COLLEGE CHOICE AND COMPETENCY-BASED EDUCATION

LEARNER MOTIVATIONS

by

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DEDICATION

This dissertation is dedicated to my smart, sassy, inquisitive, strong young ladies, Bryce and Portia. May having witnessed me achieve this goal while working and being a mom help you see that with hard work you can do anything you put your mind to.

To my ever-supportive husband, Bryan, for loving me even when I'm a sleep-deprived lunatic looking for just one more resource, tweaking one more graphic, or chasing the next shiny thing that catches my eye. For sitting by my side as I cried and just listening – not passing judgment or trying to fix anything – just being there for me. I only hope that one day our girls will be so lucky to find partners like you.

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ABSTRACT

Recently there has been a resurgence of interest in competency-based education, a learning modality which is mastery-based, self-paced and focused on demonstrations of knowledge and skill rather than where or how they were attained (C-BEN, 2016; Cuckler, 2016; Tate & Klein-Collins, 2015; U.S. Department of Education, 2002). The face of higher education is changing, according to NCES (2015), 75% of students enrolled in college have one or more nontraditional characteristics. Recent studies suggest that competency-based education enrollees may fall under the larger non-traditional student population; (Kelchen, 2015; Kelchen, 2016; Kelly & Columbus, 2016). The purpose of this study was to investigate the learners' characteristics, college choice process, and learners' satisfaction with their decision to enroll in competency-based education. This multi-institutional study employed descriptive statistics, correlational research design utilizing ordinary least squares regression analyses, and quantitative content analysis.

This study found the typical competency-based education learner is a nearly 39-year-old, married (66.2%), white (84.4%), Non-Hispanic (89.6%) female (70.2%) who has been out of high school for just over 20 years. She lives in a different location than her current institution (68.5%) and has studied at a prior college (95.7%), including study in her current discipline (61%). She is slightly less likely to be a first-generation student (51.2%) than she is to be the first in her family to go to college. She is also more likely to be eligible for a Pell Grant (48.8%) than not. She is employed full time (71.4%), works an average of 38 hours a week and has worked for nearly 10 years (M=9.63, SD=9.28) in her field of study. 88.1% of these learners were very or extremely satisfied with their decision to enroll in competency-based education. The modality, learning goals, and social goals enrollment motivators significantly, positively influenced learners' satisfaction with their decision to enroll. Common themes emerged in the choice process including affordability, career advancement, learning goals, and learning modality. I conclude that each learners' path to CBE is their own and higher education institutions need to place greater emphasis on this learning pathway's knowledge building capabilities rather than solely it's perceived vocational focus.

CHAPTER ONE – INTRODUCTION TO THE STUDY

Introduction

Susan[1] never wanted to go back to school: she'd done the calculations, she was closer to retirement than anything else, and the payout of a college degree didn't balance with the cost to obtain it. With years of industry experience, a good job, and children nearing college themselves, the prospect of having to pay and wait until she'd passed a class to be reimbursed was too much risk (Morrison, 2015). Like many non-traditional, distance learners, the cost of higher education weighed heavily in her choice process (Lansing, 2017; Morrison, 2016). Her employer partnered with a competency-based education program, offering employees the opportunity to learn with no upfront cost, and Susan's entire perspective changed. Something she had written off as unattainable became a realistic choice. Over the next several months Susan dove into her studies headfirst, coming out just nine months later with an associate degree, and a thirst to continue. She continued working toward her bachelor's degree, even considered going on from there (Morrison, 2015).

Susan not only attained her degree but modeled for her children the dedication it takes to complete a degree while working and raising a family. The availability of competency-based education made access to higher education a viable choice for Susan. By obtaining her degree, the effect is further reaching than Susan's own

[1] Name changed to protect the promised anonymity of the research participant.

academic and career development. One moment, a small catalyst, and at least three lives are changed for the better. Prior research has shown that learners whose mothers have earned a college credential are more likely to attain one themselves (Atwell, et al, 2007; Yakaboski, 2010).

To set the context, this study will utilize the terminology 'learner' to refer to those who are over eighteen, participate in organized educational activities, and have one or more characteristics of a non-traditional student (Choy, 2002; Cross, 1978; Cross, 1979; Finch, 2016; NCES, 2015). The term learner is commonly used in the adult education and adult learning literature to which this research will contribute. Also included in this literature is the practice of competency-based education as a learning modality aimed at adult learners. While it is experiencing contemporary interest, this method has a relatively brief history in the greater context of higher education.

Since the 1970s, institutions of higher education have been offering what is known as competency-based education (CBE), a learning modality where learners demonstrate mastery of a set of competencies that comprise a credential (C-BEN, 2016; Grant, 1979; Spady, 1977; U.S. Department of Education, 2002). In postsecondary education, there are currently several types of competency-based education programs: those that are tied to the credit hour and courses, those that operate without a cross-walk to the credit hour through direct assessment of competencies, and a hybrid of these two (Book, 2014; Brower, 2014; Ebersole & Stewart, 2011; Fain, 2015; Hatcher

Group, 2014; Johnstone & Soares, 2014; Kelchen, 2015; Laitinen, 2012; Snowden, 2014; U.S. Dept. of Education, 2014).

Excelsior College, Thomas Edison State College, Charter Oak State College, Alverno College, and SUNY Empire State were all founded in the early 1970s with directives to serve adult learners (Ebersole & Stewart, 2011; Klein-Collins, 2013; Thackaberry, 2016). With these directives in mind, the institutions developed competency-based education programs that met the flexibility adult learners needed to complete credentials. These early competency-based education programs allowed learners to bring in prior learning or use institutional resources, namely learning materials and faculty, to develop the knowledge and skills necessary to prove their mastery of competencies through authentic assessments. Wax and Klein-Collins (2015) described authentic assessments succinctly as "the kind of projects or assignments that they [learners] would regularly encounter in an actual workplace" (para. 4). Once mastery is certified, students are awarded credit that leads to a higher education credential, whether a certificate or a degree.

