that is personal to each student.

Jairam and Kahl's (2012) research suggested that students experienced competition between cohort members which led to strained relationships, a tendency to avoid cohort members, and a lack of respect and trust amongst the cohort. While connections across cohorts are important, Spaulding and Rockinson-Szapkiw (2012) pointed out the importance of connection between students and faculty and students and advisors. Research recognizes these

connections as an opportunity to cultivate a sense of belonging and another avenue for support (Spaulding and Rockinson-Szapkiw, 2012). Students may also look outside of their programs for connection and support.

Numerous doctoral students noted seeking emotional support from family only to realize their family did not understand the pursuit of the doctoral degree (Jairam & Kahl, 2012). From the student's perspective, families did not believe in the student or think the student could accomplish the doctoral degree and students cited jealousy from family members that caused contention within the relationships (Jairam & Kahl, 2012). Students also reported not having time to spend with family. Students reported feeling like they let family members down by prioritizing academics or the dissertation (Spaulding & Rockinson-Szapkiw, 2012). These perceptions left students feeling lonely (Spaulding & Rockinson-Szapkiw, 2012). The level and amount of subject knowledge students bring into a program may impact how much time they spend on academics and conversely, how much time they spend away from family and friends.

Incoming Skills

Martinsuo and Turkulainen (2011) identified a student's skill to have the most significant impact on doctoral degree completion. The concept of *skill* refers to "having access to relevant knowledge, solving problems, spending time" as these attributes impact research development and completion (Martinsuo & Turkulainen, 2011, p. 107). Shariff et al. (2015) indicate research skills as the most important predictor of timely completion of a doctoral degree. Denecke and Slimowitz (2004) indicated that a rigorous selection process may eliminate weaker candidates and decrease attrition. However, faculty and administration reported belief that doctoral students fail to complete their degrees due to lack of ability, motivation, and financial implications (Gardner, 2008a). Thus, faculty and administration were not willing to hold responsibility for

attrition and communicated that the responsibility for attrition fell to the students (Gardner, 2008a).

Di Pierro (2012) disagreed with Gardner's (2008a) statement and said that students do not leave programs due to lack of competence. Di Pierro (2012) cited research indicating no academic difference between students who leave and students who complete doctoral degree programs. West et al. (2010) reported incoming skills contributing to degree completion included time management and the student's ability to manage or balance academic demands with other responsibilities. Shariff et al. (2015) support this finding, indicating personal motivation and time management as major factors in successful degree completion. In conjunction with skill, another integral aspect impacting degree completion is the students' relationship with their advisor.

Advisor/Supervisor

The student's perception of their relationship with their advisor or supervisor is crucial to the student successfully completing their degree (Lake et al., 2018; Martinez et al., 2013; Martinsuo & Turkulainen, 2011; West et al., 2010). The terms advisor and supervisor were used across literature to refer to individuals who provided similar forms of guidance and support for doctoral students. An advisor or supervisor provides guidance pertaining to research (Linden et al., 2013). An advisor orients their student to the discipline, assists them in selecting a dissertation topic, ensures the quality of the dissertation, and guides the subsequent employment process (Sverdlik et al., 2018). Lake et al. (2018) states that, "The single best predictor of dissatisfaction with the graduate experience is whether the doctoral student receives sufficient encouragement, mentoring, and consultation from faculty" (p. 201). Further, they indicated that for some students the match regarding research interest between student and advisor was most

important, for others the working alliance was most salient, for other students the nature of the relationship was most vital (Martinsuo & Turkulainen, 2011).

The number of doctoral programs available and subset of interdisciplinary options affects advisor availability (Bowen & Rudenstine, 1992). Bowen and Rudenstine (1992) note how difficult it is for students to identify an advisor who understands in detail a particular thesis field or topic. In addition, Bowen and Rudenstine (1992) call attention to faculty member availability, suggesting that faculty members are asked to respond to a wide range of student interests and have difficulty managing and organizing their growing responsibilities.

Research suggests that most students have access to an advisor, especially during the final stages of their doctoral program (Sowell et al., 2009). Storms et al. (2011) utilized an appreciative inquiry pertaining to students' experiences with advisors and one outcome indicated that advisors are expected to be an expert in the field of study but that was not always the case. Advisors reported that the dissertation process was successful when they were able to determine whether they had a genuine interest in the topic, time to commit to the student, and a working style that complimented the student's style (Storms et al., 2011). Additionally, advisors noted that creating a calendar with agreed upon deadlines aided in student's ability to complete their dissertation (Storms et al., 2011). Lastly, advisors indicated the need to thoroughly understand the program requirements and accurately communicate those to other committee members (Storms et al., 2011).

Unclear expectations between students and advisors is a barrier for degree completion (Ehrenberg et al., 2007; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012). Communication between student and advisor is crucial for degree completion (West et al., 2012). When changes were made, creating a clear line of communication and a clear

understanding of expectations, attrition decreased (Ehrenberg et al., 2007; Spaulding & Rockinson-Szapkiw, 2012). Another important aspect of communication is related to students' perceptions of the program; ensuring there is congruence between what the program offers and what the students learn versus what they hope to learn (Spaulding & Rockinson-Szapkiw, 2012).

Denecke and Slimowitz (2004) and Di Pierro (2012) explained that students' progress when they are held accountable through formal assessments and evaluations. Di Pierro (2012) also indicated that a formal model for advising doctoral students could not be found during her research. Advisors often view students as "independent scholars" and this approach is not effective as students need academic support as scholars and emotional support as people (Di Pierro, 2012, p. 30).

Di Pierro (2012) identified the importance of evaluation during the initial coursework phase of a doctoral program, during comprehensive exams, and between comprehensive exams and defense. She indicated that identifying and intervening as an advisor could likely decrease attrition as struggling students would be identified and interventions could occur (Di Pierro, 2012). Di Pierro (2012) considers this formal supportive approach to be best practice and suggested that it be adopted across doctoral programs. The adoption could be facilitated through formal training programs for doctoral advisors, culminating in a more formal approach to advising (Di Pierro, 2012; Storms et al., 2011).

Lastly, students reported wanting an advisor who would serve as a mentor by providing guidance, care, encouragement, and friendship (Denecke & Slimowitz, 2004). Orellana et al. (2016) found that students were looking to advisors to provide them with resources necessary for their research, to teach them how to execute the research, to support them in the process, and to manage the outcome and hold them accountable to timelines. Similarly, students reported they

were more likely to engage and participate in activities within the department if they believed their advisor was interested and committed to their success (Denecke & Slimowitz, 2004). The relationship between student and advisor is especially salient as it relates to preventing attrition. Gardner (2008) reported that faculty were often unaware of the reasons that students left doctoral programs and this was cited as an example of the disconnection between student and faculty. Many of the trait's students sought from an advisor are more likely found in a mentor.

Mentors

Students consistently benefit from relationships with mentors which is differentiated from that of advisors because it is less formal (Linden et al., 2013). Generally, mentoring includes "personal, intimate, pastoral relations, besides interaction relevant to the student's professional socialization" (Linden et al., 2013, p. 640). Mentors are often credited with assisting mentees in furthering their careers which can be the result of aspects of personal development; increasing interpersonal skills and modifying a mentee's view of self (Linden et al., 2013). Additionally, mentors often provide education related *organizational socialization*, which encompasses teaching mentees about aspects of an organization to include "performance standards, important people in the organization, organization goals and values, and jargon" (Linden et al., 2013, p. 642). Lastly, mentors assist mentees *professional socialization* which includes "expectations, skills, behaviors, and performance demands, associated with a particular profession" (Linden et al., 2013, p. 642). Thus, mentors are often able to curtail doctoral students' expectations of the program or profession.

Program Expectations

Sowell's et al. (2009) study found that most respondents received clear program expectations during their coursework. However, expectations became less clear as they moved

into the dissertation phase of their program (Sowell et al., 2009). Selecting a program that best meets the professional aims of the doctoral student is a major factor in program completion, leaning heavily on the student's interest in the program to carry them through adversity around expectations.

Lake et al. (2018) indicated the fit between the program and the student as a crucial component regarding whether a student completes the program and earns the degree. At times, students determined their professional aspirations or the reasons they initially believed they needed a doctoral degree were inaccurate (Bowen & Rudenstine, 2009; Gardner, 2008a). Faculty indicated that most students leave a program during the dissertation phase and not during the coursework component of the degree (Gardner, 2008a). Faculty indicated this was because students know how to complete coursework but do not have enough guidance related to completing the dissertation (Gardner, 2008a). Generally, students have voiced dissatisfaction with the progression of doctoral programs.

Doctoral students are dissatisfied with regard to the lapse of time that passes between beginning a doctoral program and engaging in research and teaching and they cited concerns about a lack of relevance related to research opportunities (Ritzman et al., 2000). Doctoral students expressed interest in working with faculty knowledgeable across a breadth of research topics and global issues and who are engaged in research that is cutting edge (Ritzman et al., 2000). Additionally, doctoral students want to graduate from programs with the skills needed to hit the ground running in faculty positions and with the ability to execute high level research (Ritzman et al., 2000).

Campbell et al. (2005) laments the model that most programs use today does not prepare graduate students for the changing work environment they will face. Student feedback indicated

that to increase their competence, they would like to be given more opportunities to "learn by doing" (Ritzman et al., 2000, p. 14). Gardner (2008) suggested that these expectations be shared across students and faculty and the lines of communication should remain open. While some attrition factors are academic in nature, others are considered more personal.

Personal Circumstance

Students described difficulty persisting through the doctoral program while experiencing challenging personal circumstances (Gardner, 2008a; Spaulding & Rockinson-Szapkiw, 2012). Challenging personal circumstances included conflicts with spouses, family events such as planning a wedding, caring for an ill loved one or losing a loved one, or having a baby (Spaulding & Rockinson-Szapkiw, 2012). Students reported struggling because they "could not do and be everything they wanted" (West et al., 2010, p. 8). Students were often pulled between roles such as full-time student, parent, and professional.

Researchers indicated that women are often hindered by trying to balance academic responsibilities with the responsibilities of being a parent (Gardner, 2008a; Martinsuo & Turkulainen, 2011; & Spaulding & Rockinson-Szapkiw, 2012). For some women, becoming a mother meant leaving their doctoral program (Gardner, 2008a). They explained that men generally devoted more time to their doctoral studies over the course of a week and the research indicated this was a result of child-rearing responsibilities that the women held (Martinsuo & Turkulainen, 2011). Gardner (2008) and Martinez et al. (2013) found that students who were single and were not trying to juggle the responsibilities of families and children had more difficulties maintaining a work-life balance. Perhaps contributing to a work-life balance is the financial strain encumbered by pursuing a doctoral degree.

Available Resources

Financial strain impacts a student's ability to complete a doctoral degree (Di Pierro, 2012; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012; West et al., 2010). Denecke and Slimowitz (2004) reported that financial support can integrate a student into the department and a lack of financial support can isolate a student from the department. Van der Haert et al. (2014) contend that "Students with research fellowships and research assistantships often have a more successful doctoral path than teaching assistants and students who finance doctoral study with a job outside university or own earnings" (p. 1888). Bowen and Rudenstine (1992) support these findings, stating students with less financial aid support themselves by teaching more, and in turn, have less time for their research.

Van der Haert et al. (2014) found a link between funding received and perceived ability. Their research indicated that more than half of the students "who are mostly unfinanced completed their second degree cycle without honors or cum laude" (Van der Haert et al., 2014, p. 1900). While there is literature attesting to barriers for doctoral degree completion, there is also research describing doctoral students who successfully obtain their degrees.

Factors that Promote Completion

Despite the 50% of students who do not complete degrees, there remain 50% of doctoral students who do successfully write and defend their dissertations and step into their profession as doctors (Di Pierro, 2012; Ehrenberg et al., 2007; Gardner, 2008; Jairam & Kahl, 2012; Van der Haert et al., 2014; Martinez et al., 2013; West et al., 2010). Research by West et al. (2010) considers aspects positively influencing the likelihood a doctoral student will earn their degree. Several considerations related to doctoral students and resilience and persistence are as follows; orientation, social support, personal commitment, and support centers. One such aspect begins

as the student matriculates into the doctoral program. Orientation is an integral component to set doctoral students up for success.

Orientation

Denecke and Slimowitz (2004) suggested that students visit the campus and department before committing to attend to decrease attrition rates. Upon arrival, it is necessary to have a thorough orientation to become familiar with the department, the university, and the role as a doctoral student (Di Pierro, 2012). Di Pierro (2012) indicated that doctoral students often experience anxiety and stress because they do not know what to expect and they have unmet expectations for their experience. She described numerous benefits of a departmental orientation and offered it as an opportunity for "enculturating" students to the department and to the university (Di Pierro, 2012; West et al., 2010). Doctoral students need orientations that occur in a timely manner as "information provided too early or too late in the process compromises its value" (Di Pierro, 2012, p. 31). Di Pierro (2012) suggested that doctoral students participate in an orientation at each point in their doctoral program so they are prepared for coursework, comprehensive exams, and dissertation. Initially, doctoral students should be informed of the general demands and expectations of doctoral students (Di Pierro, 2012). Additionally, they should be oriented to their specific departments as well as to the university as a whole. Doing so decreases anxiety and allows students to become aware of resources and to begin to feel a part of the larger department and of the university.

Denecke and Slimowitz (2004) highlighted the need for a "Graduate Student Handbook" to provide guidance and clarity about policies and procedures (p. 19). Di Pierro (2012) indicated a need to provide additional orientation for students serving as teaching or research assistants so they begin with a baseline of knowledge for the role. Further, Spaulding and Rockinson-

Szapkiw (2012) spoke to the value of connecting early with faculty and advisors so students can make informed decisions as they work toward identifying advisors who can be a good fit for the dissertation. Denecke and Slimowitz (2004) indicated the student's connection with the advisor was positively associated with doctoral completion rates. Various aspects of social support have been considered crucial to doctoral student success.

Social Support

Denecke and Slimowitz (2004) indicated that social interaction and relationships with colleagues and advisors were positively associated with completing a doctoral degree. Spaulding and Rockinson-Szapkiw (2012) identified the positive impact social support has for doctoral students as it relates to fostering positive coping strategies, mitigating stress, and affording connections to religion or spirituality. Social support is a broad term and may refer to cohort members or colleagues, faculty and advisors, friends, and family. Research indicated that emotional support from cohort members enhanced students' professional development (Jairam & Kahl, 2012).

Research by Lake et al. (2018) explored the impact of cohorts related to decreasing a sense of isolation. A cohort was defined as a group of students intended to move through a program together, based on time of admission (Lake et al., 2018). Outcomes indicated that for some programs, retention increased to 65-80% in a three-year period following the implementation of a cohort model (Lake et al., 2018). Students reported feeling connected to and supported by cohort members, and students acknowledged feeling motivated as they did not want to disappoint their cohort members (Lake et al., 2018). Perhaps as a parallel to student connection, the students observed personal and professional investment from faculty (Lake et al.,

2018). These findings suggest that the cohort model leads to a collaborative culture and dynamic across students and faculty, increasing access to social support during their doctoral experience.

Relationships with cohort members was especially salient because of the shared experience and the opportunity to provide empathy for one another (Jairam & Kahl, 2012). Additionally, cohort members were able to provide academic support by studying together and encouraging one another (Jairam & Kahl, 2012). Cohesion across cohorts led to a reported increase in enjoyment during the experience of the doctoral program (Jairam & Kahl, 2012). While social support from colleagues is integral, social support from family members is also crucial to doctoral student success.

Social support from family often included assistance with academics and serving as editors as well as providing emotional support and encouragement (Spaulding & Rockinson-Szapkiw, 2012). Family support can affirm a doctoral student's drive to continue working toward achieving the degree, thus enhancing a doctoral student's personal commitment to attaining the degree.

Personal Commitment

A student's personal commitment to completing the degree is a necessary component in completing the research and dissertation (Martinsuo & Turkulainen, 2011; Spaulding & Rockinson-Szapkiw, 2012). Personal commitment in conjunction with support from an advisor was integral in degree completion (Martinsuo & Turkulainen, 2011). Personal and professional motivation were identified as contributing to persistence which was said to be crucial for degree completion (Spaulding & Rockinson-Szapkiw, 2012).

Personal motivations are typically associated with achievement, personal goals, enjoying a challenge, and desiring a title. Professional motivations cited typically include factors

> associated with career advancement, such an increasing personal marketability and credibility, as well as being eligible or recognized for a promotion or raise. (Spaulding & Rockinson-Szapkiw, 2012, p. 201)

Freeman and Kochan (2012) explained that doctoral students

> learned more about themselves, their own perspectives, and the perspectives of others as well as their own personal attributes through their programs. This learning included developing their own sense of autonomy, focusing on developing their personal and professional values and identity, self-esteem, and maturity. (p. 103)

Doctoral students make personal decisions about how they will prioritize aspects of their lives and how they will manage time. Martinez et al. (2013) reported that some doctoral students will put off having children until they complete their degree. In contrast, several doctoral students indicated prioritizing their children and families while pursuing a doctoral degree as an important aspect of work-life balance (Martinez et al., 2013).

Additionally, doctoral students may be thoughtful and intentional about how they prioritize their time, roles, and responsibilities and they maintain emotional and physical health by allocating consistent time for self-care (Martinez et al., 2013). Doctoral students identified time management as a challenge but also indicated the need to make tradeoffs or to set boundaries and say no to personal and professional opportunities (Martinez et al., 2013). Graduate and doctoral support centers promote time management as they seek to help doctoral students.

Support Centers

Martinez et al. (2013) described institutional support as integral to "helping participants balance school, work, and life" (p. 53). Graduate centers were initially developed to decrease

attrition; the primary focus was to offer consultation pertaining to understanding statistics and developing proposals (Di Pierro, 2012). Recently, doctoral support centers have been established at some institutions to combat many of the barriers doctoral students specifically, experience that prevent them from completing their degrees.

Doctoral support centers offer workshops pertaining to writing and approaching the dissertation (West et al., 2010). West et al. (2010) identified multiple benefits from the workshops to include providing information and guidance but also facilitating connection to mitigate the sense of isolation that doctoral students experience as they move through the dissertation. Thus, benefits of doctoral support centers are curricular (academic) and co-curricular (socio-emotional) (West e al., 2010).

The advisors who are employed in the doctoral support centers have earned doctoral degrees and "provide one-on-one writing consultation, give workshops on getting through various aspects of the program, and facilitate structured support group meetings" (West et al., 2010, p. 6). Doctoral students who utilized a doctoral support center reported "they 'learned so much' and felt 'motivated' because of peer support" and the support helped them stick to a time frame and maintain deadlines (West et al., 2010, p. 9). Additionally, research indicated that students were likely to seek support from a doctoral support center if they were experiencing challenges during the process of completing the dissertation.

Research by West et al. (2010) indicated that students were satisfied with the services they received from a doctoral support center. Of "69 participants who responded to a questionnaire item about the DSC, 73% identified their experience with the DSC as either excellent or good. They reported the DSC provided both technical and emotional support" (West

et al., 2010, p. 10). Roughly 55% of students reported technical support as helpful and 41% of students described the emotional support as very helpful (West et al., 2010).

Students pursue a doctorate for status, job opportunities, and to advance research within their field of study (Rudolph, 1990; Sanders & Landrum, 2012). Well-intentioned from the start, half of enrolled students terminate their Ph.D. trajectory, attributing factors such as stress, isolation, incoming skills, program expectations, supervision, personal circumstances, and available resources (Di Pierro, 2012; Gardner, 2008a; Lake et al., 2018; Martinsuo & Turkulainen, 2011; Sowell et al,, 2009). However, many factors promote program completion and can improve doctoral student retention. These factors include strong orientation programs, social support, and a student's personal commitment to persist (Denecke & Slimowitz, 2004; Di Pierro, 2012; Martinsuo & Turkulainen, 2011). Increasing completion rates benefit research, institutional status, and the economy, making it imperative to understand how successful students navigate their way through a program and stay on the trajectory towards earned degree.

Increasing Completion Rates

Literature affirms concern for the state of doctoral education. Attrition rates are too high, with students, faculty, and institutions placing too many resources in programs that are not yielding earned degrees (Sowell et al., 2008a). Economic forces will continue to affect interest in graduate programs, placing responsibility on the institution to identify how best to support students during their journey towards degree completion.

Current attrition rates are 50% (Di Pierro, 2012; Ehrenberg et al., 2007; Gardner, 2008; Jairam & Kahl, 2012; Van der Haert et al., 2014; Martinez et al., 2013; West et al., 2010). Students leave programs for many reasons, including personal circumstances, feelings of isolation, incoming skills, student support, and available resources (Shariff, 2015; Sowell et al.,

2008). One third of students leave programs during stage one or coursework (Bowen & Rudenstine, 1992; Sowell et. al, 2009). Sowell et. al (2009) report that a second third leave during stage three, or candidacy, suggesting that to increase completion rates, more attention should focus on these two stages of doctoral programs. Students who persist and receive a degree do share commonalities either in personality or program features. Successful students overcome adversity through personal will-power, and also through help-seeking methods (Di Pierro, 2012; Denecke & Slimowitz, 2004). Programs that offer advisor support, strong orientation programs, cohort-based learning, and support centers better addressed student needs (Lake, et al., 2018; West et al., 2010). These facts conclude that students, faculty, and universities have some control on attrition and completion rates and that additional research and action can contribute to an uptick in earned degrees among doctoral students.

Conclusion

Completing a doctoral degree is a collaborative effort between the university and the doctoral student. Thus, university administrators and faculty should strive to adequately understand the doctoral student experience so they can develop and implement programs that promote degree completion. Understanding barriers doctoral students experience as well as factors that promote completion leads to interventions needed to decrease attrition. Chapter III details the methods utilized to obtain feedback about the doctoral student experience from currently enrolled doctoral students and previously enrolled doctoral students in the Humanities and Sciences at Virginia Commonwealth University.

Chapter III: Methodology

Methodology

A complete review of literature determined trends in doctoral enrollment practices, including research on retention and attrition. As outlined in chapter 2, the attrition rate of doctoral students has remained consistent for over fifty years, with only half of enrolled students receiving a degree (Bowen & Rudenstine, 1992; Crede & Borrego, 2014; Sowell et al., 2008; Sowell et al., 2008a). There is some urgency within higher education to address the issue of doctoral student attrition. Doctoral education drains resources from the university and requires a significant investment of both time and money from the student (Denecke & Slimowitz, 2004; Gardner, 2008a).

Multiple underlying factors influence a students' decision to leave their doctoral program with students exiting their program at different stages (Denecke & Slimowitz, 2004; Gardner, 2008a; Sowell et al., 2009). Our study focused on three stages of doctoral education where students either leave or stop out. These stages included (a) stage 1 - curriculum, (b) stage 2 - comps or qualifying exams, and (c) stage 3 - candidacy. This study sought to better understand why students consider leaving or stopping out within each stage, while investigating how different avenues of support can identify and retain students. To manage control and scope, this pilot study intentionally focused on one college, within a large public research university. This pilot study tested current literature on when and why students leave their doctoral program. The research questions guiding this study included:

1. At what stage are doctoral students most likely to consider leaving a doctoral program in the College of Humanities and Sciences at Virginia Commonwealth University?

a. What internal and external factors impact attrition in doctoral programs at the College of Humanities and Sciences at Virginia Commonwealth University?
b. What resources or avenues of support do doctoral students need to successfully complete a doctoral program within the College of Humanities and Sciences at Virginia Commonwealth University?

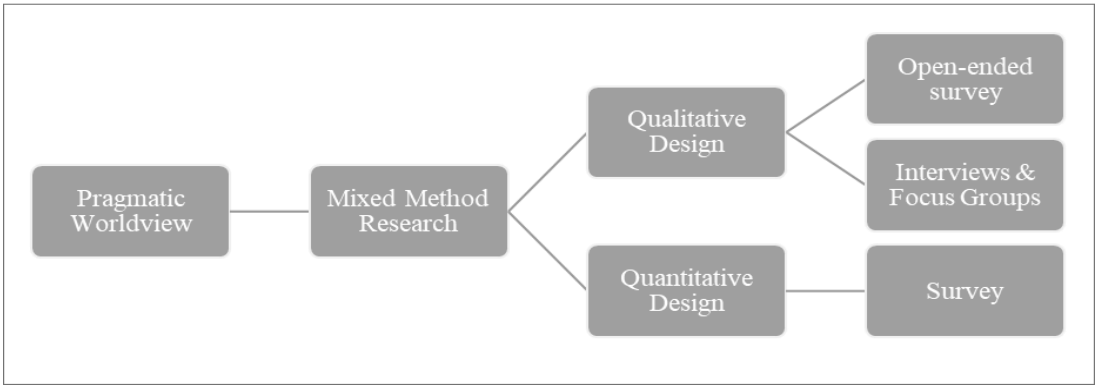
The methods section is organized to address the main research question and two sub-questions. First, an outline of the overall approach and design. Then, the setting of the study and the participants. Finally, an overview and description of the population, data collection and analysis procedures.

Worldview

In order to gain a full understanding of student attrition in doctoral education, this study used a pragmatic approach to research. Pragmatists see the world as complex; a single approach can limit the outcome (Creswell & Creswell, 2018). The pragmatic worldview "focuses on the situation and all approaches available to understand the problem" (Creswell & Creswell, 2018, p.10). A pragmatic approach supports a researcher adapting their process, choosing between different models of inquiry based on the research questions being addressed (Morgan, 2007). The pragmatic approach is *problem-centered* and is consistent with the aim of the study which sought to understand barriers preventing doctoral students in the Humanities and Sciences at VCU from completing their degrees (Creswell & Creswell, 2018). As displayed in Figure 4, by adopting a pragmatic worldview, researchers used both qualitative and quantitative data, or a *mixed method design* to address the research question, contributing to the depth of research and findings.

Figure 4

Overall Research Approach



Mixed Methods Design

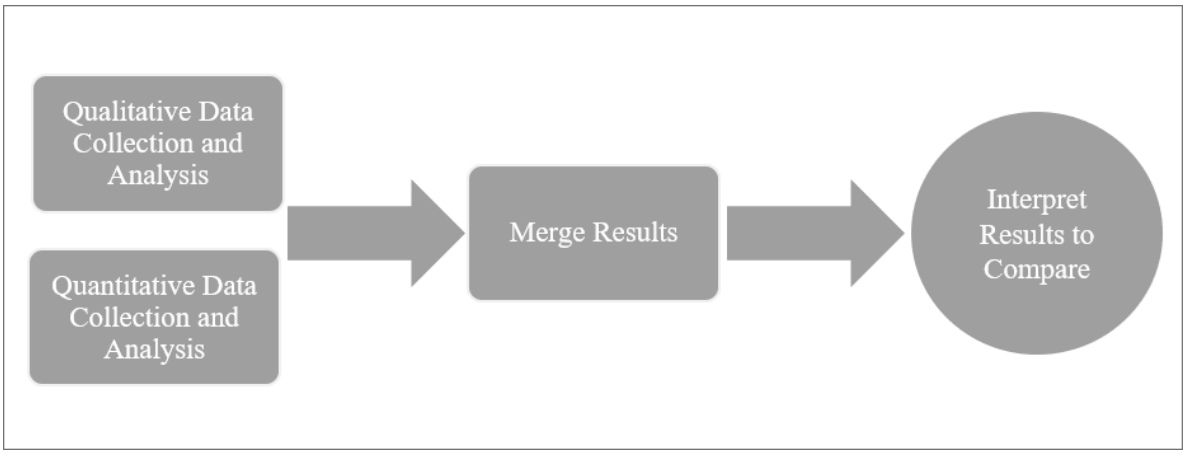
Supported by a pragmatic worldview and residing in the middle of qualitative and quantitative approaches, the researchers deployed a mixed method approach (Creswell & Creswell, 2018). Mixed methods methodology dates back to the late 1980's and has evolved as well, with mixed method design also known as, *integrating*, *multimethod*, and *mixed research* (Bryman, 2006; Creswell & Creswell, 2018). Creswell and Creswell (2018) formally define a mixed method approach as a design which integrates qualitative and quantitative inquiry into the study. By utilizing both qualitative and quantitative data, this study was able to draw more meaningful conclusions, increasing the ability to understand the doctoral student experience. Combined design provides "insight beyond the information provided by either the quantitative or qualitative data alone" (Creswell & Creswell, 2018, p. 4).

Both qualitative and quantitative designs are used in this study with the authors collecting open-ended and close-ended responses from study participants (Creswell & Creswell, 2018). The type of inquiry within the qualitative design utilizes a phenomenological approach to research. In this design of inquiry, participants explored their experience with doctoral education with the data culminating "the essence of the shared experience" (Creswell & Creswell, 2018, p.

13). Within the quantitative research, the strategy of inquiry was a survey, to provide "numeric description of trends, attitudes, or opinions" (Creswell & Creswell, 2018, p. 12).

Figure 5

Convergent Design



Note. Adapted from Creswell and Creswell (2014).

Using a convergent mixed methods approach (see Figure 5), the authors collected data simultaneously, at one point in time, integrating data sets to "create a comprehensive analysis of the research problem" (Creswell & Creswell, 2018, p. 15). This practice of collecting open- and close-ended responses allowed the researchers to analyze data separately, then explore the combined data for commonalities, confirming or disconfirming findings (Bryman, 2006; Creswell & Creswell, 2018). Together, the qualitative and quantitative data validated findings and deepened the understanding of factors that lead to doctoral student attrition. The intent of the qualitative and quantitative research differs. While the quantitative research offers a generalized belief, the qualitative research suggests an in-depth perspective on the doctoral student experience, further validated by findings in the online survey (Creswell & Creswell, 2018). Essential in mixed method design is a rigorous data collection procedure (Stage &

Manning, 2016). Rigor was measured by (1) qualitative and quantitative sampling (2) collection and analysis of the data, and (3) the study's stakeholders (Creswell, 2014).

Setting

Located in Richmond, Virginia, Virginia Commonwealth University (VCU) is an urban institution with over 31,000 students ("Facts and Rankings," 2019). Offering over 200 programs in the arts, sciences, and humanities, VCU believes that its "grit, relationship with the city, and commitment to diversity sets it apart from other college campuses" ("Facts and Rankings," 2019). VCU offers undergraduate, master's, doctoral, and professional programs, each administered within the individual department, school, or college. About 82% of students at VCU attend full-time, and 86% are Virginia residents. A diverse campus, 75% of students are either students of color or underrepresented minority students ("Facts and Rankings," 2019). With a student-faculty ratio of 18:1, there are 2,501 full-time faculty ("Facts and Rankings," 2019). Cost of attendance for the 2019-2020 academic year is set between $35,161 and $48,459 for graduate residents and graduate non-residents, respectively ("Cost of Attendance, 2019).

There are 5,309 graduate students enrolled in approximately 112 graduate programs. Within the graduate school, VCU currently offers 70 masters programs and 42 doctoral programs ("Graduate and Professional Studies," 2019). The College of Humanities and Sciences includes eighteen departments with eleven doctoral degrees, outlined in Table 4.

Table 4

Graduate Programs within the College of Humanities and Sciences

Graduate Degree Programs	
Chemical Biology, Ph.D.	Media, Art, and Text, Ph.D.

Chemistry, M.S. and Ph.D.	Nanoscience and Nanotechnology, Ph.D.
Clinical Psychology, Ph.D.	Psychology, M.S. and Ph.D.
Counseling Psychology, Ph.D.	Rehabilitation and Movement Science, Ph.D.
Health Psychology, Ph.D.	Systems Modeling and Analysis, Ph.D.
Integrative Life Sciences, Ph.D.	

Admission into the College of Humanities and Sciences follows the general requirements of VCU graduate school, and includes the requirement of a bachelor's degree in the discipline the application is for, examination scores from either a GRE, LSAT, or MAT, and letters of recommendation ("Graduate Information," 2019). Once admitted, graduate students must maintain an overall GPA of 3.0 (B) and take between 9-15 credits per semester. Credit requirements vary by degree program.

Within the College of Humanities and Sciences, there are two phases of advanced degree training. First, the didactic phase, where students are attending classes and completing coursework. The second phase is research, where students are preparing for and writing their dissertation or thesis ("Graduate Information," 2019). While exact credit hours vary by program, doctoral students can expect to accumulate 180 credit hours in their quest to candidacy.

VCU Institutional Review Board

This study was submitted to the VCU Institutional Review Board (IRB) for approval. We sought and received an exemption status from the IRB, due to the nature of our study, which focused on quality improvement, rather than research. While there is no formal definition for *quality improvement*, the Institute of Medicine (n.d.) defines the activity as "a systematic pattern of actions that is constantly optimizing productivity, communication, and value within an organization in order to achieve the aim of measuring the attributes, properties, and characteristics of a product/service in the context of the expectations and needs of customers

and users of that product" (p. 2). Our study explored the doctoral student experience, identified indicators that contributing to attrition, and identified opportunities to better support students.

All participants received written communication prior to beginning the study outlining the purpose of the study and requesting informed consent (Creswell & Creswell, 2018; Dillman et al., 2014; Stage & Manning, 2016). All participants were made aware of the voluntary nature of the study, their ability to stop the survey or remove themselves from the focus group at any time without repercussion, and their right to withdraw from the study and have their data returned (Stage & Manning, 2016). The survey did not ask for identifying information, such as name or email. In one instance, the survey did ask previously enrolled students if they wanted to be contacted to share their experience with the Graduate School. This data was not included in our findings and the email addresses received were forwarded to administrators at the Graduate School. Data did not include any identifiable information related to the individual.

Population and Sampling

Guided by the research question, the participants for this study included (a) enrolled doctoral students from the College of Humanities and Sciences at Virginia Commonwealth University, (b) Students that left their doctoral program, and (c) Program Directors within the College of Humanities and Sciences at Virginia Commonwealth University (see Table 2). Participants were selected based on their ability to meet the criteria of the study.

Table 5

Population and Sample

Group	Population	Sample Size	Type of Inquiry	Sample Criteria
Enrolled Doctoral Students	318	108	survey	Enrolled students, College of Humanities and Sciences

Non-Completers	86	4	survey	Students who have left their doctoral program, College of Humanities and Sciences
Program Directors	9	0	interviews	Staff within the College of Humanities and Sciences who oversee a doctoral program and interact with doctoral students for at a minimum 50% of their job

Survey

To address each research question, a survey was created. The primary purpose of the survey was to explore the doctoral student experience from the perspective of the student. Further, the purpose of the survey was to capture and measure barriers impacting doctoral degree completion derived from the current doctoral student's experience with their doctoral program, as well as the experiences of students that left the program without a degree. The survey was cross-sectional, with data collected at one point in time (Creswell & Creswell, 2018). The surveys' target population, or the "group that the survey aims to describe and generalize results to" (Dillman et al., 2014, p. 57) was the approximately 318 students enrolled in doctoral education in the field of Humanities and Sciences at Virginia Commonwealth University, plus students on record that stopped out.

Researchers used a single-stage sampling procedure, connecting directly with the sample population (Creswell & Creswell, 2018). Drawing from a *convenience sample*, the student survey was distributed to 318 doctoral students currently enrolled in the College of Humanities and Sciences at Virginia Commonwealth University and 86 previously enrolled students who did not complete their degree. The population was not stratified prior to selecting the sample; therefore, the sample may not reflect the true proportion in the population (Creswell & Creswell, 2018). A copy of the student survey is included in Appendix B and sample questions follow:

Table 6

Sample Survey Questions

Sample Question	Question Type
At times, I have doubted my abilities to complete my doctoral program.	Likert-Type Scale, 7 point
At what stage did you consider leaving your doctoral program? (please check all that apply)	Multiple Choice, multiple select.
My doubt has been related to (please check all that apply)	Conditional Question, skip logic.

Interviews

Researchers attempted a *criterion-based purposive sampling* approach to identify and select nine program directors as study participants (Stage & Manning, 2016). This criteria strategy is frequently used in qualitative research to select participants with a known set of characteristics (Palinkas et al., 2015). The available resources, including time and funding, determine the sample size. Researchers attempted two constructs, defined by Stage and Manning (2016) and deployed to ensure appropriate collection; *sufficiency* and *saturation*. Researchers attempted to conduct a focus group with enough participants to (1) reflect the range of experiences within the chosen environment and (2) capture all new information (Stage & Manning, 2016).

Table 7

Sample Focus Group Interview Questions

Sample Question	Question Type
How do you communicate with doctoral students about their experiences in the doctoral program?	Open-ended response
What barriers exist, related to promoting degree completion?	Open-ended response

Data Collection Procedures

In this study, researchers attempted to collect data using three approaches. First, document analysis to explore and understand current interventions available to doctoral students in the College of Humanities and Sciences. Second, an online survey to all currently enrolled doctoral students within the College of Humanities and Sciences and to students who stopped out. Third, focus groups with program directors to explore current interventions and general interactions between student and program director. To ensure rigor, similar constructs were used in each data collection type (Creswell & Creswell, 2018). Questions assessed a student's ability to complete their program and explored internal and external concerns faced at each stage of their journey.

Document Analysis

Researchers explored the College of Humanities and Sciences website to discover avenues of support for current doctoral students. Researchers requested support information from the Graduate School and from the Humanities and Sciences departments to further explore interventions available for students. With this information, as well as information from the literature review and personal experience, the researchers designed a final draft of the survey.

Online Survey

RedCap enables researchers to design and collect data at minimal cost and provide easy access for survey participants. The survey questions were validated using the Survey/Interview Validation Rubric for Expert Panel (VREP) survey validation tool (See Appendix C). Survey questions were categorical (yes/no), continuous (multiple choice) and open-ended, measuring frequency and degree (Creswell & Creswell, 2018). The survey consisted of 37 multiple-choice questions and five open-ended questions. Questions addressed demographics, the students

experience with graduate school based on the stage they are in, and the student's relationship with school resources. The survey also asked students to consider how support during graduate school has either helped, hindered, or not affected their ability to continue.

The VCU Graduate School sent out the survey on behalf of the researchers, in order to protect participant identity. Study participants were asked to complete an anonymous survey related to their experience as a doctoral student. The researchers provided a scripted email to include the purpose of the survey, time commitment, and potential benefit (See Appendix D). The survey was open for 25 days, with an email reminder provided at day 12 (See Appendix E). Students were not given an incentive to participate. A full copy of the student survey is available in Appendix B.

Focus Groups

For more robust data analysis, the researchers attempted to hold focus groups with program directors within the College of Humanities and Sciences. Qualitative inquiry "uncovers the meaning participants make of their experiences" (Stage & Manning, 2016, p. 49). Therefore, when conducting focus groups, it is imperative for the interviewer to promote a warm climate where respect is paramount (Stage & Manning, 2016). Creswell (2014) suggests building rapport by visiting the focus group site and practicing active listening skills. Program directors were given the opportunity to participate in focus groups, to share their experiences with overseeing a doctoral program.

Researches attempted to host focus groups with program directors to generate data from a different perspective than that of the student experience. Researchers developed 12 questions linked to research to ask during each focus group (See Appendix F). Researchers attempted to gain an in-depth understanding of program directors' experiences with and relationship to

doctoral education in the College of Humanities and Sciences. Focus groups were designed to be held in person or online through Zoom, a virtual meeting space. Together, the data collection procedures were designed to inform the data analysis.

In an additional attempt to collect data from program directors, researchers transitioned focus group questions into 11 survey questions (See Appendix F). The survey was sent to program directors via email from the researchers. Seven days later, the survey invitation was sent again to program directors by the Principal Investigator for the study.

Data Analysis

In this study, the researchers collected qualitative and quantitative data. Data analysis consisted of three phases: (1) analyze the qualitative data through thematic coding, (2) analyze the quantitative data by statistical results and, (3) analyze and integrate the data together (Creswell & Creswell, 2018).

Document Analysis

Documents and website data on the doctoral student experience at Virginia Commonwealth University and within the College of Humanities and Sciences was used to learn what interventions are in place and to solicit the experiences of students and faculty involved in the college's doctoral programs. A web-search identified one main page supporting doctoral students and a College of Humanities and Sciences webpage with internal department links. Visits to the Graduate School offices identified printed documents for prospective and current doctoral students.

Table 8

List of Online Documents Used to Identify Available Interventions

Source	Description

VCU Webpage (Graduate and Professional Studies)	Assists students with admission, financial aid, graduate facts, career assistance, peer connections, and wellness support
VCU Webpage (College of Humanities and Sciences)	Connects with new students, provides links to each department

Survey

Survey data was analyzed by first exporting the data into Microsoft Excel from RedCap. Statistics including averages, percentages, medians, ranges, and variance were utilized to identify specific trends in the data. Count if formulas were used to identify the number of records containing desired information. Significance in the data was measured by examining variations in the means using chi-squared data analysis. Results focused on the interaction between data points. Qualitative data from the survey allowed the researchers to identify themes among doctoral students in relation to their experiences.