After the dawn of the internet age, in 1997, the governors of 19 western states banded together to found Western Governors University. The purpose of this new institution was to develop the workforce needs of rural western states by providing access to quality credentials (Book, 2014; Ebersole & Stewart, 2011; Johnstone & Soares, 2014; Kelchen, 2015; Laitinen, 2012; Morrison, 2016; Thackaberry, 2016a). Within a decade, the Department of Education saw the value of this modality of

education and included a provision in the Reauthorization of the Higher Education Act of 1965 to include direct assessment competency-based education (Fain, 2013a; Lacey & Murray, 2015; Lederman, 2012; U.S. Department of Education, 1999). While Western Governors University did not continue the direct assessment path, this provision opened the door for innovation. It would be another 5 years before anyone acted on the provision, but when Paul LeBlanc, president of Southern New Hampshire University did with College for America, it solidified contemporary interest in competency-based education (Clerkin & Simon, 2014).

In January of 2015, the U.S. Department of Education used authority under the experimental sites program to award over 40 institutions authorization to develop new programs which are self-paced, competency-based education programs tied to the credit hour or a hybrid of direct assessment program and some credit hour-based coursework. (Fain, 2015; Morrison, 2016; U.S. Department of Education, 2014). The implementation of these programs was delayed by a lag in the release of the operating guidelines from the U.S. Department of Education, which were a condition in the accreditors' approval process for substantive change requests for new and revised competency-based education programs (Bounds, 2015; C-RAC, 2015; Laitinen, 2015).

The rise of this wave of competency-based education is driven by the many calls for a better educated American populace, by President Barack Obama (2009) and the major foundations which support higher education (Lumina, 2009). Competency-based education provides another avenue for access to higher education. Learners who

pursue competency-based education look for the ability to "work the school around [their] life" and are conscientious regarding both time and financial costs. (Morrison, 2016, p.74). This allows learners to diminish the opportunity cost of pursing higher education by allowing them to continue their work, family, and community obligations.

Learners cannot engage in higher education until they make an institutional choice and enroll in a program. Without understanding the college choice process, we risk providing an inequitable access. College choice varies greatly for different subpopulations of learners – both in what motivates them to enroll in higher education and what process they undertake to make that decision. Many adult learners make a concurrent decision of both when and where to enroll (Bers & Smith, 1987; Morrison, 2016; NCES, 2015; NPEC, 2007). This research is built on the college choice model of Southerland (2006) while also drawing proxies from the community college choice literature (Broekemier, 2002; Laanan, 2003, Peek & Goldstein, 1991; Somers, et.al., 2006; Southerland, 2006). What little is known about the competency-based education student population shows parallels to community college enrollees.

Problem Statement

The face of higher education is changing, and in addition to continuing to support our traditional student populations, institutions need to consider the best way to address the educational and student support needs of nontraditional learners. According to NCES (2015), seventy-five percent of students enrolled in college have one

or more nontraditional characteristics. Nontraditional characteristics include: being independent (for tax purposes), having dependents, having received a GED or other high school equivalency rather than a high school diploma, delaying postsecondary attendance, attending part-time, and working full-time (NCES, 2015, p. 6). With non-traditional learners attending higher education at higher rates than ever before, more attention to the needs of these learners is warranted (Stevens, 2014).

Recent studies suggest that competency-based education enrollees may fall under the larger non-traditional student population; however, more information is needed about the characteristics of CBE learners to understand specific impacts on access, recruitment, and delivery of services (Kelchen, 2015; Kelchen, 2016; Kelly & Columbus, 2016). As Kelchen (2016) notes, the only data currently available on competency-based education enrollees from federal datasets, such as IPEDS, are those learners enrolled in institutions with primarily competency-based operations. NCES does not separate competency-based enrollments from other types of enrollments such as distance education enrollments. However, from the nine institutions Kelchen (2016) studied, the data shows that 90% of these learners were 25 or older, on average 24% received Pell grants – an indicator of low-income status -- and on average 55% were women.

My previous research (2016) mirrors these statistics showing direct assessment competency-based education learners are working adults, with family and community commitments in addition to their school work. They make decisions based upon

financial impacts including the acceptance of transfer credits and employer benefit programs and the opportunity costs of programs in addition to direct costs (Morrison, 2016). To understand the reasons learners' choose competency-based education programs, we must also investigate how learners select what program to enroll in.

Research on the college choices of older learners is scant and tends to be focused on community college enrollees (Broekemier, 2002; Laanan, 2003; Peek & Goldstein, 1991; Somers, et.al., 2006; Southerland, 2006). Whether they are new to postsecondary education or a returning learner, the literature about the college choice experiences of non-traditional learners is noted as lacking by several authors (Bergerson, 2009; Kortesoja, 2009; NPEC, 2007; Morrison, 2016; Peek & Goldstein, 1991; Perna, 2006; Roszawki & Reilly, 2005; Southerland, 2006). In her 2017 article, Jill Lansing notes, "Despite the growing prevalence of distance learning opportunities and the expanding body of research on distance education, research on college-going decisions of distance learners is sparse (p.365)." In addition, new research by Andrew P. Kelly and Rooney Columbus of the American Enterprise Institute (2016) note "fewer articles have explored empirical questions as to who actually enrolls in CBE…" (p. 2). Their research yielded just thirteen articles that look at learner characteristics and none focused on the college choice process (Kelly & Columbus, 2016). When higher education administrators, faculty, employers, and policymakers understand the factors that influence students' enrollment in competency-based programs, they can enhance access to higher education, particularly for adult learners.