Focus Group and Survey

Researchers were unable to access program directors and conduct focus groups. Multiple attempts were made to connect with this group including email requests and phone calls. The researchers planned to conduct focus groups using the following method. All focus groups were to be recorded using a hand-held voice recorder. Prior to recording, all participants would read and sign an informed consent form (See Appendix G). Informed consent documents provide the participant an opportunity to understand the purpose of the study and agree to participation in the study (Creswell & Creswell, 2018). A paid transcription service would be hired to transcribe the focus groups.

Survey. In an additional attempt to collect data from program directors, researchers transitioned the focus group questions into 11 survey questions (See Appendix F). The survey

was sent to program directors via email from the researchers. Seven days later, the survey invitation was sent again to program directors by the Principal Investigator for the study.

Qualitative Data

Researchers used open and thematic coding to explore qualitative data. Benaquisto (2008) views the open coding process as an opportunity to open up the text prior to exploring specific themes. During the thematic coding process, the amount of data was reduced, drawing out only the most important information sets (Ayres, 2008). During this process, salient themes gleaned from review of participants' words and descriptions were identified by the researchers. Researchers reviewed and coded data and identified shared themes from coding. Once themes were determined, the researchers culled down the data using a thematic coding practice. The data collected from the qualitative research was used to draw deeper meaning from participants to identify themes associated with the research question. Themes were used to illuminate alignment to other data collected and research questions.

Reliability

Reliability "refers to the consistency or repeatability of an instrument" (Creswell & Creswell, 2018, p. 154). The survey instrument was evaluated through a test-retest process (Creswell & Creswell, 2018). The survey was issued to a beta group prior to survey launch with the College of Humanities and Sciences. This pilot test helped establish content validity (Creswell & Creswell, 2018). Feedback from the beta group assisted with construction of appropriate language and survey design. To maintain internal consistency, the researchers tested each question for question structure and stability (Creswell & Creswell, 2018). The beta group, which included eight doctoral students from the Virginia Commonwealth University School of Education, provided suggestions that aimed at clarifying questions.

Trustworthiness

Prior to analysis, identifiable information was removed for anonymity and protection of survey participants. During data analysis, only the researchers had access to the results. All data was housed on institution specific cloud storage for enhanced security. Any paper notes were kept in a locked file cabinet in one of the researcher's offices.

Limitations

The sample in this study represented a small number of students, faculty, and staff connected to doctoral education. The limitations of time and resources affected the researcher's ability to conduct a thorough examination of participants. In addition, the inability to secure focus group meetings with program directions as well as survey responses from program directors affected the amount and depth of data collected. While all doctoral students within the College of Humanities and Sciences had access to the survey, the self-selected group may suggest students most attuned to checking email were the ones who participated in the study. It is possible to draw the conclusion that students struggling within their program would not take time to complete the survey.

Summary

Students are interested and invested in degree completion, yet at the doctoral level, only half of the students who begin a program, achieve degree status. There is vested interest from students and administration, to identify activities and interventions that will lead to higher completion rates.

Using a mixed method design, the researchers surveyed current and past doctoral students and attempted to conduct focus groups with and survey program directors. The aim of this study was to explore the stages of the doctoral program and identify when students are most likely to

consider leaving their program. In addition, the study identified leading factors affecting attrition and potential student support mechanisms linked to higher completion rates. This pilot study focused on the Virginia Commonwealth University College of Humanities and Sciences.

Chapter IV: Results

Introduction

This chapter is organized to address each research question using supporting data to draw inference to the connection between student resources and support and their ability to confer a degree. First, it addresses the stage doctoral students are most likely to consider leaving a doctoral program by identifying factors that lead to attrition. It then addresses resources or avenues of support doctoral students need to successfully complete a doctoral program in the humanities and sciences at Virginia Commonwealth University.

Historically, doctoral degrees are reserved for distinguished students seeking the highest educational degree. Doctoral education is therefore arduous, weaning out the weak. The process spans three to ten years and includes coursework, supervision, writing, and research (Sowell et al., 2008). During their studies, students often find themselves struggling with the demands of doctoral education. As a result, only half of the students who begin doctoral programs confer a degree (Bowen & Rudenstine, 1992; Crede & Borrego, 2014; Sowell et al., 2008; Sowell et al., 2008a). Student attrition places a strain on university resources and impacts the health and well-being of students. Therefore, this research aims to uncover why students leave their programs, and potential interventions that can support student success.

This study examined doctoral graduation rates by exploring the student experience and identifying challenges students face during each stage of the degree conferral process. This study looked specifically at the College of Humanities and Sciences at Virginia Commonwealth University. This study explored one broad question and also sought to answer two subsequent questions. The questions for the study follow:

1. At what stage are doctoral students most likely to consider leaving a doctoral program in the humanities and sciences at VCU?
    a. What factors impact attrition in doctoral programs in the humanities and sciences at VCU?
    b. What resources or avenues of support do doctoral students need to successfully complete a doctoral program in the humanities and sciences at VCU?

The College of Humanities and Sciences at VCU offers 42 doctoral programs ("Graduate and Professional Studies," 2019). In Fall 2019, the college enrolled 63 new students, with a total of 318 active doctoral students ("Institutional Research and Decision Report," 2018). According to the Center for Institutional Effectiveness (Spring, 2020), the student make-up of the school is 63% female and 36% male. Related to race, 57% of the graduate population is White, 14% Black/African American, 12% international and 1% Asian, Hispanic/Latino, two or more races, or unknown. Faculty gender makeup is 51% male and 49% female ("VCU 2018 Fall Faculty," 2018). According to data provided by the Office of Institutional Research and Decision Support (2019), faculty are overwhelmingly White (72%), with Black/African American, Asian, Hispanic/Latino, and International faculty each making up less than 1% of the population.

Data Collection

In an effort to answer the research questions stated above, this study used a pragmatic approach to research. Described as a *problem-centered* approach, the pragmatic worldview allowed the researchers to adapt the process, focus on multiple models, and create a mixed method design (Creswell & Creswell, 2018). Through a survey, the research included qualitative and quantitative design. Researchers asked open- and close-ended questions to study participants, inviting respondents to explore and share their experiences with doctoral

education. The culmination of their experience resulted in data points, providing a "numeric description of trends, attitudes, and opinions" (Creswell & Creswell, 2018, p. 12).

The online survey, created and distributed using RedCap and validated using the Survey/Interview Validation Rubric for Expert Panel (VREP), consisted of 37 multiple-choice questions and five open-ended questions. Questions addressed demographics, the students' academic graduate school experience, and their emotional experience as doctoral candidates. The survey also asked about student resources as a tool that either helped or hindered progress. The survey was distributed by the VCU Graduate School and remained open for 25 days, with an email reminder sent at day 12 (See Appendix E). A total of 318 currently enrolled students and 86 students who stopped out had access to the survey.

At the close of the survey, the response rate was 33%. A total of 112 participants started the survey via the online surveying tool RedCap. After scrubbing the data for errors or incomplete responses, 106 data points remained valid and useful (n = 106). The average time taken to complete the survey was 10 minutes. The survey questions addressed the research questions proposed in this study. The make-up of the sample size is presented below, with a table-format available in Appendix H.

Of the 106 College of Humanities and Sciences doctoral students, 30 survey respondents were male, 74 female, 1 nonbinary/third gender, and 1 preferred not to disclose. This sample is a good representation of the population of doctoral students within the College of Humanities and Sciences, at 70% female and 28% male whereas the total population is 63% female and 36% male. The age of the students within the sample size ranged from 21-50+, with 79 respondents in the 21-29 range; 20 students between the ages of 30-39; and 7 students collectively between the ages of 40+. The breakdown of race/ethnicity is somewhat representative of the total

population, with 70% of respondents identifying as White, and 17% identifying as Black/African American.

Table 9

Race and Ethnicity

Race/Ethnicity	Count
Asian/Pacific Islander	14
Black or African American	18
Hispanic or Latino	8
Native American or American Indian	0
White	72
Other	3
Prefer Not to Say	1
TOTAL	116

Survey results indicated that 23% of the sample size identify as *first generation*, defined as students who are the first in their immediate family to attend a college or university (Swecker et al., 2013). In addition, 91% of students identify *graduate assistantship* as their primary method of funding. The majority of students who participated in this study are currently enrolled (95%) with 89% enrolled full time and 11% enrolled part-time.

Students surveyed began their studies between 2014 and 2019 with the majority of the students (24%) beginning in 2016 (See Appendix H). Based on research related to how students' progress through their doctoral programs, this data suggests that the majority of respondents are either in stage one, coursework; or stage three, dissertation. Demand on a students' time fluctuates during an academic program. West et al. (2010) link a student's ability to manage the demands of each stage of their program instrumental in their ability to confer a degree. At the

beginning of a program, students are vulnerable and in the *anticipatory stage* of their socialization (Gardner, 2008b). Respondents in an *anticipatory stage* may have different needs from students in stage three which is considered a time when students are most likely to feel isolated from their peers (Spaulding & Rockinson-Szapkiw, 2012). Respondents fell into each category, providing rich data linked to student needs and resources.

More specifically, of the 106 respondents, 52 students noted they are currently enrolled in coursework, 17 are preparing for qualifying exams, 18 have finished qualifying exams or comprehensives, 11 are preparing for their prospectus or proposal defense hearing, 12 have completed their prospectus or proposal defense hearing and 19 have an approved dissertation topic. Of the 106 valid respondents, 9 had scheduled a defense date at the time of the survey.

Data Analysis

The survey asked 42 questions in an effort to identify (1) the stages when students considered leaving their doctoral program, (2) the reasons behind a student's decision to consider leaving their doctoral program, and (3) the types of resources and support students sought while enrolled in their doctoral program. To address the research questions, students were asked to respond to different types of quantitative questions, such as yes/no, multiple choice, and Likert-type scale (See Appendix B).

Results from participant responses may assist in the understanding of how Virginia Commonwealth University can best support doctoral students during different stages of their program. Survey questions were designed to draw responses around the doctoral student experience. For example, students were asked to identify resources they utilized during each stage of their program, and how they managed stressful situations during their studies.

To summarize and analyze each research question, researchers used Microsoft Excel to calculate frequency and percentages. With only one categorical variable in each question, researchers used a chi-square test to determine statistical significance. The chi-square test "is based on a test statistic that measures the divergence of the observed data from the values that would be expected under the null hypothesis of no association" ("Two-way tables," 2017). Calculating the p value "requires calculation of the expected values based on the data" ("Two-way tables," 2017).

Research Question 1

The first research question explored whether students considered leaving their doctoral program at a specific stage. Survey questions 6-9, SL1-SL6, 10-11, and SL1a-SL1b addressed the first research question (See Appendix B). Research on attrition rates suggest students have different socialization needs at different stages in their journey, presenting an opportunity to provide resources aligned to a students' place in their doctoral journey (Gardner, 2008b).

Table 10

Research Question 1

Research Question	Null Hypothesis	Variable
At what stage are doctoral students most likely to consider leaving a doctoral program in the College of Humanities and Sciences at VCU?	Doctoral students are not likely to consider leaving during certain stages of a doctoral program in the College of Humanities and Science at VCU.	Stages of Study: Coursework / After qualifying exams or comps, and before my dissertation/prospectus defense / After my dissertation proposal/prospectus hearing, but before writing the dissertation / While writing by dissertation / Other

Researchers observed 77 responses with an expected value of 15.4 and a p value < .05; specifically, 1.36231E-10. This p value is significantly less than 1, which led the researchers to reject the null hypothesis. The null hypothesis indicated that doctoral students were not likely to consider leaving during certain stages of a doctoral program in the College of Humanities and Science at VCU. Findings suggest that doctoral students are likely to consider leaving their program during certain stages, particularly during coursework. Additional research, explored in research question 2 can deduce why students are leaving during each stage and administrators can develop interventions to better support students during each phase of their program.

Table 11

Chi-square Test: Research Question 1

Category	Observed	Expected
Coursework	39	15.4
After qualifying exams or comps, and before my dissertation/prospectus defense	18	15.4
After my dissertation proposal/prospectus hearing, but before writing the dissertation	9	15.4
While writing my dissertation	5	15.4
Other	6	15.4
TOTAL OBSERVED	77	
Expected: 15.4		
P value 1.36231E-10 or .0000000136%		

Research Question 2

The second research question explored the factors impacting attrition within the College of Humanities and Sciences at Virginia Commonwealth University. Only half of the students

who begin a doctoral program confer a degree (Di Pierro, 2012; Ehrenberg et al., 2007; Gardner, 2008; Jairam & Kahl, 2012; Van der Haert et al., 2014; Martinez et al., 2013; West et al., 2010). This research question aimed to identify why students leave their program. Survey questions 10-11, SL1c-d, 12, SL2a, and 13-37, directly or indirectly helped researchers explore the second research question (See Appendix B).

Table 12

Research Question 2

Research Question	Null Hypothesis	Variable
What factors impact attrition in doctoral programs in the College of Humanities and Sciences at VCU?	There are no factors that impact attrition in doctoral programs in the College of Humanities and Sciences at VCU.	List of Factors: Academic rigor of the program / Caretaking for family members / Change in Faculty / Conflict with Advisor / Disinterest in the course content / Financial Concerns / Job Opportunities / Lack of support from faculty/staff in my program / Lack of support from colleagues in my program / Personal physical health concerns / Personal mental health concerns / Time Management / Other

Researchers observed 196 responses with an expected value of 15.1 and a p value < .05; specifically, 2.38769E-12. This p value is significantly less than 1 and the researchers reject the null hypothesis. The null hypothesis stated that there were no factors that impacted attrition in doctoral programs in the College of Humanities and Sciences at VCU. Findings suggest that there are multiple factors affecting attrition, with many indicators pointing to financial concerns, faculty support, and mental well-being as primary concerns.

Table 13

Chi-square Test: Research Question 2

Category	Observed	Expected
Academic rigor of the program	11	15.07692308
Caretaking for family members	5	15.07692308
Change in Faculty	3	15.07692308
Conflict with Advisor	20	15.07692308
Disinterest in the course content	11	15.07692308
Financial Concerns	28	15.07692308
Job Opportunities	4	15.07692308
Lack of support from faculty/staff in my program	31	15.07692308
Lack of support from colleagues in my program	16	15.07692308
Personal physical health concerns	11	15.07692308
Personal mental health concerns	33	15.07692308
Time Management	14	15.07692308
Other	9	15.07692308
TOTAL OBSERVED	196	

Expected: 15.07692308

p value 2.38769E-12 or 0.000000000239%

Research Question 3

The final research question addressed resources or avenues of support available to students in the College of Humanities and Sciences Doctoral Program at Virginia Commonwealth University. Studies indicate social interaction and positive relationships with faculty and advisors are positively associated with degree completion (Denecke & Slimowitz,

2004). Survey responses linked to this research question include questions 12-37 (See Appendix B).

Table 14

Research Question 3

Research Question	Null Hypothesis	Variable
What resources or avenues of support do doctoral students need to successfully complete a doctoral program in the College of Humanities and Sciences at VCU?	There are no resources or avenues of support that doctoral students need in order to successfully complete a doctoral program in the College of Humanities and Sciences at VCU.	Resources or Avenues of Support: Academic Learning Center / Associate Dean of Your College / Career Services / Dean of Your College / Faculty/Staff in Your Program / Global Education Office / Graduate Program Director / Graduate School / OMSA / Ombudsperson / Rec Sports / Staff Person within My Program / Student Accessibility and Educational / Opportunity Office / University Counseling Services / University Student Health Services / VCU Libraries / Other

Researchers observed 223 responses with an expected value of 13.1 and a p value < .05; specifically, 1.86443-44. This p value is significantly less than 1 and the researchers rejected the null hypothesis. The null hypothesis stated there were no resources or avenues of support that doctoral students needed in order to successfully complete a doctoral program in the College of Humanities and Sciences at VCU. Findings suggest that students need support and resources to complete their degree programs.

Table 15

Chi-square Test: Research Question 3

Category	Observed	Expected
Academic Learning Center	4	13.11764706
Associate Dean of Your College	3	13.11764706
Career Services	2	13.11764706
Dean of Your College	2	13.11764706
Faculty/Staff in Your Program	46	13.11764706
Global Education Office	4	13.11764706
Graduate Program Director	21	13.11764706
Graduate School	11	13.11764706
OMSA	2	13.11764706
Ombudsperson	5	13.11764706
Rec Sports	20	13.11764706
Staff Person within My Program	16	13.11764706
Student Accessibility and Educational Opportunity Office	4	13.11764706
University Counseling Services	10	13.11764706
University Student Health Services	26	13.11764706
VCU Libraries	45	13.11764706
Other	2	13.11764706
TOTAL OBSERVED	223	
Expected: 13.11764706 P value of 1.86443E-44		

Findings

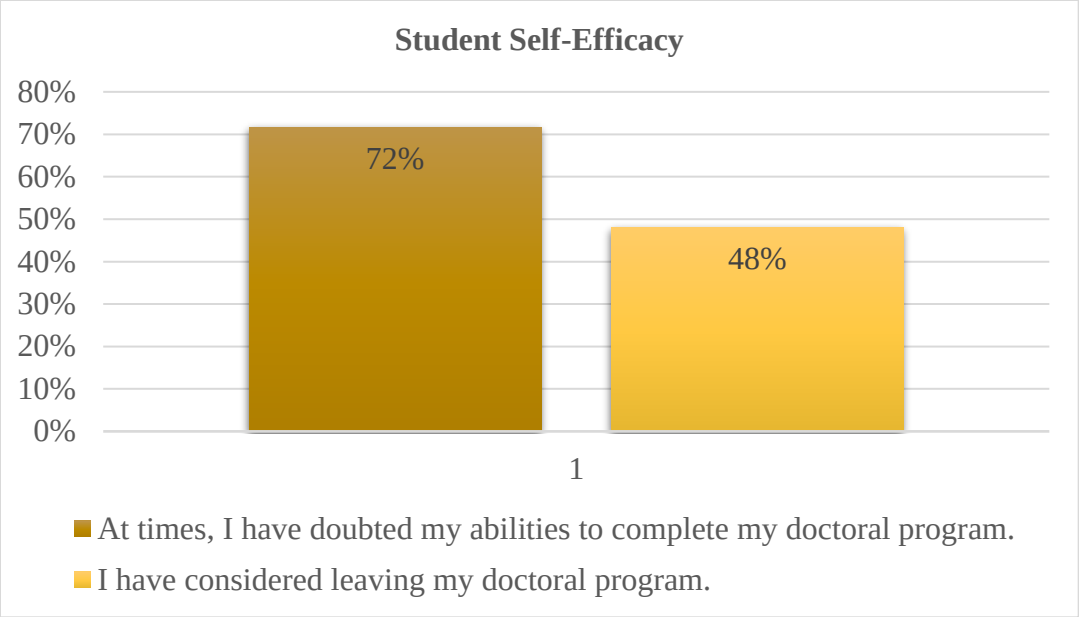
The quantitative survey responses provided a numeric narrative of the doctoral student experience within the College for Humanities and Sciences at Virginia Commonwealth University. The survey explored self-efficacy, support services, and frequency of engagement as indicators of a conferred degree. The survey measured a participant's overall degree of satisfaction with the program with 62% of respondents either highly satisfied or satisfied. However, a high level of satisfaction does not always lead to degree completion.

Self-Efficacy and Connection

Students need a mirage of support during an academic program; from family, friends, colleagues, professors, and advisors (Jairam & Kahl, 2012; Lake et al., 2018; Spaulding & Rockinson, 2012). In addition, students need to believe they are capable of conferring a degree. *Self-efficacy* is an individual's belief in his or her capacity to produce specific performance attainments (Bandura, 1977). Survey results showed that 72% of respondents have doubted their ability to complete their doctoral program and 48% have considered leaving their doctoral program. Aligning to Freeman & Kochan (2012) who indicate that successful completion is tied to belief in oneself, these figures suggest that intervention and emotional support measures that improve self-efficacy are critical aspects of degree completion.