Purpose of the Study

The purpose of this study is to investigate the learners' characteristics, college choice process, and learners' satisfaction with their decision to enroll in competency-based education. The study utilizes data I first collected for the University of Wisconsin – Milwaukee National Research Center for Distance Education and Technological Advancements (DETA) in fulfillment of grant requirements. While that research focused on the enrollment motivators for competency-based education enrollees, the survey also contained questions related to these learners' college choice process that are the focus of this study. The intent of this study is to identify competency-based education learners' college choice process and explore if the enrollment motivators predict learners' perception satisfaction with their decision to enroll. Finally, this study describes the learners' characteristics in competency-based education. This study helps demonstrate who is attending CBE programs and provides evidence for how these programs expand access to higher education. This research will also assist the higher education community in communicating the value of competency-based education to potential learners, thus increasing their access opportunity.

Research Questions

Overall, the study investigates the learners' characteristics and demographics of competency-based education enrollees, also how they determined a competency-based

education program was the right opportunity to fulfill their educational, career, and life goals. Specifically, it asks the following questions:

1. What are the characteristics of competency-based education learners?
2. Do characteristics of competency-based education learners predict enrollment motivators?
3. Do characteristics of competency-based education learners predict satisfaction with their decision to enroll?
4. Do the enrollment motivators predict competency-based education learners' satisfaction with their decision to enroll?
5. What is the college choice process for competency-based education learners?

Significance of the Study

With the renewed interest in all forms of competency-based education by students, institutions, and policymakers, this study is timely and relevant (Fain, 2015; U.S. Dept. of Education, 2014). There are more than 500 competency-based education programs in development, including the sixty eight percent of community colleges who stated they are in the planning stages of implementing competency-based education (AACC, 2016; Fain, 2016; Fain, 2015; Fleming, 2015; Kelchen, 2016; Mitchell, 2015; Nodine, 2016; Public Agenda, 2015). With many institutions entering this educational market, understanding the learners interested in this modality is key to competency-based education implementation success.

This study will help institutions understand the enrollment motivators that led students to choose a competency-based education program and the process they undertook to make their final enrollment decision. Understanding these elements holds the potential to assist institutions in opening access to learners through implementation of this learning modality. For institutions, this could mean additional enrollments and the potential through greater understanding of the population to retain learners in CBE programs. Enrollments and retention are of greater importance than ever due to the decreases in state funding the sector has seen over the years (Mitchell, Leachman, & Masterson, 2016). The benefit goes beyond individual learners and institutions of higher education. It supports the national educational attainment goals set by President Obama in 2009 and echoed by many foundations that support higher education. The goal to have America lead the world in postsecondary attainment by 2020 (Obama, 2009) will not be achievable without the addition of new learners.

As noted previously, the U.S. Department of Education recently utilized its experimental sites authority to grant forty institutions more flexibility in crafting competency-based education programs with regard to how they award federal financial aid (Fain, 2015; Morrison, 2016; U.S. Department of Education, 2014). Adding to the significance of this study is the dearth of extant literature on the college choices of adult learners necessitating making proxies to community college learners (Broekemier, 2002; Peak & Goldstein, 1991; Somers et al., 2006) and traditional learners (Hossler &

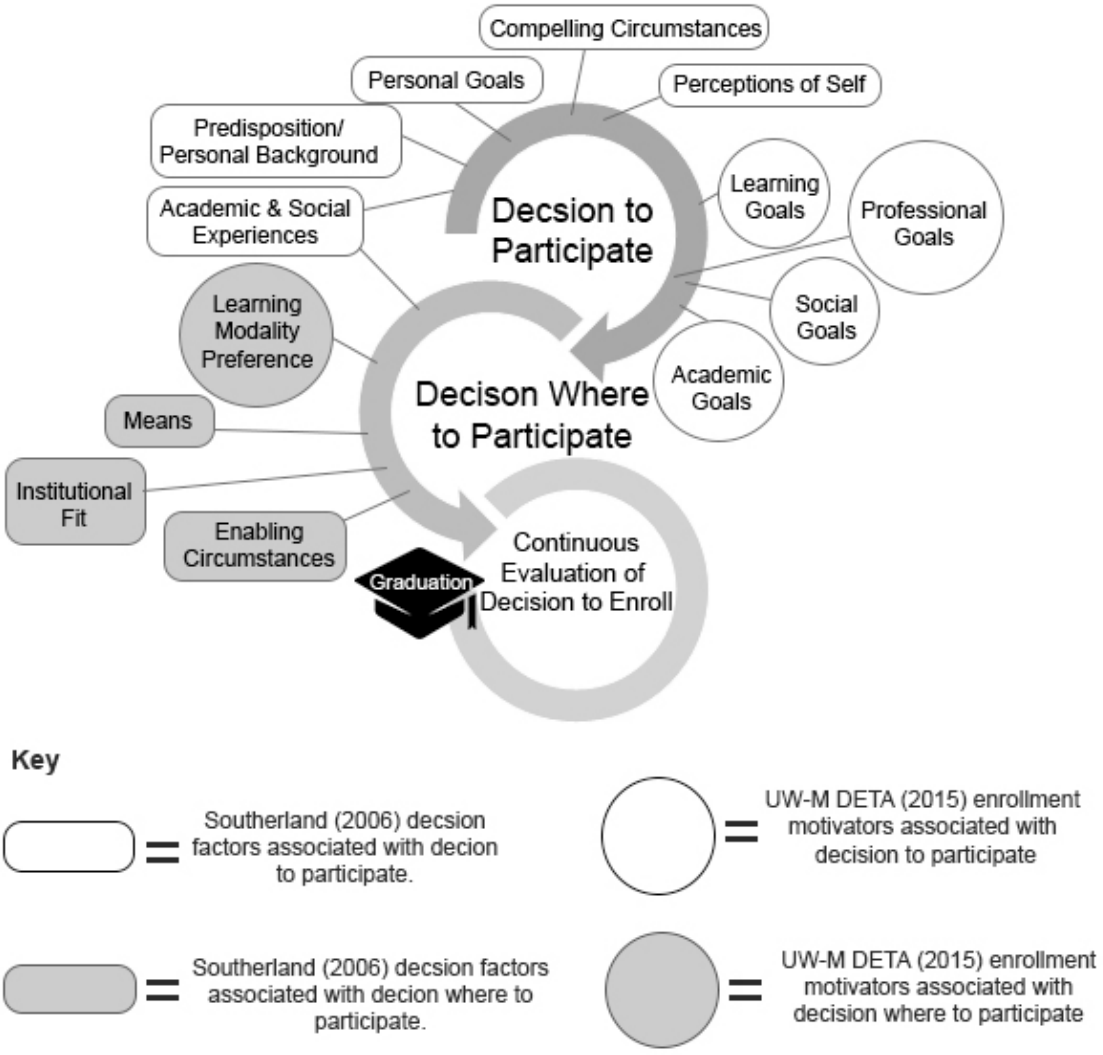
Gallagher, 1987; NPEC, 2007). Bers and Smith (1987) coined this well nearly three decades ago:

> While these models of college choice may apply to the nontraditional student, virtually no empirical studies have been conducted and reported in the literature to validate these models for nontraditional students (Bers & Smith, 1987, p.40).

Theoretical/Conceptual Framework

This study will draw on two theoretical frameworks, the 2006 college choice and persistence model of Southerland and the 2015 enrollment motivation categories of the University of Wisconsin – Milwaukee National Research Center for Distance Education and Technological Advancements (DETA). Southerland (2006) posits that adult learners utilize a three-decision point model for college choice and persistence (defined as continued enrollment). Simply stated, first they decide whether to participate, then when and where to participate, and finally they continuously reevaluate their prior decisions until they complete a credential (Morrison, 2016; Southerland, 2006). This process and its inputs and outputs are shown in Figure 1.1.

Figure 1.1: Theoretical/Conceptual Framework



Graphic created by Cali Morrison, informed by Southerland (2006) and UW-M DETA (2015)

Both models investigate the categories of factors, also known as enrollment motivators, which drive learners to make the decision to enroll in postsecondary education. These can be found in Table 1.1.

Table 1.1: Theoretical Frameworks

Southerland (2006, p.15) "determining decision factors:	The DETA (2015, p. 78-79) Toolkit breaks down the enrollment motivation categories to:
Predisposition/Personal Background, Personal Goals, Perceptions of Self, Compelling Circumstances, Means, Enabling Circumstances, Institutional Fit/Institutional Treatment of Nontraditional Students, Academic and Social Experiences."	"Learning Modality Preference, Learning Goals, Professional Goals, Academic Goals, Social Goals."

As Southerland (2006) notes, there are many factors that could be considered as enrollment motivators. Southerland drew his categories from several decades of literature. The DETA enrollment motivation categories, and the subsequent survey questions which support them, were developed utilizing "a grounded-theory, qualitative analysis of student goals as recorded during the recruitment and application process for the University of Wisconsin (UW) Flexible Option…" (DETA, 2015, p. 139-140).

While other theories of college student choice exist and are revered and often quoted in the extant literature, they primarily focus on the experiences of traditional aged students. Hossler and Gallagher's 1987 model, considered the dominate model, has three stages as well – predisposition, search, and choice – but was built with a focus on students moving from high school directly into college (Hossler & Gallagher, 1987; Southerland, 2006). Southerland (2006) explained the issue with relying on these theories well:

> Ironically, the prominent models of college choice and persistence have not been substantially overhauled for some time. Practitioners and theorists continue to rely upon models of college student behavior that are twenty, thirty, even fifty years old. As students evolve ever more rapidly, the accuracy and utility of these models erode at an ever-increasing pace (p. 2).

The DETA enrollment motivators and Southerland's college choice and persistence model share common themes of personal, academic, and social experiences and how they influence a learners' college choice. These theories will define the code book for the quantitative content analysis proposed for this study. A deeper discussion of college choice theories is covered in Chapter 2 of this manuscript.

Research Design

The research design is a quantitative analysis of secondary survey data I collected in fulfillment of grant deliverables committed to the University of Wisconsin – Milwaukee National Research Center for Distance Education and Technological Advancements (DETA) in 2016. The national population of competency-based enrollees is difficult to fully determine. Federal datasets, such as the Integrated Postsecondary Education Data System (IPEDS) do not delineate competency-based learners from other institutional enrollments (Kelchen, 2015; Kelchen, 2016).

The population for this study is comprised of 5,142 enrollees from four institutions offering competency-based, self-paced learning. While 421 survey responses were collected, the usable sample size for this research was 346 learners.

Descriptive statistics were utilized to determine the learners' characteristics of competency-based education enrollees. Regression analyses were utilized to investigate three areas – if learners' characteristics predicted enrollment motivators; if learners' characteristics predicted satisfaction with their decision to enroll in competency-based education; and if enrollment motivators predict learners' satisfaction with their decision to enroll. To investigate the college choice process, open-ended textual questions were analyzed utilizing quantitative content analysis. The responses were coded, utilizing computer aided text analysis along with human coding. Response frequencies were tabulated.

Operational Definitions

For the purposes of this study, the operational definition is provided for each term.