Figure 6

Student Self-Efficacy

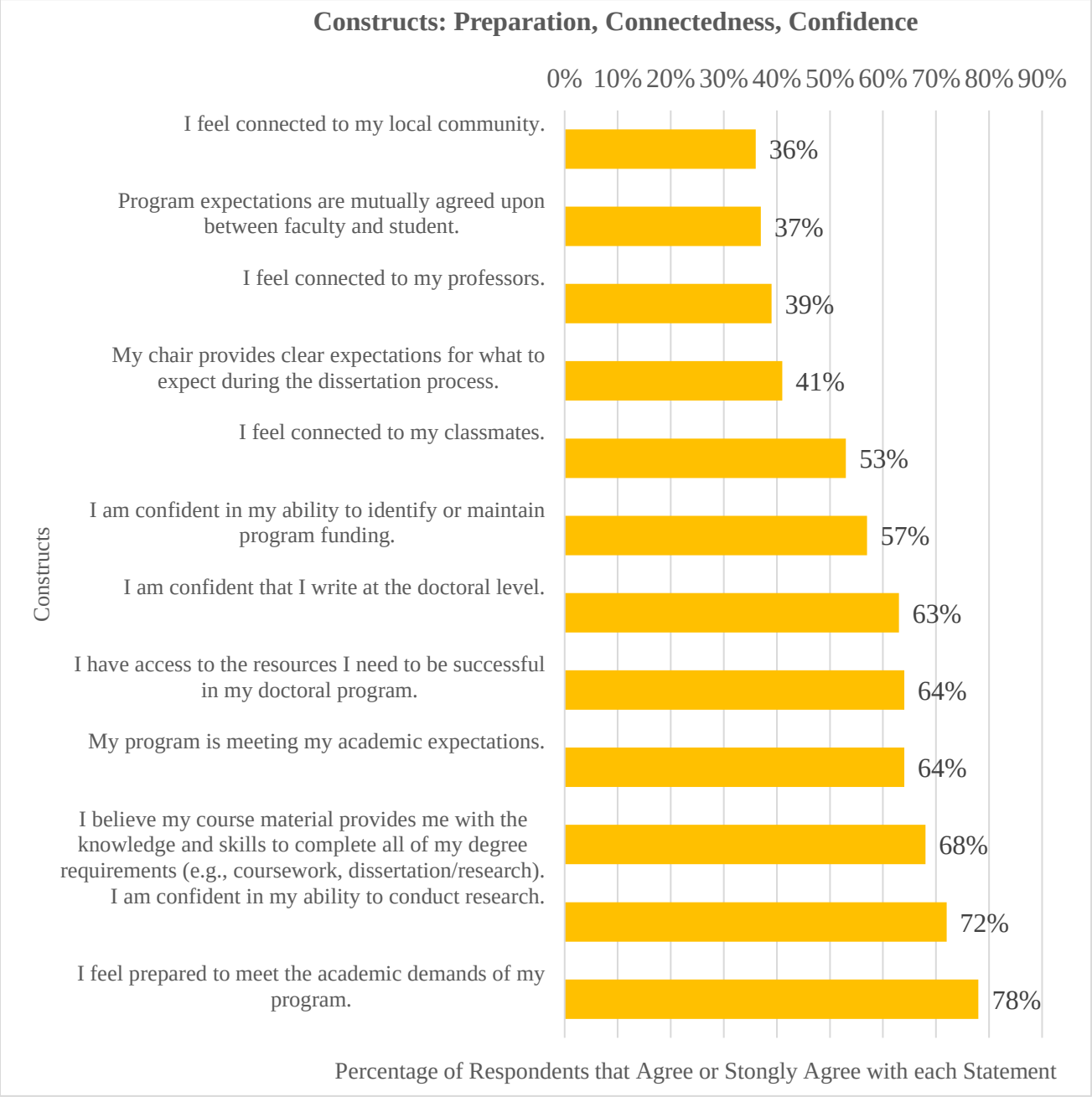


Diving deeper into the data, 71% of White students doubted their ability to complete their program, while 51% of students of color responded to self-doubt. However, research indicates a lower graduation rate among students of color, with many of them struggling to see themselves successfully completing a program (Gardner, 2008b). Exploring the data by gender, males and females had similar experiences related to feelings of doubts and ability to complete their degrees at 67% and 74%, respectively.

Respondents were asked a series of questions related to preparation, connectedness, and confidence. Lack of these attributes contribute to stress, which research suggests is an indicator of attrition (Jairam & Kahl, 2012). Stress is exasperated when students do not feel prepared or connected to others (Jairam & Kahl, 2012). Survey questions 17-28 asked students about their feelings of preparedness, connectedness and confidence while enrolled in doctoral education. The table below highlights respondents' level of agreement with each construct.

Figure 7

Respondents Level of Agreement to Statements Linked to Connection, Confidence, and Preparation



The table exploits areas for concern, by the respondent, around their ability to connect with their local community. The table also highlights program expectations as a source of stress for students. The data showed no significant differences when examining gender or race in

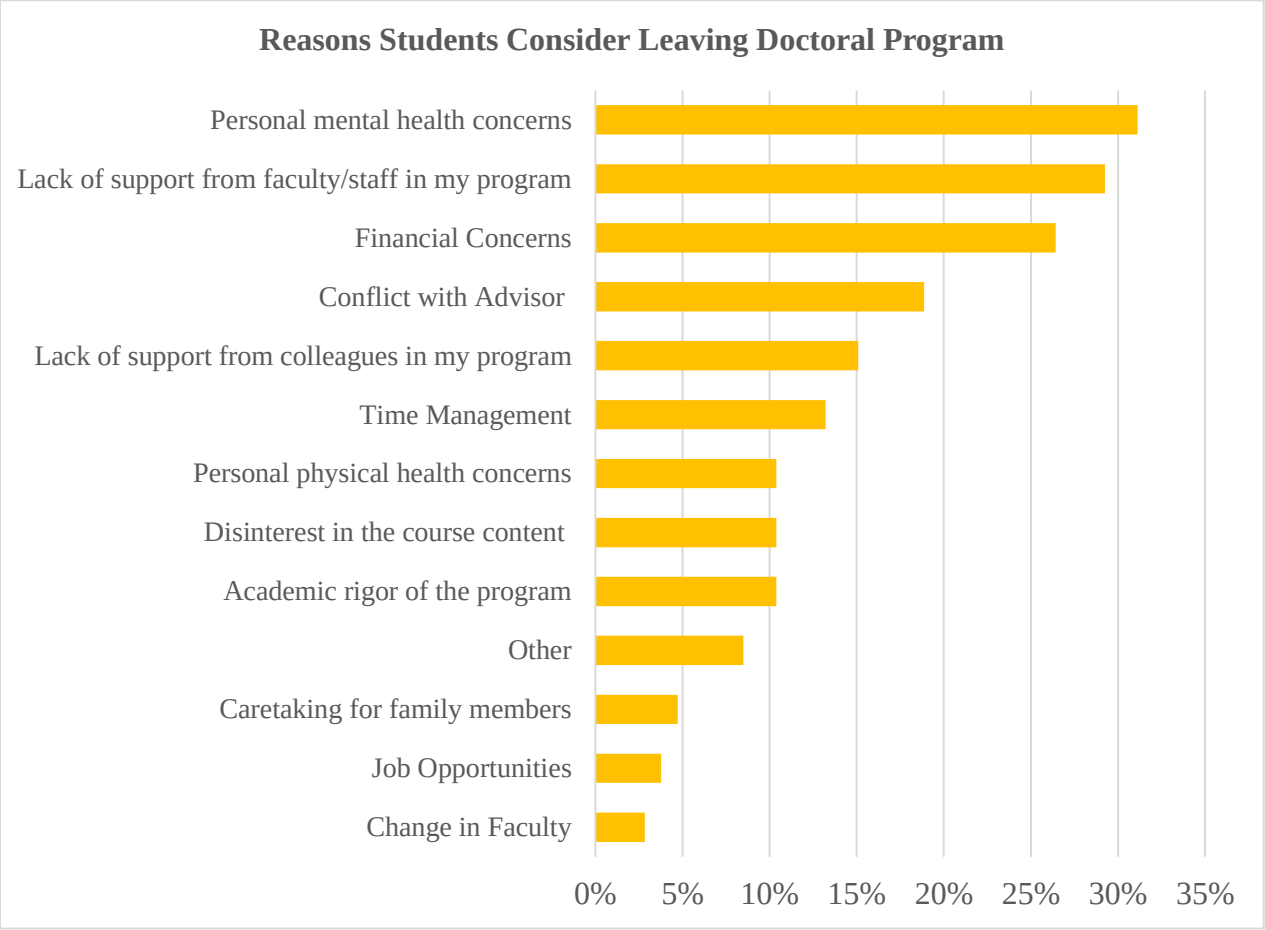
relation to preparation, connectedness, and confidence. All students, regardless of race or gender feel inadequate and unprepared at some point in their quest for degree attainment.

Internal and External Forces Affecting Attrition

The majority of students considered leaving their doctoral program during the coursework phase of their program (37%); however, they persisted. Students who considered leaving their program listed multiple reasons. Holistically, top reasons included financial concerns (26%); lack of support from faculty/staff in the program (29%); and personal mental health concerns (31%).

Figure 8

Reasons Students Considered Leaving Doctoral Program



Males were more likely to consider leaving programs because of changes in faculty and job opportunities (13% respectively, compared to 3-6% ratings from female students), while female students considered leaving due to time management concerns (35% more likely than their male counterparts). There were significant differences related to leaving a doctoral program based on race. Students of color students were 10% more likely to consider leaving their program to take care of family members. White students were 27% more likely to consider leaving due to a conflict with their advisor, or due to disinterest in the course content. White students noted they were 35% more likely to leave due to a perceived lack of support from faculty and staff in their program, 34% more likely to leave due to lack of support from colleagues, and 47% more likely to leave for personal mental health concerns.

Examining supporting evidence to identify the reasons behind these differences, the researchers explored the faculty make-up at the College of Humanities and Sciences at Virginia Commonwealth University and learned that faculty are overwhelmingly White (72%), with Black/African American, Asian, Hispanic/Latino, and international faculty making up less than 1% of the population (Office of Institutional Research and Decision Support, 2019). Findings suggest attrition goes beyond gender and race, and may be linked to departmental culture (Gardner, 2008b).

Avenues of Support

Support comes in many forms. For students enrolled in a doctoral program, support includes human resources available to students such as faculty members, colleagues, advisors, family members and friends, and program resources. Program resources include physical spaces, documents, or events designed to help the doctoral student navigate their program. Students are

encouraged to reach out to support systems, yet many students fail to connect because they are afraid to ask for help or fear they will not fit in (Gardner, 2008b).

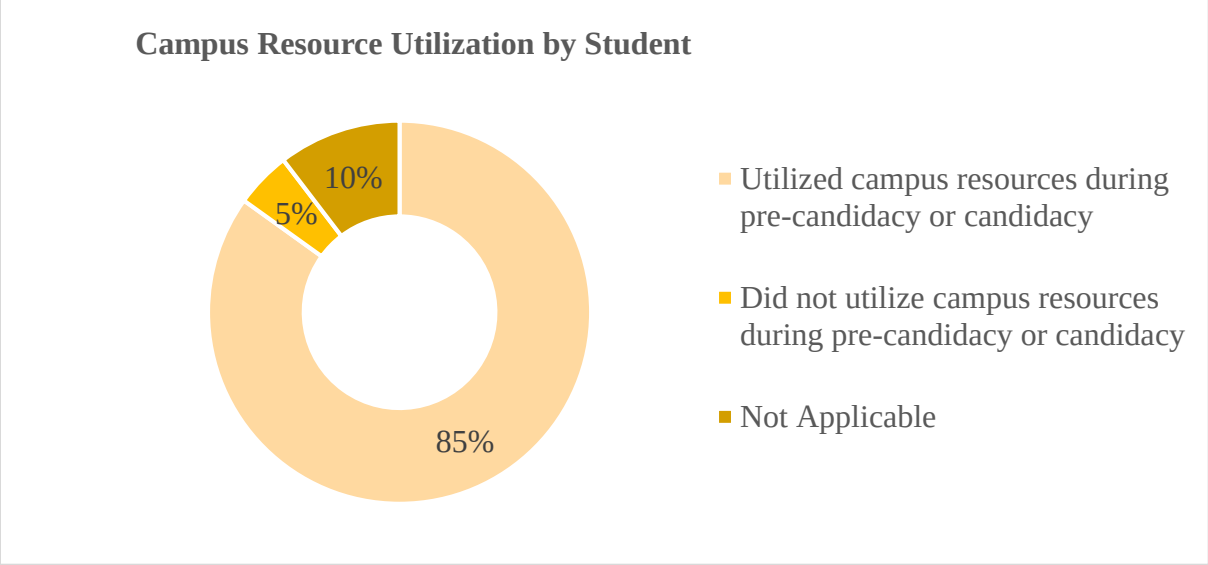
Approximately half of the students that considered leaving their program, regardless of race or gender differences, spoke to someone about their intent. Students were most likely to talk to a colleague or friend about their intent to leave (14%), while only 5% of students spoke of their intent to a faculty member or advisor. This data was consistent across gender and race with no one group successfully navigating supporting resources. Literature supports what the data suggests; many students feel isolated and unsure of how to navigate the complex path towards degree completion. Isolation, or a feeling that others do not understand what a person is experiencing or feeling, negatively impacts the completion of a doctoral degree (Lake et al., 2018; Martinzez et al., 2013).

Research on doctoral student retention suggests correlation between engagement and completion (Spaulding & Rockinson-Szapkiw, 2012). Of 106 respondents, over half engage in the community outside of their studies (59%). Students reported engaging in weekly (49%) and monthly (40%) activities or community events. Research also suggests support as a major factor in student success. Similar to engagement, a student's ability to connect to useful resources during their program is critical for a positive outcome (West et al., 2010). Related to academic support, 82% of respondents reported knowing where to go in their department for assistance related to their coursework. However, for emotional support, only 48% of survey respondents reported knowing where to go within their department. These numbers were consistent regardless of race and gender. Campus resources appeared to be in higher demand pre-candidacy, with 55% of respondents utilizing these services early in their tenure, versus 33% of students during candidacy.

Colleges and universities offer a wide array of support systems to help all students find success while in school. Results conveyed that the majority of students utilize some form of campus resources during their program.

Figure 9

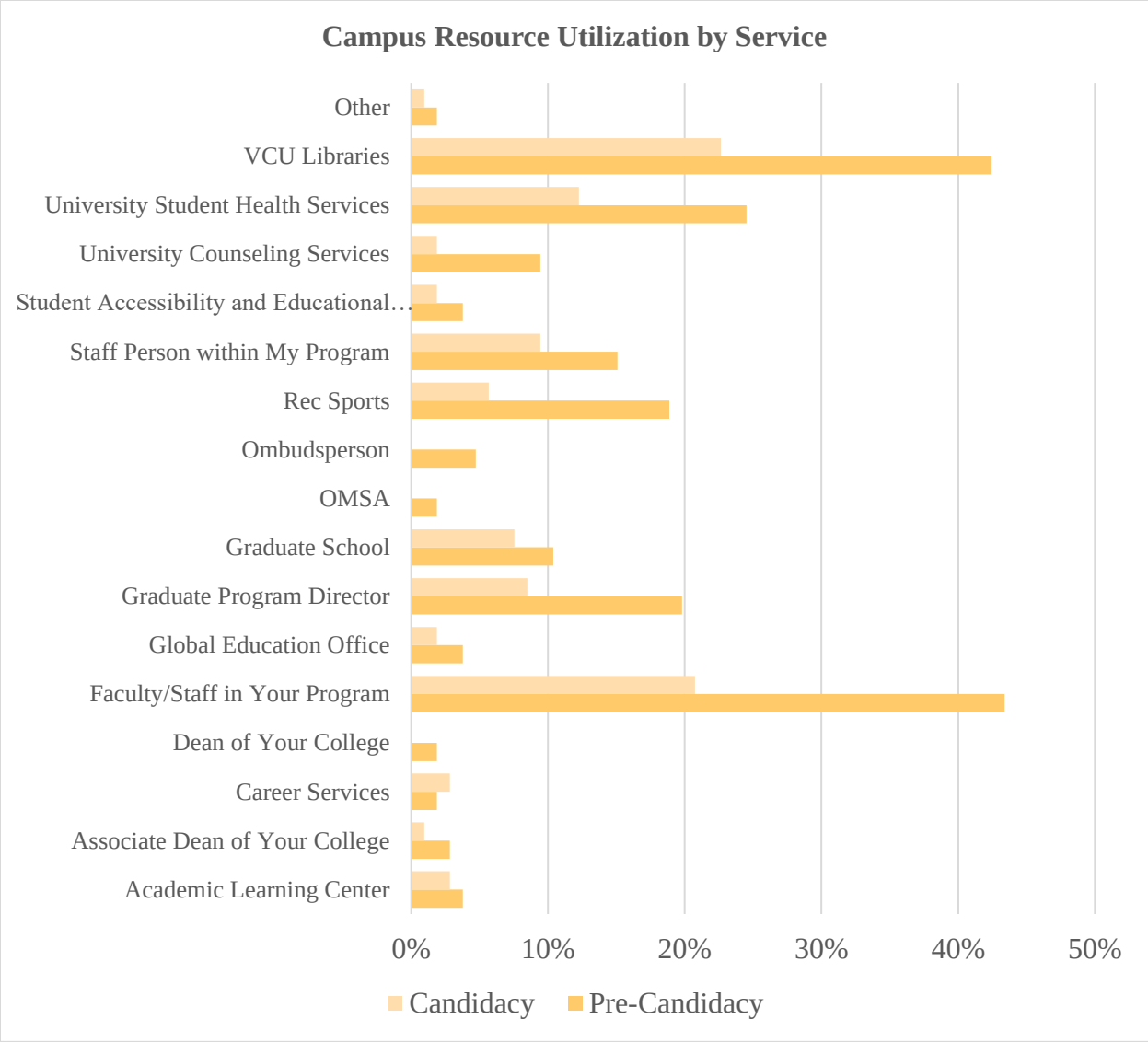
Campus Resource Utilization by Student



According to survey results, students used resources differently depending on their candidacy status (see figure below). However, the most utilized services throughout a students' time in a program included communicating with Faculty/Staff in the program area and support through the VCU libraries system.

Figure 10

Campus Resource Utilization by Service



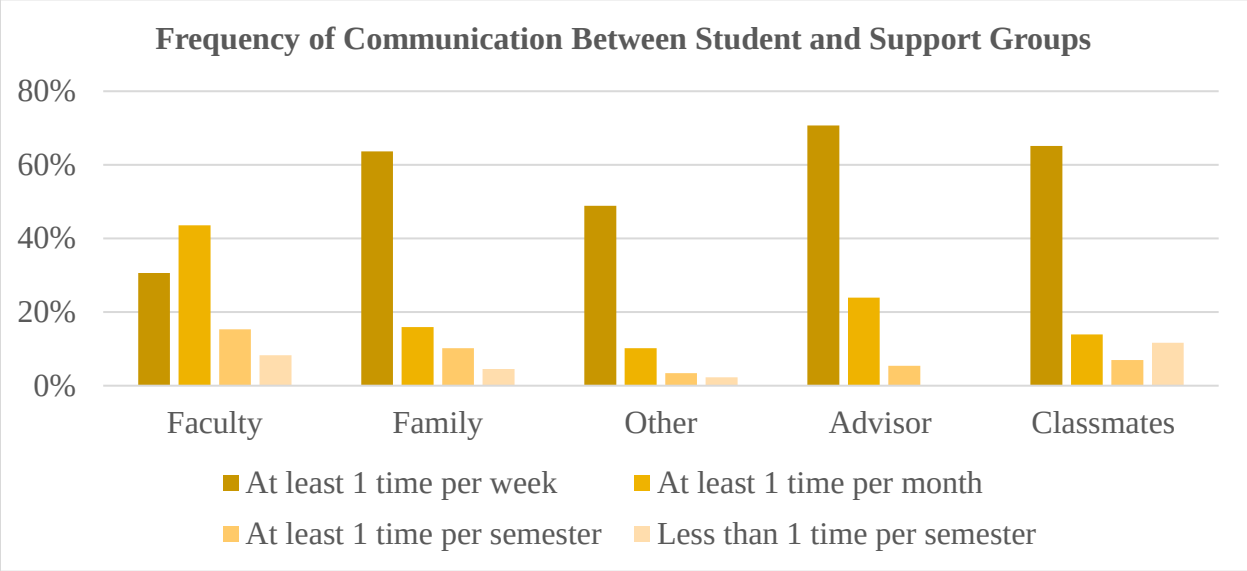
In general, there was a decline in services utilized during candidacy. In some instances, the decline was significant. For example, of respondents in candidacy, only 21% reported using faculty/staff resources compared to 43% of pre-candidacy respondents. The utilization of library services also dropped in half leaving unanswered questions around the type of resources candidates need, or how candidates engage with the community in this phase of their program. It is possible that the small sample size of students in stage 3, or candidacy, affected response data.