Authentic Assessment

Authentic assessment refers to the evaluation technique which asks learners to "use academic knowledge in a real-world context for a significant purpose" (Johnson, 2002, p.165). Additional authors have noted that authentic assessment requires "students to use the same competencies, or combinations of knowledge, skills, and attitudes, that they need to apply in the criterion situation in professional life" (Gulikers, Bastiaens, & Kirschner, 2004, p. 69). Authentic assessments can present as written works, projects, portfolios, simulations, reports that mimic activity which is required of

professionals in the discipline being assessed, or even inter-disciplinary (Darling-Hammond and Snyder, 2000; Gulikers et al., 2004; Johnson, 2002; Wiggins, 2011).

College Choice

College choice is the process a learner undertakes after they have been motivated to enroll, to determine the right fit, and enroll in a postsecondary education option (Bergerson 2009; Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987; Jackson, 1987; Perna, 2006; Southerland, 2006).

Competency-based Education

Much of chapter two outlines the various definitions of competency-based education. For the purpose of this research, it is defined as self-paced, mastery-based learning focused on demonstrations of knowledge and skill rather than where or how they were attained.

Direct Assessment Competency-based Education

Direct assessment competency-based education is best defined by the text included in the 2006 revision of the Higher Education Act of 1965:

> …an instructional program that, in lieu of credit hours or clock hours as a measure of student learning, utilizes direct assessment of student learning, or recognizes the direct assessment of student learning by others. The assessment must be consistent with the accreditation of the institution or program utilizing the results of the assessment (e-CFR, §668.10 (a)(1)).

Enrollment Motivators

Enrollment motivators are the factor(s) which converge and drive a student to enroll in postsecondary education (Southerland, 2006). Southerland (2006) provides the examples of personal goals, perceptions of self, and compelling circumstances. Examples from the University of Wisconsin – Milwaukee National Research Center for Distance Education and Technological Advancements (DETA) Toolkit (2015) include "learning modality preference, professional goals, learning goals, academic goals, and social goals" (p. 78-79).

Learners

Learners refers to those who are over eighteen, participate in organized educational activities, and have one or more characteristics of a non-traditional student (Choy, 2002; Cross, 1978; Cross, 1979; Finch, 2016; Merriam, Cafferella, and Baumgartner,2007; NCES, 2015).

Assumptions

This research is based on the assumption that there are factors that motivated learners to enroll in competency-based education programs and that learners undertook a process to make their enrollment choice. The study also makes the assumption, based on the work of Kelchen (2015, 2016) that the majority of the learners enrolled in competency-based education programs are adult learners.

Delimitations

In the original data collection, I purposefully chose to limit the study to those learners enrolled in competency-based education programs which are federally financial aid eligible, have curriculum which are faculty developed (rather than outsourced to a third-party provider), provide a personalized support person for enrollees (i.e. coach, mentor, advisor, etc.) and are online, self-paced, and mastery-based learning. This was under the advisement of the grant funder (T. Joosten, personal communication, April 12, 2016) to serve the purpose of data comparability between institutions. I also purposefully chose to limit the study to undergraduate enrollees, as their motivational factors may vary from graduate student enrollees. As there is great diversity in institutions offering competency-based education programs, this did limit the depth of the population but allows for a more focused investigation. The purpose for this focus is to facilitate the comparability of the data. This study only looks at learners who made the choice to enroll in a competency-based education program and does not attempt to investigate those who considered a competency-based education program but ultimately enrolled in another type of program.

Limitations

This study acknowledges the limitations of conducting a secondary analysis of data rather than collecting primary data. Such as the inability to change the population the data was collected from, the recruitment methods for both institutions and learners, and the survey instrument itself. Although secondary data analysis has the mentioned limitations, it is a valid methodology, which is underutilized in the social sciences (Smith, 2008).

Additionally, the self-select nature of the participants presents a limitation of the original data collection. This is common in survey data collection. As the original survey participation for learners was not tangibly incentivized, that could have affected the number of participants. Furthermore, prior research by Morrison (2016) showed that competency-based education programs are marketed with an eye toward the motivational factors included in the survey, thus the influence of this marketing, which is not being controlled for, could have affected students' college choice.

Summary

Adult learners are no longer the outsiders in higher education, in fact, nontraditional students are now the majority of learners (NPEC, 2015). Online learning has moved from side stage to center stage (Poulin & Straut, 2016). Additionally, there has been a revival in interest in the learning modality known as competency-based education (AACC, 2016; Fain, 2016; Fain, 2015; Fleming, 2015; Kelchen, 2016; Mitchell,

2015; Nodine, 2016; Public Agenda, 2015; U.S. Dept. of Education, 2014). These factors create an ideal space to explore how learners choose competency-based education programs.

CHAPTER TWO – LITERATURE REVIEW

Introduction

Competency-based education is not a new phenomenon. Though it has gained popularity in recent years, its origins can be traced back much further. This review of the relevant literature will explore the historic moorings of competency-based education and its winding path to where it is today. Additionally, we explore current knowledge about who enrolls in competency-based education and what role that plays in access to higher education in general. The review also looks at the history of the college choice process and its connotations for this study.

To build a comprehensive view of these elements of the extant literature, I utilized varied combinations of the terms *"competency-based education," "competency-based learning," "CBE," "adult learners," "college choice," "college search," "Non-traditional [student, learner, college student]," "college choice theories," "college choice and online learning," "college choice and distance education," and "access and distance education," "access and college [choice, search, selection]."* Utilizing these search terms returned a variety of literature about these concepts. Much of the literature in competency-based education focuses on specific disciplines or on elementary and secondary education. Another section of the literature focuses on the development of competencies, curriculum, and assessments for deploying competency-based education.

These topics were deemed adjacent to this research and not included in this literature review.

There were three distinct waves of interest in competency-based education: the mid-1970s to early 1980s, the late 1990s, and from 2010 to present. I observed, though not formally investigated, the highest concentration of research on CBE during these time periods. This literature review focused mostly on literature published after 2000; however, where deemed seminal, older research was included. The purpose of this focus was to recognize the influence of distance education technologies and promote relevance to current practice. Also, research on competency-based or related topics was limited to CBE research conducted in the United States, for reasons of population comparability.

To begin, I will unpack the concept of competency-based education.

What is Competency-based Education?

To begin this discussion of competency-based education, I will examine each element of the term. According to dictionary.com (n.d.), competence is "*the possession of required skill, knowledge, qualification, or capacity"* and education is "*the act or process of imparting or acquiring particular knowledge or skills, as for a profession."* Simply, competency-based education focuses on the demonstrated mastery of a set of defined skills and knowledge rather than how, where, or how long it took the student to develop that mastery. This contrasts with traditional online or on-ground academic

programs which are tied to time using the Carnegie Unit (Klein-Collins, 2013; Laitinen, 2012; Tate & Klein-Collins, 2015).

It is important to note that, while the various definitions of competency-based education have similar elements such as maintaining a focus on learning rather than time, there is no single agreed upon definition (Cuckler, 2016; Everhart, Bushway, & Schejbal, 2016; Gervais, 2016; Kelchen, 2015, Sebesta, 2016, Thackaberry, 2016). Spady (1977) treated competency-based education as: "a data-based, adaptive, performance oriented set of integrated processes that facilitate, measure, record, and certify within the context of flexible time parameters the demonstration of known, explicitly stated, and agreed upon learning outcomes that reflect successful function in life roles" (p. 10).

In 1979, Grant and colleagues put forth, as the basis of their work exploring the implications of competence-based education programs, the following definition:

> Competence-based education tends to be a form of education that derives a curriculum from an analysis of a prospective or actual role in modern society and that attempts to certify student progress on the basis of demonstrated performance in some or all aspects of that role. Theoretically, such demonstrations of competence are independent of time served in formal educational settings (Grant, 1979, p. 6, pp. 3).

This definition fits well with much of the modern discussion, especially as it pertains to how higher education is preparing (or not, as some believe) learners for the workforce. However, competency-based education's perceived vocational focus bars its wide acceptance, as many within higher education still view the purpose of higher education being more than vocational preparation (Bok, 2013; Fortino, 2012; Selingo, 2013; Sutton, 2016).

In 2002, the U.S. Department of Education set their definition of competency as "the combination of skills, abilities, and knowledge needed to perform a specific task" (p. 7). While this definition of competency echoes within many of the other definitions, it is still not a definitive definition used by the entire field. This is, in part, complicated by the different modalities, or approaches, of competency-based education being offered today.

It is possible the field is not operating from a single definition of competency-based education because many still view it as a disruptive innovation (Weise, 2014). According to Clayton Christensen (2017), disruptive innovation is "a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors" (para.1). To agree upon a definition could signal competency-based education is moving toward becoming a sustaining innovation and more into the mainstream of higher education (Christensen, 2017; Weise, 2014).

Another factor which may affect the use of a common definition is the divide seen between two terms: learning and education. In a 2014 article in Strategic Enrollment Quarterly, Monique Snowden made an observation by the work of Knowles, Holton, and Swanson (2011) that there is a fundamental difference between education and learning: namely which entity is being emphasized. Learners are the focal point of competency-based learning, whereas educators are at the center of competency-based education (Snowden, 2014).

Following in this same vein, the 2015 joint research published by the American Council on Education and Blackboard, Inc. makes the distinction of competency-based education focusing on the academic programs, practices, and policies whereas competency-based learning focuses on learners and their experiences in learning environments, whether those are formal or informal environments (Everhart, Sandeen, Seymour, & Yoshino, 2015). Often, competency-based education and competency-based learning are used interchangeably, likely stemming from the lack of a common framework and vernacular. In this study, competency-based education will be the primary term utilized, as the assessment of learning in a competency-based modality is not within the scope of this study.

The Competency-based Education Network (C-BEN) defines competency-based education as "*an intentional and transparent approach to curricular design with an academic model in which the time it takes to demonstrate competencies varies and the expectations about learning are held constant"* (C-BEN, 2016). As will be explained in a later discussion of the Carnegie Unit, a focus on learning has not always been the case for higher education. For over a century, time has been the constant and learning has been variable (Klein-Collins, 2012; Klein-Collins, 2013; Laitinen, 2012). This means that while all learners exit a course or program with the same number of credit hours, the actual learning attained from learner to learner is different.

In their 2015 paper for the Council on Adult and Experiential Learning (CAEL), Tate and Klein-Collins define competency-based education as, "programs that focus

more on what students have learned, rather than where or how long the learning takes place" (p.2). Additionally, Tate & Klein-Collins (2015) state "CBE programs are designed to improve the quality of higher education by putting the focus squarely on demonstrated learning outcomes" (p.2).

There are several different implementations of competency-based education being practiced today: direct assessment programs which assess learning without a cross-walk to clock or credit hour, CBE programs tied to the credit hour and courses, and a hybrid of these two modalities (Book, 2014; Brower, 2014; Ebersole & Stewart, 2011; Fain, 2015; Hatcher Group, 2014; Johnstone & Soares, 2014; Kelchen, 2015; Kelchen, 2016; Laitinen, 2012; Snowden, 2014; Tate & Klein-Collins, 2015; U.S. Dept. of Education, 2014). While some programs tied to the credit hour system have been operating and eligible to offer federal financial aid for some time, only a handful of direct assessment competency-based programs have been awarded the ability to offer federal financial aid (Fain, 2015b).