In general, the survey found most respondents are in consistent communication with their advisor, with 71% of respondents reporting they speak with their advisor at least one time per

week. Respondents also reported weekly communication with their family (64%) and other classmates (65%). These numbers were consistent regardless of race and gender.

Figure 11

Frequency of Communication Between Students and Support Groups



Related to communication between students and advisors, the most common method of communication was face to face (34%), followed by email (33%) and text (15%).

Barriers to Degree Completion

In order to further understand the experience of doctoral students in the College of Humanities and Sciences, short answer questions were asked and qualitative data was retrieved (See Appendix B). Responses were reviewed and organized through an open and thematic coding process (Benaquisto, 2008). Information was labeled based upon content and themes consistent with factors that impact completion and factors that promote completion as identified in the literature review. Consistent with the literature from chapter 2, statements were coded thematically into the following categories as factors that impact completion: stress, isolation, incoming skills, advisor/supervisor, program expectations, personal circumstance, and resources.

Factors that promote completion were broken into the following themes when coded: orientation, social support, personal commitment, and graduate support center.

Doctoral students in the College of Humanities and Sciences identified and described a myriad of factors that negatively impacted their pursuit of the doctoral degree. Students were asked to describe "the biggest challenges" they faced in their doctoral program by providing a short answer response. The most frequently cited challenge related to program expectations followed by personal circumstances, resources, and experiences with an advisor or supervisor. Students' concern regarding program expectations were directly linked to their perception of a lack of clarity regarding progression through the program and time management.

Program Expectations

Challenges related to program expectations were identified 21 times within the qualitative data specifically asking doctoral students to speak to "the biggest challenges" they experienced in their program. Students described an ambiguous and inconsistent process related to moving through the program. This is consistent with Gardner's (2008a) research which suggests that students do not receive enough guidance as they transition from the coursework phase of a doctoral program to the dissertation phase.

One student explained "[i]t seems like the expectations to graduate change every semester. I am subjected to whatever help they need in the department because I am a graduate teaching assistant. The commitments are often so rigorous that I am unable or struggle to complete my research." Similarly, another student said,

> I feel like there [are] a lot of unspoken tasks/milestones that are not discussed. I am a planner and I ideally would like to know what specifically is expected of us in regard to

> thesis, comps, and dissertation, yet when asked, the answer is often about how we'll find out when we get there.

Feedback further indicated not knowing what the requirements of the program are or how to find out what is expected at each stage. This collection of qualitative data supports the quantitative data suggesting that students consider leaving their program due to lack of support (See Figure 10).

Another student cited the desire to understand "the overall step by step process through the program" as the biggest challenge. Additionally, another student noted a lack of clarity as well as communication when they identified barriers as, "Lack of clear program information. It is an interdisciplinary program but [it] does not have the effective communication needed to function as [an] interdisciplinary program." This is consistent with research that suggests that unclear expectations from faculty and lack of communication from advisors can become barriers for students working toward degree completion (Ehrenberg et al., 2007; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012; West et al., 2012). A secondary theme emerged related to time management and program expectations.

Students consistently described difficulty managing the amount of work across their roles as students, teaching assistants, and researchers. One student identified the biggest challenge as "finding the balance in distributing my time between research and classes." Students stated, "finding time," "balancing classes and research," and "multiple demands of schoolwork, research, teaching." Another participant explained the "biggest challenge" as, "feeling like I have been spread too thin across multiple domains. Between research, classwork, clinical work, and assistantships, I have been working 60-80 hours per week for 4.5 years. It is not sustainable." While program expectations were identified most frequently, personal

circumstances accounted for the next most frequently cited challenge and were cited across 20 responses.

Personal Circumstances

Many of the personal circumstances described by students as the biggest challenges were associated with aspects of mental health and "overcoming burnout." Students' experiences were consistent with literature as Spaulding and Rockinson-Szapkiw (2012) described the impact of stress and feeling burnt out on degree completion. One student explained difficulties managing "health diagnoses and dealing with chronic illnesses, and a learning difficulty." Similar to quantitative data suggesting a lack of self-efficacy as an indicator to stop out, another student specifically identified "self-motivation" and "imposter syndrome." Students also identified situations related to family; parents, partners, pregnancies, and death of family members. Concerns pertaining to balancing family life and academic responsibilities were also cited in literature as research suggests students felt as though they could not maintain the multiple identities of parent, spouse, and student (Spaulding & Rockinson-Szapkiw, 2012; West et al., 2010).

Lastly, students described conflict across cohorts with multiple examples of "racial tension." Another student expanded on the stress and tension and explained, "Fellow graduate students won't talk to me. They think (and have openly said so) that because I'm White I must be a Trump supporter and racist." A sense of isolation was identified as a barrier in the literature (Lake et al., 2018; Martinez et al., 2013). Gardner (2008) also identified the importance of cohesion within a program and the link to academic success. The "competitive environment" was also named as well as difficulties with asking for help.

Other concerns related to personal circumstances were identified when students were asked for general feedback related to the doctoral experience, one student explained "Honestly, if I had to do it all again, I wouldn't. Graduate school was a terrible decision for myself. I didn't feel supported at all, especially near the end of the program." Similarly, another student said,

> My mental health hit an all-time low during this experience and I almost dropped out as a result. I still don't feel like I belong in this program and I'm not sure it will ever be worth the effort I continue to put in. I feel cheated with the grades I have received and have no idea how I'm performing relative to my classmates in research.

Beyond personal circumstances, access to various resources was the third most frequently identified challenge within the qualitative data.

Resources

Respondents cited concerns about resources 49 in their qualitative responses. The following resources were identified: financial (also referred to as funding), health insurance, mental health counselors, administrators within the college to express concerns to, mandatory cultural competency training for faculty, staff, and students, and training for mentors about mentorship. Lack of financial resources or funding was referenced 31 times across responses to the five qualitative questions. Financial concerns were also cited in literature as was linked to a student's ability to complete a doctoral degree (Di Pierro, 2012; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012; West et al., 2010).

Students reported difficulty managing employment to make ends meet in addition to participation in a full-time program. Students named a lack of health insurance provided by the institution 18 times in responses to three questions as a significant challenge. Related to health

insurance, students identified a desire to pursue counseling and noted that a lack of health insurance prevented them from obtaining mental health services.

When students were asked if there was additional information they wanted to provide, one student said "Healthcare, without reducing or even increasing the doctoral stipend, could be a big support for struggling adults who are attending a demanding doctoral program full-time and need support to take care of their well-being mentally and physically." Another student shared a similar thought and said "I have spent some time feeling regret over not choosing a university which offered a livable stipend as well as health insurance." A third student explained "The healthcare and mental healthcare access for graduate students is awful. We are already paying so much out of pocket for our education that we cannot afford a high deductible plan." While graduate students can use student health, not all services are covered through these services (e.g., after hours care or dental/eye exams). Unfortunately, not all students can participate in services that are offered by the university. For example, doctoral students in the psychology department cannot use University Counseling Services for mental healthcare and are faced with seeking expensive services in the community. The fourth most frequently identified challenge within the qualitative data was related to students' experiences with their advisor or supervisor.

Advisor/Supervisor

Students cited challenges with their advisor or supervisor across 13 responses. A respondent explained "[m]y advisor and I were not able to select clear goals." Another comment indicated a challenge because "my advisor never responds back in time and so my work gets delayed." Another respondent described a challenging advisor by indicating the advisor was "hands off." An additional student described often feeling "micromanaged" by their advisor. A student cited pressure from their advisor and indicated the experience of a "publish or perish

culture." A student's relationship with their advisor was described in literature as vital for success as a doctoral student (Martinsuo & Turkulainen, 2011). While personal circumstances, resources, and advisor/supervisor were identified through thematic coding as the major barriers to degree completion, additional challenges were identified through the qualitative responses. The remaining responses pertained to challenges within the following themes: stress, isolation, and incoming skills.

Stress, Isolation, and Incoming Skills

There were seven comments pertaining to stress as a substantial challenge. Many students cited simply "stress" as a response. Other respondents expanded on their response and cited family, academics, racial tension, and friends as triggers for stress. Five responses identified incoming skills as a challenge. Scholars have indicated that research skills are directly linked to degree completion and the importance of eliminating weak candidates during the selection process (Shariff et al., 2015; Denecke & Slimowitz, 2004). While a student identified "understanding the research" as a barrier, students also described "learning how to write at a competent level," and "weak training in statistics courses" as struggles. Another student said "coming in without a Master's degree I did not feel I was adequately prepared for the type of writing I had to do for my courses. I often feel overwhelmed and am unsure where I stand relative to the abilities of other doctoral students."

The last challenge students identified was a sense of isolation. Three respondents shared. One student noted a "lack of emotional support." Another student indicated "it feels like I am largely on my own for collecting data and writing up manuscripts." The third student cited a sense of isolation related to race and gender identity. Gardner (2008a) described the impact isolation can have on degree completion and reported struggles doctoral students can experience

related to social integration, fitting in, and feeling different. Additionally, Gardner (2008a) noted a tendency for under-represented students to feel different and as though they do not fit in and she reported a correlation between sense of isolation and degree completion. In addition to the challenges that students identified, students were also asked an open-ended question to describe how they are overcoming challenges.

Factors That Promote Degree Completion

The most frequently cited avenues for overcoming challenges were social support and personal commitment. Within the qualitative data, there were 19 statements related to social support and 10 statements related to personal commitment. Students described multiple avenues for social support inside and outside of academia and from personal and professional networks. The data aligns with the quantitative responses from students suggesting social support and personal commitment as indicators of conferring a degree.

Social Support

Students cited the importance of community and connection which is consistent with literature which links social support with degree completion (Denecke & Slimowitz, 2004; Spaulding & Rockinson-Szapkiw, 2012). Numerous students cited seeking support from their own cohort and building upon those relationships while in the program. Another student indicated "I built a strong network of professionals through conferences, internships, and additional fellowships." Multiple students identified seeking support from mentors and colleagues at other universities.

Consistent with research, students looked to their personal lives for support through their family, friends, and partners (Spaulding & Rockinson-Szapkiw, 2012). One student indicated "I have a very good social support system that I rely heavily upon." Another respondent said "I

have relied on my family for financial and social support. They encourage me to keep pushing forward." Several students cited support from a therapist. A few respondents indicated having a supportive advisor in their program. Lastly, one respondent indicated seeking support "from older students." In addition to social support, students have overcome challenges through their own personal commitment to degree completion.

Personal Commitment

Research by Martinsuo and Turkulainen (2011) and Rockinson-Szapkiw (2012) suggested that a student's personal commitment to completing the degree is necessary to complete the research and dissertation. Respondents described personal commitment in various ways. One student indicated overcoming challenges by "[w]orking hard, establishing deadlines, and accepting that I will not get the grades that I am use to for the meantime." Another student explained "[h]onestly I have just been trudging through the obstacles as they come." A second student described overcoming challenges "by doing things on my own and not expecting my advisor to be able to help." Further a student described personal commitment by saying they tend to work "as fast as I can so I can leave." Yet another student described their approach by saying they "[j]ust put [their] head down to finish the work." Similarly, another student said "[j]ust...doing it I guess?" and another student explained they "[g]rin and bear it. I literally have no choice so I try to ignore it." Some responses described overcoming challenges by engaging in aspects of time management and organization as well as connection with religion and spirituality.

While there were numerous references to ways in which students were overcoming challenges, there were also five responses where students admitted they had not determined a way through the challenges. Those responses included statements like "I am actively struggling

with these topics every semester. I have not found resolutions for these things" or "I am still working on overcoming this challenge" and "I don't know that I have totally, I feel like I have just become more at peace with the unknowns."

When students were asked about additional information they would like to provide, one student indicated an aspect of personal commitment. Another student said "[i]t's very stressful, but it's worth it and I know I'll finish one day." A third student responded and said "I feel very depressed every time and have no option but to finish my program since I have no way out." Additionally, another student reported "It's the longest, hardest marathon of my life. I think the structure of doctoral programs is just flawed. The immense workload/responsibility with very little financial help is overwhelming and makes it incredibly challenging to get through." Personal commitment and social support were identified as avenues promoting degree completion. However, within each of these constructs, respondents identified challenges. Students referenced a sense of isolation and a lack of inclusivity connected to aspects of diversity as barriers within the constructs of personal commitment and social support.

Inclusive Environment

Students were asked about ways in which their program promotes an inclusive environment. The responses from students varied. Ten responses indicated a sense of isolation and a lack of inclusion. Conversely, 16 responses indicated that program expectations support an inclusive environment and six responses described a supportive environment.

Isolation

Four students indicated "it doesn't" when asked about ways in which their programs promote an inclusive environment. Twelve students specifically cited ways in which they disagree that their programs offer an inclusive environment. One student indicated that the

environment is only inclusive "for Black students." A second student stated "[i]nclusive of whom? Diversity in programs is limited to whatever the particular program decides to emphasize, e. g., race or gender, but usually not both or beyond those two 'hot' issues." Similarly, another student explained "[t]he program promotes inclusion in terms of race/ethnicity but lacks total awareness about other types of diversity." Also, some students explicitly identified lack of inclusivity by saying "there appears to be a racial divide among students" or inclusivity is "on the website. Strictly for show." Lastly, when students were asked if there was additional information they wanted to provide, one student said "I have been let down. Before I joined, I thought the ... program would be the one place in society where people from different backgrounds could come together and converse. I was sorely disappointed." In contrast, numerous respondents spoke to avenues in which their programs did feel inclusive through program expectations.

Program Expectations

Feedback indicated that students are aware that aspects of diversity are prioritized as it relates to recruitment across the programs. Other comments mentioned a focus on diversity or multicultural talks and seminars as well as receptions and opportunities for students and faculty to interact across cultures. One student explained "There is a required diversity course, pronouns are asked in each first class of all my courses, and researchers of different backgrounds are discussed." Another student said "They try really hard to integrate issues of multiculturalism and intersectionality into the coursework, clinical work, and all other training. It is not always well-received by students, but I see them trying. I think sometimes they overcompensate and this can lead students with certain identities (LGBTQ, for instance) feeling unseen." Overall, there

were multiple comments from students who indicated they believe their program provides an inclusive environment.

Social Support

Twenty-five responses indicated that they do believe their program is inclusive. Some students named inclusivity related to numerous interactions between students regardless of aspects of diversity. More than one student noted "[t]he TA offices were situated very close to each other, which allowed the graduate students to become friends and close colleagues." Another student said "I do think professors' value and make time for unique perspectives shared by all students." When students were asked if there was additional information to share, one student said "[w]hile challenging at times and occasionally both mentally and physically exhausting, I still value how much I have improved as a researcher, how much I have grown as person, and appreciate all the people I have met along the way from joining this program." Similarly, another student explained "I'm gonna finish, but it's because of sheer force of will and the continuous love and support of my partner and family." Another student spoke to the cohesion of their cohort and said "I think about quitting every day but I haven't yet because our cohort is so close and I don't want to lose them." Cohort cohesion is also cited in the literature as students often persisted because they felt connected to and supported by cohort members (Lake et al., 2018).

Summary

This study yielded data from 106 doctoral students in the College of Humanities and Sciences at Virginia Commonwealth University for a 33% response rate. The respondents were a sample representative of the population of doctoral students currently enrolled in the College of Humanities and Sciences as it relates to gender and race/ethnicity. Quantitative and qualitative

survey data was collected from respondents to better understand a student's experience during their path towards candidacy. Specifically, the data informed the researchers around a student's consideration of stopping out, the type of barriers students encounter within each stage of their program, support students look for at different stages of their program, and interventions students look for to support their well-being while pursuing doctoral education.

Researchers rejected the null hypotheses and identified several conclusions. Researchers concluded that doctoral students are likely to consider leaving during certain stages of a doctoral program in the College of Humanities and Science at Virginia Commonwealth University. Additionally, researchers were able to maintain that there are factors impacting attrition in doctoral programs in the College of Humanities and Sciences at VCU. Lastly, researchers ascertained that there are resources or avenues of support that doctoral students need in order to successfully complete a doctoral program in the College of Humanities and Sciences at VCU. The qualitative data expanded on each conclusion.

An open and thematic coding approach suggested that doctoral students in the College of Humanities and Sciences at VCU experience challenges completing their degree that are consistent with challenges derived from literature. Challenges were described as personal circumstances to include mental health, physical health, balancing family and academic responsibilities, and racial tension within cohorts. Access to resources was identified as problematic and resources were defined as financial, health insurance, mental health counselors, accessibility to administrators, cultural competency training, and mentor training for advisors. Lastly, challenges pertaining to advisors/supervisors were cited.

Respondents noted factors that promote completion of the doctoral degree. Examples of social support were identified as well as aspects of personal commitment. Some respondents described their doctoral programs as inclusive related to aspects of diversity and others did not.

The data created a robust picture of doctoral students' experiences across the College of Humanities and Sciences and provided support towards the researchers' recommendations on improving the doctoral student experience and working toward decreasing attrition within the College. Chapter five will further elaborate on a discussion of findings limitations, and provide recommendations for the Graduate School as it relates to retention and attrition among doctoral students in the College of Humanities and Sciences at Virginia Commonwealth University.

Chapter V: Discussion

Introduction

This study, initiated by the Graduate School at Virginia Commonwealth University, aimed to uncover data pertaining to when doctoral students consider to and/or leave their programs and reasons related to that decision. Despite a 70% graduation rate for doctoral students in the College of Humanities and Sciences, Virginia Commonwealth University (VCU) Graduate School identified a goal to increase retention for doctoral students. In an effort to understand attrition, information was needed pertaining to the doctoral student experience. Doctoral students were offered the opportunity to provide information in the form of survey responses and quantitative and qualitative data were collected. Specifically, the study was built upon the following research questions:

1. At what stage are doctoral students most likely to consider leaving a doctoral program in the humanities and sciences at VCU?
    a. What factors impact attrition in doctoral programs in the humanities and sciences at VCU?
    b. What resources or avenues of support do doctoral students need to successfully complete a doctoral program in the humanities and sciences at VCU?

The data derived from respondents described doctoral students' experiences to inform researchers of avenues to address doctoral student attrition and inform retention strategies within the College of Humanities and Sciences at VCU. By identifying barriers to degree completion, data also informed interventions to improve the doctoral student experience. This research aims to increase retention from historical graduation rates of 50% for students pursuing a Doctor of Philosophy (Ph.D.) degree. This chapter summarizes findings from the research, addresses

limitations of the research, proposes recommendations to improve the doctoral student experience, identifies implications for practice, and suggests avenues for further research.

Summary of Findings

The study findings have three foci. First, findings reveal whether students consider leaving their doctoral studies during certain stages. Additionally, findings identify factors that impact attrition. Lastly, the findings highlight resources and avenues of support doctoral students need to successfully complete their program.

Stages When Doctoral Students Consider Leaving

Of 77 doctoral student respondents, 51% indicated they considered leaving their pursuit of the doctoral degree during the coursework stage. Twenty-three percent of respondents considered leaving after qualifying exams or comps, and before the dissertation/prospectus defense. Twelve percent of respondents considered leaving after the dissertation proposal/prospectus hearing, but before writing the dissertation, and 14% considered leaving while writing the dissertation or at another point across the stages of their program.

Research suggests that students tend to leave at each stage of the doctoral program, for varying reasons. While doctoral students do not tend to leave a doctoral program during the coursework stage out of unfamiliarity with how to complete coursework, other barriers, such as lack of interest or family circumstance are noted reasons for attrition (Garder, 2008a). The coursework stage is something they know how to overcome because they have experienced it in the past. The stages following coursework (qualifying exams/comps, dissertation/prospectus defense, writing the dissertation) are generally new experiences for students and according to research, students lack an understanding of how to move through the later, unfamiliar stages (Gardner, 2008a). However, at the outset of their journey to obtain a doctoral degree, students

have invested limited time and money and their decision to terminate the pursuit holds fewer losses. Consistently, doctoral student respondents indicated persevering through difficulties in their doctoral programs because they had committed too much time and money to leave without a degree.

Factors Impacting Attrition

Doctoral student respondents identified a myriad of factors that impacted their progression through the program. The reasons students were most likely to consider leaving their program as reported in the quantitative data were financial concerns, lack of support from faculty/staff in the program, and personal mental health concerns. Conversely, the barriers cited most frequently by students from the qualitative data were related to personal circumstances, unclear and inconsistent program expectations, and access to resources. Doctoral student respondents identified engaging in negative coping skills in order to persist. Students noted doing things on their own, isolating, struggling through, and persisting because they felt as though they could not back out due to financial commitment.

The impact of doctoral students persisting despite barriers is substantial. Doctoral students are prioritizing academics while experiencing financial stress, mental health concerns, isolation, and difficult personal circumstances. Mental health and student wellness may be ignored, and needs were unmet according to qualitative responses where respondents noted an inability to obtain mental health support due to lack of health insurance and an inability to cover costs out of pocket if they were ineligible for services through the student counseling center. Additionally, respondents noted additional stress related to an inability to receive the healthcare needed due to limited resources at student health centers, and a lack of health insurance and finances to seek services outside of the university. Respondents indicated feeling

as though they were expected to prioritize academics over physical and mental health since health insurance was not provided by the university and campus services were limited.

Respondents indicated a tendency to engage in aspects of negative coping in order to complete their degree so they could be competitive for employment, contribute to the development of research, and so they would have a degree to show for the money they spent or the student loans they accumulated (Jairam & Kahl, 2012). Aspects of negative coping can include isolating from family and friends due to perceived time constraints, not accessing healthcare or mental health services due to lack of financial resources, and lack of sleep or relaxation due to juggling academic responsibilities and outside employment to meet financial needs. Research suggests that students who receive financial support from the university through research fellowships or assistantships tend to be more successful academically than students who are self-funded (Bowen & Rudenstine, 1992; Van der Haert et al., 2014). This is related to time management and students having more time for academics when they are not having to allocate time to outside employment (Bowen & Rudenstine, 1992; Van der Haert et al, 2014;). Students were more likely to graduate with honors when they received financial support from their university (Van der Haert et al, 2014).

Resources and Avenues of Support Needed

Doctoral student respondents identified numerous concerns pertaining to resources. Students noted uncertainty as to who to go to for emotional support within their programs. Less than 20% of respondents utilized administrators within their programs or departments as resources during pre-candidacy or candidacy stages. Specifically, less than 5% of respondents sought support from the Dean or Associate Dean in their school during pre-candidacy or candidacy stages. Those individuals as resources and specifically Associate or

Assistant Deans in Student Affairs and Student Success roles can provide a wealth of information and support for students as they progress through programs. Additionally, less than 15% of respondents utilized resources provided by the Graduate School during pre-candidacy and candidacy stages.

One opportunity to develop student support is for the Graduate School, program, and departmental administrators to serve as advocates, to better aid in connecting students with campus and community resources, and provide students with networking opportunities and professional development. However, students need to know who to go to for which services and they need to believe those individuals are accessible and that they care. While relationships between doctoral students and administrators can be additive for the student, the relationships also allow administrators to be dialed in to the concerns and experiences of doctoral students. Administrators who are connected to and who interact regularly with students have a more accurate understanding of the students' needs and are more apt to ensure congruence between students' needs and campus resources.

Feedback from doctoral students indicated difficult interactions with advisors which could prolong stages of their programs. Research suggests that the student/advisor relationship is vital to a student successfully completing their degree (Lake et al., 2018; Martinez et al., 2013; Martinsuo & Turkulainen, 2011; West et al., 2010). The difficult interactions cited by respondents include inability to agree upon avenues for research, lack of communication, minimal emotional support, and an absence of overall involvement from the advisor. While all respondents indicated communicating with their advisor at least one time per semester and 70% of respondents indicated communicating with their advisor weekly, there are barriers preventing the two from establishing a mutually agreed upon path towards degree completion.

Research suggests that communication is a crucial component of degree completion (West et al., 2012). A student's advisor may have more contact with the student than other avenues of support which accentuates the importance of those interactions. An advisor may be the first to observe a student's deteriorating mental health or overall health because the student may be interacting less frequently with family and friends due to academic demands. A positive relationship with the advisor not only positively contributes to the research and the quality of the work produced, but may also ensure the student is engaging in positive self-care and aspects of professional development.

Financial support was identified as another lacking resource. Specifically, students noted a lack of access to healthcare and mental healthcare due to an absence of health insurance as well as a lack of financial feasibility to purchase independent healthcare or pay out of pocket for health-related services. Students cited an inability to manage their academic responsibilities with employment due to time constraints. Students consistently asked for health insurance in their qualitative feedback and noted regret that they did not choose a university where health insurance was offered.

Research supports the significant impact financial stress can have on degree completion (Di Pierro, 2012; Martinez et al., 2013; Spaulding & Rockinson-Szapkiw, 2012; West et al., 2010). Additionally, research supports the link between doctoral students' experiences of stress and their ability and motivation to complete their degree (Jairam & Kahl, 2012; Martinez et al., 2013). In an era where students are becoming more aware of the importance of maintaining mental health and where utilization of counseling services is increasing across campuses nationwide, resources for utilizing services are all the more necessary. Research in addition to the data collected present a number of viable opportunities for improving the student experience

and conferring a higher rate of degrees. However, despite the accumulation of rich research and a strong sample of data, there were limitations to the study.

Limitations

This study was limited by the researchers' access to data, components of the study, and unintentional bias. While the survey provided access to the students, the researchers were unsuccessful at accessing program directors within the study's population within the data collection time frame. Lack of access prevented the researchers from comparing the responses of the students, to the responses of the advisors that work with the students. Comparative data would have allowed the researchers to explore the experiences of the students with the experiences of the program directors and look for commonalities in the data. Many respondents commented on their relationship with their advisor. Exploring the perspective of the advisor in these relationships could provide balance and congruency and lead to additional research and recommendations.

In addition, we failed to include a survey question linked to student or program orientation. Di Pierro (2012) indicated that doctoral students often experience anxiety and stress before they embark on their doctoral experience, therefore, including survey questions about how students prepared for their program, and how programs set upfront expectations would provide valuable context around the student experience. West et al. (2010) views orientation as an opportunity to indoctrinate students and prepare them for what's ahead. Further information should be collected around student onboarding to better understand how expectations are set, and to obtain feedback on a student's perception of their program starting on day one.

An additional limitation is sample size. While the sample size of 112 represents 33% of the population, a higher survey response would further validate the strength of the study. The

majority of survey respondents stated they are currently enrolled in coursework. Additional diversity across the path towards candidacy would give the researchers additional data related to factors that affect successful degree completion within each stage. The study would have benefited from respondents who chose to leave the program; access to this population was extremely limited and obtaining additional responses from students who stopped out may have enhanced the study findings. Comparing students who have considered leaving, with students who made the choice to leave, would help researchers identify triggers leading to stopping out, and interventions that encouraged students to persist.

Related to data collection, the survey utilized a variety of question-types. There is controversy around using Likert-type scales (Simon & Goes, 2013). While the researchers used the recommended 5-7 category response, using Likert-type scales are inherently limited as a type of survey question. Researchers mitigated this limitation by offering different styles of questioning. In addition, researchers were constrained by time and season of data collection. Data was collected at the end of the semester, and while students were on break. Due to a lack of response, the survey was redeployed after the new year, on January 6th, 2020. It is possible that the timing of the survey affected the response rate, and the responses themselves. To mitigate this limitation, the researchers could issue the survey again, at a different time of year, and compare results.

All researchers carry bias. While the researchers used due diligence to acknowledge and prevent bias in the study and reporting of the data, our status as students within a doctoral program at Virginia Commonwealth University creates an emotional connection between the respondents' experience and our own. Reporting on the data, and by not providing opinion, we effectively eliminate researcher’s bias.

The researchers are confident that the limitations do not interfere with the validity of the findings. Based on limitations such as sample size and population, the researchers suggest additional studies to further explore the doctoral student experience, paying close attention to student support systems within programs, and resources that positively affect retention and degree completion.

Recommendations

As members of the Virginia Commonwealth University community, we are invested in supporting all students. Research on doctoral student attrition serves as a valuable resource for higher education administrators. A pipeline of lifelong learners is a critical component for the health and wellbeing of institutions of higher education. Reliable data on the doctoral student experience lends itself to policy and funding decisions, allocation of resources, and general support of the doctoral student population. Data collected from current doctoral students in the College of Humanities and Sciences at Virginia Commonwealth University can be explored and utilized to make policy and course adjustments within each program. Data can also be utilized more holistically across the university, putting into practice interventions that can positively affect all doctoral students. In addition, data collected can serve as a starting point for more robust research on support systems and resources for doctoral students at multiple institutions.

The recommendations provided below are a direct result and combination of best practices from literature and data collected during this study. The following recommendations take student accessibility, program make-up, and available resources into consideration. As students and employees of Virginia Commonwealth University, our internal perspective helps craft our position.

The first recommendation includes avenues for communicating clearly identified expectations pertaining to what it takes to be a successful doctoral student. Expectations are holistic and inclusive of academics, professional development, and personal well-being. Secondly, the researchers recommend the foundation of a doctoral student support center structured to provide a myriad of resources to further promote academic, personal, and professional development to improve the doctoral student experience. The doctoral student support center aims to address academic shortcomings, provide dedicated support services to improve aspects of self-care and mental health, promote social connection, and foster career development and professional networking. The final recommendation builds a robust structure for systematic evaluation that serves the student and the program, enacting a true cycle of learning where each student and faculty member contributes to the betterment of their program.

Recommendation 1: Program Expectations for Doctoral Students

As students apply to and learn of acceptance into doctoral programs, they feel overwhelmed and anxious (Di Pierro, 2012). Students come into doctoral programs during different stages of psychosocial development and they need a variety of resources in order to successfully navigate their new environment. According to Erikson's stages of psychosocial development, most doctoral students fall within two areas of development, (a) early adulthood, and (b) adulthood (Whitbourne & Waterman, 1979). During these stages, early-stage adults, aged between 21-40, are seeking new relationships and identify support as a major indicator of success or happiness. Adults, those aged between 40 and 60, are focused on external contributions and measure success based on what they are putting into the world (Whitbourne & Waterman, 1979). Research on adult development suggests adult learners will present different

needs during their program, and broad intervention may not yield improved retention rates. Interventions must instead consider individual learners and adapt how information is disseminated for consumption.

The study findings suggest that doctoral students would benefit from an easily accessible and clear understanding of what is expected from them as doctoral students. Providing expectations to students at the time of application, at acceptance, and throughout the program provides consistent messaging, and a sense of connection that is maintained throughout the students' journey. To accommodate all learners, expectations must be communicated using multiple mediums, and in collaboration with the Graduate School, the College of Humanities and Sciences, and doctoral student support center. Throughout a student's time in the program, requirements will change. A department-wide system that attends to specific program needs, individualized to ensure each student is well-informed will promote well-being and retention. Therefore, based on findings, we suggest a clear communication plan of all expectations required of doctoral students during each phase of their studies. In addition, a reciprocal expectation on the part of the student to actively navigate program requirements by reaching out to faculty, staff, and administrators throughout their path towards candidacy.

Communicating Program Expectations

Information outlining the doctoral student experience specific to each program, expectations across each stage in the doctoral program, and pivotal progression points would eliminate the ambiguous process and uncertainty student respondents identified in the study. Prospective students and enrolled students are interested in understanding the social norms within their departments as well as what it takes to be a successful doctoral student. Programming, through the provision of webinars or face to face presentations, to address the

doctoral student experience and academic expectation as well as resources offered by the Graduate School and the university would aid prospective students in making informed decisions about applying to a doctoral program, and remaining steadfast throughout their studies.

Based on data collected from the study, students would like to see expectations communicated more succinctly and more frequently in relation to coursework, time commitments during each stage of a program, and relationship development with advisors. Students are also interested in building relationships with other students and forging a better connection to the university at large. Additionally, students seek guidance on how a doctoral program can impact a student's well-being, family well-being, and personal finances. Resources related to healthcare access, reduced cost healthcare clinics in the surrounding Richmond area, and private insurance would aid students in making financial and healthcare decisions, and relieve a source of stress. With these interventions in place, students would enter the doctoral program with a concrete understanding of the total cost to include tuition, health insurance, and living expenses. Lastly, students should be introduced to key administrators within the Graduate School, university, and their specific programs so they can begin to put faces with names and start to understand the chain of command and who they can go to for specific aspects of support and advocacy. Students need to understand the role of administrators beyond their professional title.

Introductions and Networking

To promote the value of networking, we recommend in-person and virtual networking sessions where students are introduced and afforded the opportunity to connect with key partners. In addition, we recommend maintaining an organizational chart of the university and of each department or program. The organizational chart should contain updated and accurate

pictures of faculty, staff, or administrators with contact information and a synopsis for faculty, staff, and administrators to help students determine who to reach out to for specific concerns. Information about how faculty, staff, and administrators support doctoral students give students a sense of community and awareness of who to reach out to in times of need. A flow chart with information pertaining to who to contact and when would aid students in problem solving, increase their ability to self-advocate, and allow their voice to be heard.

Students would become familiar with the faces of authority figures and be more likely to reach out if they knew who to connect with and how to connect with them. Information that outlines historical questions or concerns for doctoral students with a flow chart of who to contact would provide guidance so that doctoral students can determine how to problem solve and when a concern should be addressed by their advisor, faculty member, dean, or upper level administrator. Doctoral students would enter the program with confidence, already feeling familiar with important individuals on campus. Additionally, doctoral students would have a roadmap of expectations to guide them through their academic progression as doctoral students. While the recommendation provides comprehensive communication of expectations for doctoral students, respondents also provided feedback pertaining to a more robust support system, avenues for addressing financial barriers, and mitigating mental health concerns.

Recommendation 2: Doctoral Student Support Center

A doctoral student support center offers comprehensive services specifically designed for doctoral students' unique needs, in a space dedicated to promoting doctoral student success and positive doctoral student experiences. Doctoral student support centers provide a "holistic approach" including academic support as well as emotional support to aid doctoral degree completion (Di Pierro, 2017, p. 29). The services provided are twofold and reflective of a one

stop shop to support academic growth as well as personal growth entirely for doctoral students. Established doctoral student support centers provide resources to decrease the sense of isolation, increase students' understanding of statistics, improve academic writing, and aid in the overall completion of the dissertation (Di Pierro, 2017; West et al., 2010). A doctoral support center is designed with the students' complete path to candidacy in mind. The support center includes academic services to promote quality of work, workshops on well-being to help students understand and manage the multiple identities they carry in addition to student, and seminars focused on each stage of the doctoral program to ensure students feel supported throughout their journey.

Academic Services

Based on the results of our study, we recommend a variety of academic support services housed under one roof for convenient access to all doctoral students. Services would be provided individually and in large and small group formats dependent upon the topic and nature of the training. Individual meetings with professionals who are adept at assisting doctoral students with writing and adhering to APA writing guidelines could be available for students predominantly in the dissertation phase of their programs. Similarly, statisticians could offer consultations as students are developing their studies and then when they evaluate their data. Experts related to public speaking could assist as students prepare for their prospectus hearing, dissertation defense, or conference presentation.

Providing these specific resources would address respondent's feedback pertaining to feeling unprepared for the research components of the dissertation and decrease overall feelings of doubt, incompetence, and lack of self-confidence. Additionally, these resources would minimize time spent with advisors whose schedules are already saturated and limited according

to respondent's feedback. Tools and tips pertaining to graduate and teaching assistants would also be shared as students determine how to balance that responsibility with other demands for their time. Other services may be more conducive to small or large group formats.

Seminars

Seminars that are timed as students' progress through phases of the doctoral program would be beneficial so students are prepared for and understand the expectations that present in the upcoming stage. Best practices suggest providing seminars prior to each phase of the doctoral program to orient students as they encounter new phases, to minimize inaccurate expectations and promote student success. Di Pierro (2012) stated that, "Timing is the most important variable ... Information provided too early or too late in the process compromises its value" (p. 31). Specific resources from campus and the community could also be included based upon student feedback regarding utilization and correspondence to specific program stages. For example, highlighting writing support services as students approach the dissertation stage where many students are transitioning to primarily writing, would be beneficial. Clearly stated expectations pertaining to time and commitment to the program could directly impact aspects of quality of life as students ascertain how to manage their time. Students could make informed decisions pertaining to financial concerns as they would be better able to consider how and whether they could reasonably allocate time to an employer and how much time would be likely during the different phases of the program.

Professional Development

To better support the whole student, offering professional development for doctoral students reiterates the value the institution places on networking community. Professional development resources can be housed at the doctoral student support center. Representatives

from career services can offer space for meetings and consultations. Programming pertaining to career development can include speakers and panels for broad topics such as employment in academia or industry as well as more specific topics related to specific doctoral programs and degrees. Networking events can follow where students have opportunities to engage with alumni and other leaders in their fields.

Support Services

Overwhelmingly, respondents described feeling mentally taxed and unwell during their pursuit towards candidacy. Support services and programming related to social connection, mindfulness, self-care, stress management, time management, and resilience could be provided specifically for doctoral students to work toward improving mental health, increasing positive coping, and decreasing burnout. Experiential programming can be offered where students can actively engage in self-care through mindfulness practices, yoga, or animal-assisted intervention in addition to didactic seminars where students can learn aspects of positive coping from faculty and administrators who have earned doctorates and from subject matter experts. Interdisciplinary support groups could be offered where students can normalize their experiences and encourage one another. Student panels where doctoral students in the candidacy phase provide suggestions, tips, and advice to students in pre-candidacy phases could also be helpful.

Panels made up of current doctoral students in candidacy stages as well as alumni serve as models for perseverance and discussion provides the opportunity for peer learning and interdisciplinary support. Students can learn from one another how to navigate challenging personal circumstances as well as academic setbacks. Supportive relationships established can become avenues for networking and mentoring. Doctoral students would have additional

opportunities for connection with mentors such that they may seek less support and guidance from advisors. At a minimum, the opportunity for additional mentorship meets guidelines for best practices which supports a team approach to mentoring where doctoral students benefit from the different perspectives of the various mentors (Hodapp & Woodle, 2017)

As another avenue for support, licensed mental health providers would be available specifically for individual meetings with doctoral students. This provides counseling in a setting designed for doctoral students which reduces stigma and supports confidentiality. A doctoral student serving as a teaching assistant will be less likely to see their students if they are meeting with a mental health provider at the doctoral student support center than they would at the university student counseling center. Ameliorated is the conflict of interest for some doctoral programs where their students are ineligible for services at the student counseling center because they will serve as interns there to satisfy requirements of their doctoral program. The holistic nature of services provided by doctoral student support centers plays a substantial role in promoting doctoral student success personally and academically, leading to an increase in doctoral student retention (Di Pierro, 2017). Also aiding in doctoral student progression are avenues for feedback, evaluation, and quality improvement.

Recommendation 3: Program Evaluation and Student Assessment

Consistent communication with doctoral students increases faculty, staff, and administrator's understanding of their experiences and their needs. Comprehensive and ongoing evaluation of doctoral student experiences through online surveys or focus groups can help administrators and faculty be abreast of shifts in the doctoral student experience and fluctuating needs. In addition, student assessments to measure the growth and ability of individual learners

across programs allows the College to examine learning and development by student and holistically and identify trends.

Ongoing Program Evaluation

Online surveys administered to current doctoral students and focus groups provide an opportunity for close-ended and open-ended questions securing quantitative and qualitative data. In addition, scheduled surveys promote feelings of inclusion allowing students to have some sense of control over their learning. For example, the survey deployed for this study provided significant feedback about the student experience and included student-led recommendations to better support student well-being. Students are interested in accessible healthcare. A potential survey aimed at identifying the healthcare needs of students and whether they would be willing or able to pay an additional fee for health insurance would provide additional context and direction as the university considers avenues for offering additional resources.

Further, a lack of access to healthcare and health insurance was identified repeatedly by respondents in the study. Consideration for healthcare options for doctoral students would be additive. Doctoral student respondents indicated regret they did not pursue doctoral programs at institutions that did offer insurance plans. Universities offer healthcare for doctoral students with plans and options dependent upon graduate student status or roles as graduate assistants or teaching assistants (University of Maryland, The Graduate School, 2020). For graduate assistants and teaching assistant's insurance plans are often offered through the state with low deductibles, minimal co-pays, and coverage options for a student's family. For graduate and teaching assistants at the University of Michigan and University of Pittsburgh for examples, these plans are provided at no cost to the student (University of Michigan Rackham Graduate School, n.d.; University of Pittsburgh, Graduate and Professional Student Plans, 2020). Further

research pertaining to student insurance options in Virginia and a more in depth understanding of doctoral students' needs through surveys and focus groups would provide context and direction to consider advantages and disadvantages to offering health insurance as a benefit or requirement for doctoral students.