The ability to offer federal financial aid does not affect the modalities of competency-based education. Rather, possessing financial aid eligibility can affect access, opening opportunity to learners who cannot afford to pay out of pocket. The process for gaining eligibility for Federal Student Aid is quite rigorous. The program must first obtain the approval of their institutional accrediting body to offer the direct assessment modality and then must apply to the U.S. Department of Education. This includes in-depth accounting of how learning will be measured, examples of those

measurements, the ways in which faculty will interact with students, and how competency assessment compares to the credit or clock hour (U.S. Department of Education, GEN-13-10, 2013).

Though they take on slightly different modalities, in her 2013 occasional paper for the National Institute for Learning Outcomes Assessment (NILOA), Rebecca Klein-Collins lays out five unifying concepts of competency-based degree programs:

1. "Competencies: An educated person is someone who does not just 'know' but can also 'do'" (p. 5).
2. "Quality: Defining the competencies require for graduation helps ensure the quality of graduates" (p. 6).
3. "Assessment: Competency-based assessment validates learning" (p. 7).
4. "Learning: Programs should focus on learning rather than on time spent in learning activities" (p. 7).
5. "Student-Centered: Programs should 'meet students where they are'" (p. 8).

Echoes of these concepts ring throughout each of the definitions of CBE described earlier, support development of cohesive programs, and stand true across CBE modality. These modalities share many similarities and could factor into a learner's choice of a specific competency-based program, because the modalities offer varying levels of flexibility in learning.

Now that the foundation is laid for what competency-based education is, I will explore the significant historical events and origins of the movement to bring learning to the center of education.

Historical Developments of Competency-based Education

Apprenticeships

The origins of competency-based learning can be traced back to ancient Babylon when young men worked to learn a craft or a trade from an experienced master tradesperson and paid for it with an agreed upon number of years of work. These arrangements continued throughout history, with apprentices moving up to the role of journeyman after the agreed term and working for wages toward their own master status ("Apprenticeship," 2015). In more modern times, many institutions now employ apprenticeship programs, which consist of concurrent enrollment in on-the-job training, often with compensation or the promise of a job upon completion, and coursework which complement each other ("Apprenticeship Programs," 2013). In these early programs, apprentices had to prove their skill and ability in order to progress from apprentice to journeyman to master. Each step along the journey had distinct markers, or competencies, which the junior man had to learn. Socio-politically, in the beginning of documented apprenticeships, there were not vocational/technical postsecondary schools through which young men could learn the skills. Their choices in life were more limited, and social mobility would happen via apprenticeship programs. In these ways, I

see apprenticeships as one of the earliest contributors to the development of modern competency-based education programs. This sentiment is echoed by Nodine (2016) who stated, "the history of outcomes-based approaches can be traced back hundreds of years to craft guilds, apprenticeship training programs, technical training programs (in the military, etc.), and licensure programs (for doctors, lawyers, etc.)" (p.6). However, since apprenticeship programs were typically time-bound, and only available to men, they were different from modern competency-based education programs. The concept of time, and how it has been used as a proxy for higher learning for over 100 years, leads us next into an exploration of the Carnegie Unit.

The Carnegie Unit and Higher Education

In 1905, a ten-million-dollar check from Andrew Carnegie changed the way colleges and universities are run to this very day (Silva & White, 2015; Silva, White & Toch, 2015). It created the Carnegie Foundation for the Advancement of Teaching, intended to create a pension system for professors, the logistics of which required colleges and universities to begin tracking faculty workload, for equitable distribution of the pensions (Silva & White, 2015; Silva et al., 2015). Following in the wake of the Carnegie Unit, which was developed to track requirements for college preparatory high school, colleges and universities adopted the credit hour as the unit of measure to track faculty productivity (Silva & White, 2015; Silva et al., 2015). A credit hour is based on the number of "contact hours" students spend in class per week in a given semester (Silva et al., 2015). For a three credit-hour course, a student will typically spend 3 hours

in class per week for 15 weeks (Silva & White, 2015; Silva et al., 2015). A reflection of the industrial background of the foundation's namesake and the state of the American labor force at this point in history, the credit hour was a mechanism to improve the operational efficiency and standardization of higher education. Although, as Birnbaum (2004) points out, systems designed to promote efficiency may reduce effectiveness if they are not consistent with what the participant's values.

In becoming the central organizing unit for faculty workload, the credit hour also became the de facto proxy to tracking student learning. However, what it actually tracks is what is commonly called 'seat time,' or the input of instruction not the output of real learning. The Carnegie Unit is so entrenched in the management of higher education nothing has been found yet to replace it. While some institutions are moving toward tracking learning – most notably those using direct assessment competency-based learning – the majority of higher education, even many competency-based programs, are still tracked to the credit hour (Silva & White, 2015). The federal government still ties funding, inclusive of federal financial aid eligibility, to the credit hour, with a very few exceptions (Silva & White, 2015; Silva et al., 2015). Finance and administrative leaders in higher education use it to track productivity, finances, and more (Silva & White, 2015; Silva et al., 2015). In their recent review of the Carnegie Unit, a research team from the Foundation concluded that the Carnegie Unit still holds value as the common language, or currency, of higher education and though it has caused barriers for some innovation, its benefits still outweigh its drawbacks (Silva et al.,

2015). The primary barrier the Carnegie Unit presents to innovation is its rigidity in what counts towards contact hours.

While competency-based education divorces itself from the credit hour in the direct-assessment applications, it does not in the more 'traditional' competency-based program in which competencies are presented within courses which bear credit hours, especially for means of tracking satisfactory academic progress for federal financial aid (Book, 2014; Johnstone & Soares, 2014). Even in innovative programs like direct assessment, federal financial aid eligibility requires a cross-walk to the credit or clock hour. Though this may never be evident to the learner, it is a required justification of the rigor of the program for financial aid eligibility (U.S. Department of Education, GEN-13-10, 2013).