Robust program evaluations include scheduled student surveys as a way to check-in on a student's well-being and progress in the program while providing a secure outlet for constructive feedback. In addition to student-led feedback, program evaluation from the perspective of the faculty, staff, and administrators would establish a well-rounded feedback cycle and demonstrate interest in holistic quality improvement. Program evaluation is one metric to support and grow a reputable program. A second metric is student assessment.

Student Assessment and Learning Path

Research indicated that respondents came into their respective programs with different levels of competencies, evident by resources individuals reported needing at different stages in the program. Currently, there is no intervention available to track a student's development and planned path towards candidacy beyond their coursework and movement through each stage of their program. Aligned to a desire to support the whole student and therefore improve retention, the researchers recommend developing an assessment that tracks the student's progression from the time of enrollment to conferred degree.

The doctoral student assessment would kick-off at time of acceptance and include a writing sample, an assessment of the student's support system, the student's personal goals, and an opportunity for the student and advisor to create a plan for the student's path towards candidacy. The benchmark assessment would be in collaboration of the student, the department, and the advisor, and an opportunity to set expectations and state operating procedures.

Researchers recommend revisiting and updating the document formally, each year, throughout the student's time in the program. With each assessment, an opportunity to review an updated writing sample, check in on changes to the students support system and wellness plan, and make necessary adjustments to the student's timeline. Ehrenberg et al. (2007) and Spaulding and Rockinson-Szapkiw (2012) underscore the value of setting clear expectations and maintaining strong lines of communication throughout the doctoral process. These touchpoints provide a critical point of connection for the student, while creating a physical document of the student's commitments, experiences with the program, and progression.

The three proposed recommendations are a direct result of learning from the literature and study findings. Each recommendation is designed with the current state of the College of Humanities and Sciences in mind. Recommendations can be sized down, or bolstered based on available resources and levels of impact. Full implementation of each recommendation would enhance the doctoral student experience and in turn, improve retention rates.

Implications for Practice

While 70% of doctoral students in the College of Humanities and Sciences at VCU earn their degrees, 30% of doctoral students do not. With the current doctoral student population within the College of Humanities in Sciences at Virginia Commonwealth University at 318, that equates to approximately 95 students stopping out; a significant loss in future research and tuition dollars. Specific feedback from study participants suggest dissatisfaction with their doctoral student experiences and deteriorating and poor mental and physical health. Data from this study provides insight into doctoral student experiences so as to consider not only avenues for increasing retention but also avenues for improving the doctoral student experience and

overall health of the students. Student attrition places a strain on university resources and impacts the health and well-being of students.

Doctoral student stress can negatively impact the progression of research, the quality of the courses the doctoral student teaches, and the collaboration between doctoral student and advisor. VCU has an opportunity to further prioritize doctoral students' well-being by responding directly to students' feedback with implementation of specific support services and by providing regular, centrally managed mechanisms, for collecting student feedback.

Doctoral student respondents voiced regret about their choice to attend VCU due to lack of health insurance and the perception that academics are prioritized over wellness. Over time, with the addition of support services and resources, doctoral students could praise not only the high caliber of research and the opportunity to work alongside experts in the field, but also the expectation that doctoral students consistently engage in aspects of self-care and wellness to thrive as doctoral students at VCU. The development of a doctoral student support center or comparable services with such a holistic approach could ultimately serve as a cutting-edge approach to increasing doctoral student retention and could spearhead the foundation of similar processes at universities nationwide.

Suggestions for Future Research

Obtaining feedback from doctoral students currently enrolled in the College of Humanities and Sciences at VCU provided insight into when and why doctoral students consider leaving their programs. Data from this research informs faculty and administrators of avenues for decreasing attrition and promoting retention and degree completion for doctoral students. Further research, to include a more diverse sample population, could round out an improved doctoral student experience.

Obtaining data from doctoral program directors would allow for comparisons between doctoral student experiences and the experience of program directors. Data from program directors may add an increased level of credibility as program directors consider implementing changes within their doctoral programs. In addition, a longitudinal study with assessments from doctoral students across stages of their pursuit for the doctoral degree would allow for specific snapshots to evaluate a student's level of functioning across time and could provide additional insight into when and why a student may struggle during each stage. Research specifically linked to students who discontinue their pursuit of the doctoral degree would further elaborate on factors that decrease retention. Assessments to evaluate the impact of implemented recommendations could provide more specific outcomes to improve the doctoral student experience and increase retention. All suggestions for future research aid in developing a more robust and comprehensive repertoire of literature and best practices pertaining to doctoral student success.

Conclusion

This study included data from 112 doctoral students currently enrolled in the College of Humanities and Sciences at Virginia Commonwealth University. Quantitative and qualitative data was collected and analyzed using descriptive statistics and Chi Square tests to understand the significance of the data. The arduous experience of pursuing a doctoral degree is affirmed as students considered leaving their programs during specific stages of study. Additionally, data indicates there are factors that impact attrition within doctoral programs in the College of Humanities and Sciences at VCU. Lastly, doctoral students do need resources and avenues of support in order to successfully move through the stages toward doctoral degree completion. As noted previously, there are recommendations and best practices derived from literature to address

and circumvent barriers that prevent degree attainment and to improve the doctoral student experience.

In closing, the role of a college or university is to expand the learning of all students so upon graduation, those students may enter the world and contribute to problems of practice. Doctoral students hold a critical role to not only provide valuable research and insights while pursuing their degree, but to graduate and serve the next generation of young learners eager to make their mark in the world. Higher education must rely heavily on institutional teaching and support, to ensure doctoral students bring their best version of self to their studies, learn to be resilient within their field, and develop a value system committed to honoring the esteem and importance the doctorate provides in academia.

References

Ayres, L. (2008). Thematic coding and analysis. In L.M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods.* (pp. 1-4). https://dx.doi.org/10.4135/9781412963909

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review,* 84, 191-215.

Benaquisto, L. (2008). Open coding. In L.M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods.* (pp. 1-3). https://dx.doi.org/10.4135/9781412963909

Bourner, T., Bowden, R., & Laing, S. (2001). Professional doctorates in England. *Studies in Higher Education,* 26(1), 65–88.

Bowen, W.G., Rudenstine, N.L. (1992). *In pursuit of the Ph.D.* Princeton University Press.

Bowen, W.G., Sosa, J.A. (1989). *Prospects for faculty in the arts and sciences.* Princeton University Press.

Brus, C.P. (2006). Seeking balance in graduate school: A realistic expectation or a dangerous dilemma? *New Directions for Student Services, 115,* 31-45.

Bryman, A. (2006). *Mixed methods: A four-volume set.* Sage Publications, Inc.

Cost of Attendance. (2019). Retrieved from https://finaid.vcu.edu/apply/cost/

Campbell, S.P., Fuller, A.K., Patrick, D.AG. (2005). Looking beyond research in doctoral education. *Front Ecol Environ, 3(3),* 153-160.

Castello, M., Pardo, M., Sala-Bubare, A., Sune-Soler, N. (2017). Why do students consider dropping out of doctoral degrees? Institutional and personal factors. *Higher Education,* 1-16.

Connor, C.S., LaFave, J., & Balayan, A. (n.d.). Integrated interdependence: The emergence of

graduate enrollment management (GEM). https://customer.nagap.org/app_themes/NAGAP/documents/135361-WhitePaper-FINAL.pdf

Crede, E., Borrego, M. (2014). Understanding retention in US graduate programs by student nationality. *Studies in Higher Education, 39*(9), 1599-1616.

Creswell, J.W. (2014). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th edition). Pearson.

Creswell, J.W., Creswell, J.D. (2018). *Research design: Qualitative, quantitative, and mixed method approaches* (5th edition). Sage Publications, Inc.

Denecke, D. D. & Slimowitz, J. (2004). Ph.D. completion and attrition: Policy, numbers, Leadership, and next steps. *Council of Graduate Schools.* Council of Graduate Schools.

Di Pierro, M. (2012). Strategies for doctoral student retention: Taking the roads less traveled. *The Journal for Quality and Participation*, *35*(3), 29.

Dillman, D.A., Smyth, J.D., Christian, L.M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th edition). Wiley.

Ehrenberg, R. G., Jakubson, G. H., Groen, J. A., So, E., & Price, J. (2007). Inside the black box of doctoral education: What program characteristics influence doctoral students' attrition and graduation probabilities? *Educational Evaluation and Policy Analysis*, *29*(2), 134-150.

Facts and Rankings. (2019). [Graphic illustration and student quote, September 1, 2019]. https://www.vcu.edu/about-vcu/facts-and-rankings/

Ferrer de Valero, Y. (2001). Departmental factors affecting time-to-degree and completion rates

of doctoral students at one land-grant research institution. *The Journal of Higher Education, 72,* 341-367.

Freeman Jr, S., & Kochan, F. K. (2012). Academic pathways to university leadership: Presidents' descriptions of their doctoral education. *International Journal of Doctoral Studies, 7*(1), 93-124.

Gardner, S. K. (2008a). Student and faculty attributions of attrition in high and low-completing doctoral programs in the United States. *Higher Education, 58*(1), 97-112.

Gardner, S. K. (2008b). Fitting the mold of graduate school: A qualitative study of socialization in doctoral education. *Innovative Higher Education, 33*(2), 125-138.

Gardner, S.K. (2009). Understanding doctoral education. *ASHE Higher Education Report, 34*(6), 29-40.

Geven, K., Skopek, J., Triventi, M. (2018). How to increase PhD completion rates? An impact evaluation of two reforms in a selective graduate school, 1976–2012. *Research in Higher Education*, 59(5), 529-552.

Golde, C.M. (1998). Beginning graduate school: Explaining first-year doctoral attrition. *New Directions for Higher Education, 101,* 55-64.

Gordon, P.J. (2003). Advising to avoid or to cope with dissertation hang-ups. *Academy of Management Learning and Education,* 2, 181-187.

Graduate and Professional Studies. (2019). https://www.vcu.edu/academics/graduate-and-professional-studies/

Graduate Information (2019). http://bulletin.vcu.edu/graduate/college-humanities-sciences/graduate-information/

Hodapp, T. & Woodle, K.S. (2017). A bridge between undergraduate and doctoral degrees. *Physics Today, 70.* https://doi.org/10.1063/PT.3.3464

Hossler, D., & Kalsbeek, D. (2013). Enrollment management and managing enrollments: Revisiting the context for institutional strategy. *Strategic Enrollment Management Quarterly*, *1*(1), 5-25.

Hossler, D. (2006). Managing student retention: Is the glass half full, half empty, or simply empty. *College and University*, *81*(2), 11-14.

Jairam, D., & Kahl Jr, D. H. (2012). Navigating the doctoral experience: The role of social support in successful degree completion. *International Journal of Doctoral Studies*, *7*(nd).

Lake, E. D., Koper, J., Balayan, A., & Lynch, L. (2018). Cohorts and connections: Doctoral retention at a mid-Atlantic comprehensive institution. *Journal of College Student Retention: Research, Theory & Practice*, *20*(2), 197-214.

Linden, J., Ohlin, M., & Brodin, E.M. (2013). Mentorship, supervision and learning experience in PhD education. *Studies in Higher Education, 38*(639-662). https://doi.org/ 10.1080/03075079.2011.596526

Martinez, E., Ordu, C., Della Sala, M. R., & McFarlane, A. (2013). Striving to obtain a school-work-life balance: The full-time doctoral student. *International Journal of Doctoral Studies*, *8*(39-59).

Martinsuo, M., & Turkulainen, V. (2011). Personal commitment, support and progress in doctoral studies. *Studies in Higher Education*, *36*(1), 103-120.

Merriam-Webster. (2019). https://www.merriamwebster.com/dictionary/doctorate

Morgan, D. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research,* 1(1), 48-76.

NAGAP (n.d.) https://nagap.org/gem-resources

National Center for Education Statistics (1998). *Stopouts or stayouts? Undergraduates who leave college in their first year.* https://nces.ed.gov/pubs99/1999087.pdf

National Center for Educational Statistics (2019). https://nces.ed.gov/

National Science Foundation (2017). *Doctoral recipients from U.S. universities: 2015*. National Center for Science and Engineering Statistics. Arlington, VA.

Offerman, M. (2011). Profile of the nontraditional doctoral degree student. *New directions for adult and continuing education, 129,* 21-30.

Okahana, H., Zhou, E (2018). *Graduate enrollment and degrees: 2007-2017*. Council of Graduate Schools.

Orellana, M. L., Darder, A., Perez, A., & Salinas, J. (2016). Improving doctoral success by matching PhD students with supervisors. *International Journal of Doctoral Studies, 11*, 87-103. http://ijds.org/Volume11/IJDSv11p087-103Orellana1629.pdf

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and policy in mental health, 42*(5), 533–544. https://doi.org/10.1007/s10488-013-0528-y

Ritzman, L. R., Koehler, A. B., VanBuskirk, W. P., & Hershauer, J. C. (2000). Changing expectations for doctoral education. *Decision Line, 31*(5), 11-14.

Rudolph, F. (1990). *The American college and university: A history*. The University of Georgia Press.

Sanders, C. E., & Landrum, R. E. (2012). The graduate school application process: What our students report they know. *Teaching of Psychology*, *39*(2), 128-132.

Schreiner, L. A. (2009). Linking student satisfaction and retention. *Noel-Levitz, Coralville, IA*.

Shariff, N.M., Abidin, A.Z., Ramli, K.I., Ahmad, R. (2015). Predictors of timely Ph.D. completion: Investigating the perceptions of Ph.D. candidates at the Malaysian university. *Mediterranean Journal of Social Sciences*, *6(3),* 259-267.

Simon, M.K., Goes, J. (2013). *Dissertation and scholarly research: Recipes for success*. Seattle, WA: Dissertation Success.

Sowell, R., Zhang, T., Bell, N., Redd, K. (2008). *PhD completion and attrition: Analysis of baseline demographic data from the PhD completion project*. Council of Graduate Schools.

Sowell, R., Zhang, T., Redd, K. (2008a). *Ph.D. completion and attrition: Analysis of baseline program data from the Ph.D. completion project*. Council of Graduate Schools.

Sowell, R., Bell, N.E., Kirby, S.N., Naftel, S. (2009). *PhD completion and attrition: Findings from exit surveys of Ph.D. completers*. Council of Graduate Schools.

Spaulding, L. S., & Rockinson-Szapkiw, A. J. (2012). Hearing their voices: Factors doctoral candidates attribute to their persistence. *International Journal of Doctoral Studies*, *7*(1), 199-219.

Spronken-Smith, R., Cameron, C., Quigg, R. (2018). Factors contributing to high PhD completion rates: A case study in a research-intensive university in New Zealand. *Assessment & Evaluation in Higher Education*, 43(1), 94-109.

Stage, F.K., Manning, K. (2016). *Research in the college context: Approaches and methods* (2nd edition). Routledge.

Stock, W.A., Finegan, T.A., Siegfried, J.J. (2009). Completing an economics Ph.D. in five years: Let the data literally speak for themselves. *American Economic Review: Papers and Proceedings*, 99(2), 624-629.

Storms, B. A., Prada, M. J., & Donahue, E. N. (2011). Advising Doctoral Candidates to Degree Completion. *Educational Leadership and Administration: Teaching and Program Development*, *23*, 85-92.

Sverdlik, A., Hall, N.C., McAlpine, L., & Hubbard, K. (2018). The PhD experience: A review of the factors influencing doctoral students' completion, achievement, and well-being. *International Journal of Doctoral Studies 13*, 361-388.

Swecker, H., Fifolt, M., Searby, L. (2013). Academic advising and first-generation college students: A quantitative study on student retention. *NACADA Journal*, 33(1), 46-53.

Two-way tables and the chi-square test. (2018). Retrieved from http://www.stat.yale.edu/Courses/1997-98/101/chisq.htm

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. Integrated Postsecondary Education Data System (2015). *Average graduate tuition and required fees in degree-granting postsecondary institutions, by control of institution and percentile of charges: 1989-90 through 2014-15.* https://nces.ed.gov/programs/digest/d15/tables/dt15_330.50.asp

University of Maryland, The Graduate School (2020). Retrieved from https://gradschool.umd.edu/health-insurance

University of Michigan, Rackham Graduate School (n.d.). Retrieved from https://rackham.umich.edu/rackham-life/health/insurance/

University of Pittsburgh, Graduate and Professional Student Plans (2020). Retrieved from https://www.hr.pitt.edu/students/graduate-plan

VCU Office of Research and Innovation (n.d.). *Quality Improvement vs. Research – Do I Need IRB Approval?* https://research.vcu.edu/human_research/research_qi_guidance.pdf

Van Der Haert, M., Arias Ortiz, E., Emplit, P., Halloin, V., & Dehon, C. (2014). Are dropout and degree completion in doctoral study significantly dependent on type of financial support and field of research? *Studies in higher education*, *39*(10), 1885-1909.

Van de Schoot, R., Yerkes, M.A., Mouw, J.M., Sonneveld, H. (2013). What took them so long? Explaining PhD delays among doctoral candidates. *PLoS ONE*, 8(7), 1-11.

Virginia Commonwealth University. (2018, July 30). *Institutional research and decision support*. https://irds.vcu.edu/eaar/interactive-reports/new-students/doctoral-demographics-by-college---school/

Virginia Commonwealth University. (2018). *2018 Fall faculty fact book reports*. https://irds.vcu.edu/media/decision-support/factandfigures/fact-book/employee/FactBookReports-Faculty.pdf

West, I. J., Gokalp, G., Pena, E. V., Fischer, L., & Gupton, J. (2011). Exploring effective support practices for doctoral students' degree completion. *College Student Journal*, *45*(2), 310-323.

Whitbourne, S. K., & Waterman, A. S. (1979). Psychosocial development during the adult years: Age and cohort comparisons. *Developmental Psychology*, *15*(4), 373.

Appendices

Appendix A

Average Graduate Tuition and Fees

Table 330.50. Average graduate tuition and required fees in degree-granting postsecondary institutions, by control of institution and percentile of charges: 1989-90 through 2014-15

Year	Total	Public institutions\1\	Private institutions			Public institutions,\1\ by percentile			Nonprofit institutions, by percentile		
			Total	Nonprofit	For-profit	25th percentile	Median (50th percentile)	75th percentile	25th percentile	Median (50th percentile)	75th percentile
1	2	3	4	5	6	7	8	9	10	11	12
	Current dollars										
1999-2000	8,069	4,042	13,821	$14,123	$9,611	$2,640	$3,637	$5,163	$7,998	$12,870	$20,487
2000-01	8,429	4,243	14,420	14,457	13,229	2,931	3,822	5,347	8,276	13,200	21,369
2001-02	8,857	4,496	15,165	15,232	13,414	3,226	4,119	5,596	8,583	14,157	22,054
2002-03	9,226	4,842	14,983	15,676	9,644	3,395	4,452	5,927	8,690	14,140	22,700
2003-04	10,312	5,544	16,209	16,807	12,542	3,795	5,103	7,063	9,072	15,030	25,600
2004-05	11,004	6,080	16,751	17,551	13,133	4,236	5,663	7,616	9,300	16,060	26,140
2005-06	11,621	6,493	17,244	18,171	13,432	4,608	6,209	7,977	9,745	16,222	26,958
2006-07	12,312	6,894	18,108	19,033	14,421	4,909	6,594	8,341	10,346	17,057	29,118
2007-08	13,002	7,415	18,878	19,896	14,713	5,176	6,990	9,288	10,705	17,647	30,247
2008-09	13,647	7,999	19,230	20,485	14,418	5,612	7,376	9,912	11,290	18,270	30,514
2009-10	14,542	8,763	20,078	21,317	14,512	6,074	7,983	10,658	12,290	19,460	31,730
2010-11	15,017	9,238	20,397	21,993	13,811	6,550	8,788	10,937	12,510	19,586	33,215
2011-12	15,845	9,978	21,230	22,899	14,285	7,506	9,440	11,954	12,936	20,625	34,680
2012-13	16,407	10,408	21,907	23,642	14,418	7,706	9,900	12,590	12,960	21,352	36,820
2013-14	16,946	10,725	22,607	24,467	14,210	7,791	10,242	12,779	13,567	22,018	36,660
2014-15	17,385	10,979	23,266	25,171	14,265	7,914	10,428	12,829	13,872	22,170	38,948
	Constant 2014-15 dollars										
1999-2000	11,281	5,651	19,322	$19,745	$13,437	$3,691	$5,085	$7,218	$11,182	$17,993	$28,642
2000-01	11,394	5,736	19,492	19,541	17,882	3,962	5,166	7,228	11,187	17,843	28,885
2001-02	11,764	5,971	20,143	20,232	17,816	4,285	5,471	7,433	11,400	18,804	29,292
2002-03	11,990	6,292	19,472	20,373	12,534	4,412	5,786	7,703	11,294	18,377	29,502
2003-04	13,115	7,051	20,615	21,376	15,952	4,827	6,490	8,983	11,538	19,116	32,559
2004-05	13,587	7,507	20,683	21,670	16,215	5,230	6,992	9,403	11,482	19,829	32,274
2005-06	13,822	7,723	20,510	21,612	15,976	5,481	7,385	9,488	11,591	19,294	32,063
2006-07	14,274	7,993	20,994	22,067	16,720	5,691	7,645	9,671	11,995	19,776	33,759
2007-08	14,536	8,290	21,105	22,244	16,449	5,787	7,815	10,384	11,968	19,729	33,815
2008-09	15,047	8,819	21,202	22,587	15,897	6,188	8,133	10,929	12,448	20,144	33,644
2009-10	15,880	9,570	21,926	23,279	15,848	6,633	8,718	11,639	13,421	21,251	34,650
2010-11	16,076	9,889	21,835	23,544	14,785	7,012	9,408	11,708	13,392	20,967	35,557
2011-12	16,479	10,378	22,080	23,816	14,857	7,807	9,818	12,433	13,454	21,451	36,069
2012-13	16,785	10,648	22,411	24,186	14,750	7,883	10,128	12,880	13,258	21,843	37,667
2013-14	17,069	10,803	22,771	24,645	14,313	7,848	10,317	12,872	13,666	22,178	36,927
2014-15	17,385	10,979	23,266	25,171	14,265	7,914	10,428	12,829	13,872	22,170	38,948

---Not available.
\1\Data are based on in-state tuition only.

NOTE: Average graduate student tuition weighted by fall full-time-equivalent graduate enrollment. Excludes doctoral students in professional practice programs. Data through 1995-96 are for institutions of higher education, while later data are for degree-granting institutions. Degree-granting institutions grant associate's or higher degrees and participate in Title IV federal financial aid programs. The degree-granting classification is very similar to the earlier higher education classification, but it includes more 2-year colleges and excludes a few higher education institutions that did not grant degrees. Some data have been revised from previously published figures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment Survey" (IPEDS-EF:89-99); "Completions Survey" (IPEDS-C:90-99); "Institutional Characteristics Survey" (IPEDS-IC:89-99); IPEDS Fall 2000 through Fall 2014, Institutional Characteristics component; and IPEDS Spring 2001 through Spring 2015, Fall Enrollment component. (This table was prepared December 2015.)

Appendix B

Online Survey: Doctoral Students

Survey Introduction

With only 50% of doctoral students completing their degree, colleges and universities are invested in exploring how to better support doctoral students at each stage of their program.

We invite you to complete the survey below, and contribute to an improved doctoral student completion rate. Your information will be kept confidential and your responses will help improve the quality of programs and support for doctoral students. The survey consists of 37 questions, and concludes with five open-ended responses. Please answer each question honestly. The survey takes approximately 10 minutes to complete.

Thank you.

Survey

	Question	Answer Format
1	Please select your age.	List (21-29; 30-39; 40-39; 40-49; 50+)
2	What is your gender?	List (female; male; non-binary/third gender; prefer to self-describe; prefer not to say)
3	What is your race and/or ethnicity?	List (Asian/Pacific Islander; Black or African American; Hispanic or Latino; Native American or American Indian; White; Other; Prefer not to say)
4	Are you the first in your family to go to college?	Yes/No
5	How are you paying for your degree	Graduate Assistantship; Self-funded; Student Loans; Employer Funded; Scholarship; Other; Prefer not to answer
6	When did you first enroll in your doctoral program?	List (year, 2009-2019); other
7	Please select the doctoral program you are enrolled in.	Conditional based on question prior. List (inclusive of all colleges/schools offering a Ph.D. program at VCU)
8	Are you currently enrolled in a doctoral program?	Yes/No (skip logic if NO, see next question)

9	Please select the choice that best describes your status as a student	Enrolled Full Time; Enrolled Part Time;
SL1	At what stage of the program did you leave?	Stage 1: Coursework Stage 2: After qualifying exams or comps, and before my dissertation/prospectus defense Stage 2a: After my dissertation proposal/prospectus hearing, but before writing the dissertation Stage 3: While writing by dissertation. Other (please explain)
SL2	When you left your program, please describe what stage you were in.	
SL3	Please select the number of years you completed prior to leaving your program.	1-10
SL4	Please select the answer that best describes why you left your program.	I was dismissed for academic reasons I was dismissed for conduct I chose to leave (please explain)
SL5	Please state your level of satisfaction with your program while enrolled.	Open-ended optional
SL6	Please select the choice that most accurately describes where you are in your path towards completing your degree.	List. Multiple Select (1) I am currently enrolled in coursework (2) I have completed my coursework and am preparing for my qualifying exams/comps (3) I have finished my qualifying exams/comps (4) I am preparing for my prospectus hearing (5) I have completed my prospectus hearing (6) My dissertation topic was approved and I am working to complete my dissertation/thesis (4) I have a scheduled date to defend my dissertation/thesis
10	At times, I have doubted my ability to complete my doctoral program.	Yes/No
11	I have considered leaving my doctoral program	Yes/No (skip logic)
SL1a	At what stage did you consider leaving your doctoral program? (please check all that apply)	Stage 1: Coursework

		Stage 2: After qualifying exams or comps, and before my dissertation/prospectus defense Stage 2a: After my dissertation proposal/prospectus hearing, but before writing the dissertation Stage 3: While writing by dissertation. Other (please explain)
SL1b	I have considered leaving for reasons related to (please check all that apply)	Academic rigor; caretaking for family members; change in faculty; conflict with advisor; disinterest in course content; financial concerns; job opportunities; lack of support from faculty/staff in my program; lack of support from colleagues in my program; personal physical health concerns; personal mental health concerns; time management; other
SL1c	I have talked to someone about my intention to discontinue the program	Yes/No (skip logic)
SL1d	Please select who you spoke with about leaving your program	Advisor; Faculty; Mentor; Friend; Colleague; Family member; Other (please explain) - select all that apply
12	I engage with the community outside of my studies.	Yes/No
SL2a	Please list the level of frequency you participate in community events or activities outside of your studies	Monthly; weekly; daily; almost never (single-select)
13	I know who to go to within my department for emotional support	Yes/No
14	I know who to go to within my department for academic support	Yes/No
15	I have utilized campus resources during pre-candidacy.	Yes/No
16	I have utilized campus resources during candidacy.	Yes/No
SL3a	Please indicate which campus resources you have utilized during pre-candidacy.	Academic Learning Center; Associate Dean of Your College; Career Services; Dean of Your College; Faculty/Staff in Your Program; Global Education Office;

		Graduate Program Director; Graduate School; OMSA; Ombudsperson Rec Sports; Staff Person within My Program; Student Accessibility and Educational Opportunity Office; University Counseling Services; University Student Health Services; VCU Libraries; Other
SL3b	Please indicate which campus resources you have utilized during candidacy.	Academic Learning Center; Associate Dean of Your College; Career Services; Dean of Your College; Faculty/Staff in Your Program; Global Education Office; Graduate Program Director; Graduate School; OMSA; Ombudsperson Rec Sports; Staff Person within My Program; Student Accessibility and Educational Opportunity Office; University Counseling Services; University Student Health Services; VCU Libraries; Other
17	I am confident in my ability to identify or maintain program funding.	Likert-Type Scale (agree/disagree)
18	I believe my course material provides me with the knowledge and skill to complete all of my degree requirements (e.g. coursework, dissertation, research)	Likert-Type Scale (agree/disagree)
19	My program is meeting my academic expectations.	Likert-Type Scale (agree/disagree)
20	I feel prepared to meet the academic demands of my program	Likert-Type Scale (agree/disagree)
21	I am confident that I write at the doctoral level	Likert-Type Scale (agree/disagree)
22	I am confident in my ability to conduct research	Likert-Type Scale (agree/disagree)
23	I have access to the resources I need to be successful in my doctoral program	Likert-Type Scale (agree/disagree)
24	I feel connected to my classmates	Likert-Type Scale (agree/disagree)
25	I feel connected to my professors	Likert-Type Scale (agree/disagree)
26	I feel connected to my local community	Likert-Type Scale (agree/disagree)
27	My chair provides clear expectations for what to expect during the dissertation process	Likert-Type Scale (agree/disagree) - add not applicable.

28	Program expectations are mutually agreed upon between faculty and student	Likert-Type Scale (agree/disagree)
29	Do you believe that your academic program has an inclusive environment	Yes/No (single select) Explain (open-ended optional)
30	Is your program inclusive/accepting in relation to: Gender, race, ethnicity, nationality, sexual orientation	Yes/No (single select for each) Comment (open-ended optional)
31	How often do you rely on the support of the following individuals	Classmates; faculty; family; other At least 1 time per week; At least time per month; At least 1 time per semester; Less than 1 time per semester; Not applicable
32	How often do you communicate with your advisor?	At least 1 time per week; At least time per month; At least 1 time per semester; Less than 1 time per semester; Not applicable
33	How do you communicate with your advisor? (please check all that apply)	Face to Face; Phone; Text; Virtually, Email, Other
34	Please rate the level of satisfaction or dissatisfaction with your academic program	Likert-type Scale (highly satisfied to highly dissatisfied)
35	Please rate the level of satisfaction or dissatisfaction with the availability of your advisor	Likert-type Scale (highly satisfied to highly dissatisfied)
36	I talk to colleagues about the rigor of our program and academic stress	Yes/No
37	I am confident I will successfully complete my doctoral program	Yes/No
Qualitative Questions		
1	What have been the biggest challenges that you have faced in your doctoral program?	Open-ended
2	What are ways in which you have overcome the challenges that you have faced in your doctoral program?	Open-ended

3	What are recommendations that you would share to improve the quality and/or student experience of your academic program?	Open-ended
4	In what ways, if any, does your academic program promote an inclusive learning environment for students?	Open-ended
5	Please use this space to add any other thoughts you would like to share about your experience as a doctoral student.	Open-ended

Appendix C

Survey/Interview Validation Rubric for Expert Panel - VREP©

By Marilyn K. Simon with input from Jacquelyn White

Criteria	**Operational Definitions**	**Score** **1=Not Acceptable** (major modifications needed) **2=Below Expectations** (some modifications needed) **3=Meets Expectations** (no modifications needed but could be improved with minor changes) **4=Exceeds Expectations** (no modifications needed)	**Questions NOT meeting standard (List page <u>and</u> question number) and need to be revised.** ***Please use the comments and suggestions section to recommend revisions.***
Clarity	• The questions are direct and specific. • Only one question is asked at a time. • The participants can understand what is being asked. • There are no *double-barreled* questions (two questions in one).	3	
Wordiness	• Questions are concise. • There are no unnecessary words	3	
Negative Wording	• Questions are asked using the affirmative (e.g., Instead of asking, "Which methods are not used?", the researcher asks, "Which methods *are* used?")	4	
Overlapping Responses	• No response covers more than one choice. • All possibilities are considered. • There are no ambiguous questions.	3	
Balance	• The questions are unbiased and do not lead the participants to a response. The questions are asked using a neutral tone.	4	
Use of Jargon	• The terms used are understandable by the target population. • There are no clichés or hyperbole in the wording of the questions.	3	Review to make sure 'stages' are clearly defined
Appropriateness of Responses Listed	• The choices listed allow participants to respond appropriately.	4	

	• The responses apply to all situations or offer a way for those to respond with unique situations.		
Use of Technical Language	• The use of technical language is minimal and appropriate. • All acronyms are defined.	3	
Application to Praxis	• The questions asked relate to the daily practices or expertise of the potential participants.	4	
Relationship to Problem	• The questions are sufficient to resolve the problem in the study • The questions are sufficient to answer the research questions. • The questions are sufficient to obtain the purpose of the study.	4	
Measure of Construct	•		
Measure of Construct	•		

Appendix D

Student Request to Participate: Initial Email

With only 50% of doctoral students completing their degree, colleges and universities are invested in exploring how to better support doctoral students at each stage of their program.

As doctoral candidates, my colleague Victoria Keel and I have a vested interest in this statistic. Our capstone project in the Doctor of Education program at VCU is exploring doctoral student completion rates at the university, focusing on barriers to success and potential interventions. We intend to use our findings to share recommendations to improve the quality of the VCU doctoral student experience and, potentially, improve completion rates.

While participation is voluntary, we invite you to complete the survey via the link below. Your responses will help improve the quality of doctoral programs and the support available for doctoral students at VCU.

Doctoral Student Experience Survey Link

As a quality improvement study, our research was submitted to the IRB and deemed exempt. There are no identifiers within the survey and all information will be kept confidential. Based on your responses, the survey consists of up to 37 questions, and concludes with five open-ended responses. Please answer each question honestly. The survey takes approximately 10 minutes to complete.

Thank you for your participation, and best of luck on your doctoral journey.

Sincerely,

Michaela Ranaldi Bearden
Senior Director, Center for Corporate Education, VCU School of Business Foundation

Victoria Keel
Assistant Director for Student Affairs, VCU School of Pharmacy

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Appendix E

Student Request to Participate: Reminder Email

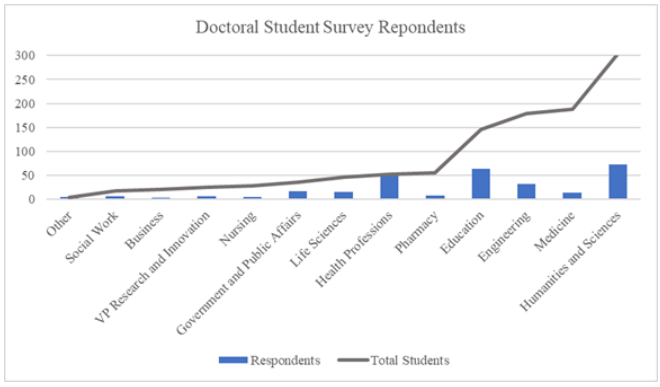
Only 27% of PhD students have shared their feedback -- but it's not too late for your voice to be heard.

Doctoral Student Experience Survey

We want to capture your experience at VCU!

While participation is voluntary, we highly encourage you to provide feedback. The survey takes approximately 10 minutes to complete. Your responses will help improve the quality of doctoral programs and the support available for doctoral students. Your information will be kept confidential and your responses will help improve the quality of programs and support for doctoral students.

(Image: Graph depicting number of doctoral students and number of students who have provided feedback by school)



Thank you for your participation, and best of luck on your doctoral journey.

Sincerely,

Michaela Ranaldi Bearden
Senior Director, Center for Corporate Education, VCU School of Business Foundation
beardenmr@vcu.edu

Victoria Keel
Assistant Director for Student Affairs, VCU School of Pharmacy
vakeel@vcu.edu

Appendix F

Online Survey: Program Directors

College of Humanities and Sciences Program Director Inquiry

Nationally, only 50% of doctoral students complete their degree. The Graduate School at VCU is committed to increasing doctoral completion rates. Help us, help you increase retention! Please share your insight into the doctoral student experience by responding to 12 questions. The survey should take approximately 10 minutes to complete. Your information is salient as we work toward providing data driven suggestions for the College of Humanities and Sciences to decrease attrition. Thank you for your participation.

1	Please indicate the program you oversee.	Open-ended
2	What avenues do you use to communicate with doctoral students about their experiences when they are coming into the doctoral program and while they are enrolled in the doctoral program (choose all that apply)?	Email, Telephone, Face-to-face, Zoom/Skype, Text, Other
3	What does your program offer to promote student success and degree completion?	Open-ended
4	What aspects of your role as program director do you see as directly related to student success and degree completion?	Open-ended
5	How do you believe your faculty promote student success and degree completion (give examples)?	Open-ended
6	What are the top three issues students come to you to talk about?	Open-ended
7	What prevents students from being successful in your doctoral program?	Open-ended
8	What interventions does your department deploy to successfully move students through the different stages of the doctoral program?	Open-ended
9	What resources do your students need to successfully move through the program?	Open-ended
10	Do you believe student retention is a problem for your program?	Open-ended
11	What do you believe your program needs in order to decrease attrition for doctoral students?	Open-ended
12	Please provide any additional information that may have been sparked by questions in this survey or you see as relevant to our study.	Open-ended

Appendix G

Informed Consent Form: Program Director Focus Group

RESEARCH PARTICIPANT INFORMATION SHEET

STUDY TITLE: Increasing Doctoral Student Completion Rates Within the School of Humanities and Sciences at Virginia Commonwealth University

VCU INVESTIGATOR: (PI) Dr. Tomika Ferguson, Michaela Bearden, Victoria Keel

You are invited to participate in a research study about expanding the understanding of doctoral students' experiences during each stage of their program. In doing so, the researchers will identify interventions that directly respond to doctoral students' challenges, improve their experience, and ultimately decrease attrition. Your participation is voluntary.

In this study, you will be asked to do the following things:

1. Participate in a focus group about your experience as a Program Director, specifically related to your interactions with graduate students and interventions designed to support Graduate Students.

The objective of the research is to explain doctoral students' experiences so as to offer interventions that foster doctoral student success and decrease attrition. Success is defined as degree completion and barriers are considered obstacles that impede students from obtaining their doctoral degree. Interventions will be identified to address specific barriers. Concepts to be explored include the following:

- Stages within a doctoral program;
- Reasons students leave doctoral programs;
- Internal and external factors that impact student success;
- Resources students utilize that prevent them from leaving a program;
- Resources students need to successfully complete a program; and
- How doctoral students perceive support.

Participating in this study may allow the opportunity for program directors to reflect on their role and relationship with doctoral students. Program Directors may also have an increase in insight related to aspects of doctoral student success and they may learn from other Program Directors during the focus group meetings.

If you have any questions, concerns, or complaints about this study now or in the future, please contact Michaela Bearden (beardenmr@vcu.edu; 804-828-1502) and Victoria Keel (vakeel@vcu.edu; 804-828-3004)

Appendix H

Demographics of Survey Respondents

Gender	Count
Male	30
Female	74
Nonbinary/third gender	1
Preferred not to disclose	1
TOTAL	106

Age	Count
21-29	79
30-39	20
40+	7
TOTAL	106

Enrollment Year	Count
2014	7
2015	14
2016	25
2017	16
2018	21
2019	23
TOTAL	106

Vitae

Michaela Ranaldi Bearden was born on August 23, 1980 in Warwick, Rhode Island to Gary J. and Cynthia E. Ranaldi. She graduated from North Kingstown Senior High School in North Kingstown, Rhode Island, in 1998. She received her Bachelor of Science from Elon College in Elon, North Carolina, in 2002 with a concentration in Business Management. Following graduation, she moved to Richmond, Virginia and spent the next 8 years working in various management and leadership roles within the YMCA of Greater Richmond (2002-2009). In 2010, she began working in that Center for Corporate Education at Virginia Commonwealth University. In 2014, she earned her Master's in Education, Counselor Education, from the VCU School of Education and became a Nationally Certified Counselor. In 2015, she assumed her current role in the School of Business, as the leader of the Center for Corporate Education. During her tenure, Michaela received her certification as a Leadership Circle 360 Coach and has been recognized as a Professional Faculty Award Winner (2018).

Victoria "Tori" Keel was born on March 30, 1983 at the Medical College of Virginia in Richmond, VA to Jarvis Andrew and Patricia Keel. She graduated from Clover Hill High School in Midlothian, VA in 2001. Tori earned a Bachelor of Arts in Psychology and English from the University of North Carolina at Wilmington in 2005. She immediately entered a graduate program at the University of South Carolina and earned her Master's of Social Work degree two years later. Tori was licensed as a Clinical Social Worker in North Carolina and in Virginia in 2010. She transitioned from providing mental health services in community-based organizations to working entirely with college students at University Counseling Services at Virginia Commonwealth University (VCU) in 2009. Her work there earned her the Division of Student Affairs 2016 Most Outstanding Program Award for Paws for Stress which she developed and implemented. In 2018, Tori transitioned into administration and she currently serves as the Assistant Director for Student Affairs in the School of Pharmacy at VCU.