The primary message from this section is that the entire system of higher education is over-dependent on this one idea, this one measure of productivity started by a well-intentioned steel magnate and breaking free to embrace change is very difficult. The credit hour system infiltrates functionality throughout institutions and our federal higher education support systems, so many institutions have chosen to not break from its chains. Next, I will explore some of these 'traditional' or credit-hour dependent competency-based education programs, looking back into the 1970s to understand the modern origins of these programs.

The Competency-based Education Programs of the 1970s

In the 1970s, the economy, and the return of our armed forces from service in Vietnam, spurred a return to higher education by more non-traditional learners. These learners made demand for new learning modalities that worked within their lives. Additionally, they looked for programs that accepted the learning they had acquired outside of the academy. There was a recession, high oil prices, and high unemployment combined with stagflation, a slow growing economy with simultaneous rising inflation (Nielsen, 2008). Many women were returning to school and the workforce after having spent years raising children and managing households, so they had skills, and maybe even some credits from school attended in their youth, which many traditional institutions did not accept as they were outdated (Ebersole & Stewart, 2011).

Gallagher (2014) explains these proximal factors surrounding the impetus to return to college:

> This promise of more efficient and affordable education takes on particular resonance in historical moments of low public confidence in higher education and high public concern about the cost of higher education. Student demographics are changing; employers are clamoring for more "competent" workers; and the federal government and business leaders are calling for, and funding, initiatives meant to promote productivity and efficiency. These conditions apply today—and they applied in the 1970s (p.19).

These demographic shifts coupled with the Higher Education Act of 1965 led the U.S. Department of Education to develop and provide grant funds through the Fund for Improvement of Postsecondary Education (FIPSE). FIPSE grants allowed select colleges

to develop competency-based education programs to help address access issues for the new demographic of college student (Klein-Collins, 2013; Thackaberry, 2016).

These calls for education that worked for adult students instead of against them were met in part by a group of new institutions formed for the express purpose of serving adult learners, such as Excelsior College, Thomas Edison State College, Charter Oak State College, SUNY Empire State, and others, many of which built programs with FIPSE grants. While they each had uniqueness in their mission and operations, their underlying goal was the same: to help adult students gain quality credentials. These institutions remain in operation today and they have all continued to evolve to serve their target student population best by adding the option of completing courses to the use of online education (Ebersole & Stewart, 2011; Klein-Collins, 2013). The addition of online education would not have been possible without the launch of the public internet. Next, I will look briefly at the evolution of the public internet and its implications for competency-based education.

The Public Internet and Online Education

The public internet launched in the early 1990's and for those of us who were around at that time, we can still hear the beep, screetch, bodebo of our America Online connecting through the dial-up phone connection. Compared to what we know today, the internet in infancy was clunky, gaudy, and slow. But even at that, it expanded a world of possibility for higher education. Merriam et al. (2007) expound, "technology's potential for increasing access to learning for people of all ages and possibly all

economic levels is unlimited" (p. 21). Online learning, as it were, was introduced in 1989 with programs at the Open University in the UK, The University of Phoenix Online as well as at NJIT and in Canada (Harasim, 2000). As Helmi (2002) notes, "the growth of online education has been largely market- or organization-driven" (p. 245). As the proportion of learners who possess non-traditional characteristics continues to grow at a pace that exceeds the growth of traditional 18-22-year-old residential student, this new majority of learners who fit school into their life rather than life into their school, the demand for online education continues to grow. In fact, from 2012 – 2014, distance education enrollments rose 7% for those taking "at least one" and 9% for those learning "exclusively" at a distance while overall higher education enrollments fell by 2% (Poulin & Straut, 2016). According to the Fall 2014 IPEDS enrollment data, one in seven students took all their courses at a distance, while more than one in four students took at least one online course (Poulin & Straut, 2016).

These statistics are salient for this study because of the overlap in distance, or online education, and many competency-based education programs. The demographic data for all online students reported by Clinefelter & Aslanian (2016) shows that 73% of online students are 25 years or older while the demographic data reported by Kelchen (2016) shows that 90% of competency-based learners are 25 years or older. Both populations also show additional non-traditional learner characteristics such as attending part-time or bringing in credits from prior learning or college experiences (Clinefelter & Aslanian, 206; Kelchen, 2016).

Additionally, the technology plays a role, as Nodine (2016) points out,

> "the recent traction of CBE programs in higher education can be traced to a "perfect storm" of opportunities and pressures associated with: (a) the maturing of online technologies for education, particularly for individualized instruction and support; (b) increased institutional acceptance of outcomes-based approaches and online and hybrid instructional formats; (c) increased opportunities for and implications of direct assessment; and (d) pressure from policymakers and other stakeholders to offer lower cost models and provide opportunities for more working adults to achieve postsecondary credentials that are meaningful in the workplace" (p.8).

This source points to not only the technological advancements tying online and competency-based education but also the motivation of providing education for adult learners.

The bottom line of looking at these enrollment numbers for online learners is that while higher education overall has stagnant enrollment during the latest reporting period (2012-2014), the online education sector continues to grow. As Harasim (2000) notes, "Online learning is no longer peripheral or supplementary; it has become an integral part of mainstream society" (p.59). Additionally, Layne, Boston, and Ice (2013) point out "online learning has undoubtedly changed how, when, and where students learn" (pp.4).

Competency-based education came into the internet age early, with the creation of Western Governors University (WGU) and its foray into competency-based education. As a significant marker in competency-based education's history, I will next explore WGU's origins and how it relates to current implementations of the model.

Western Governors University

Competency-based education ran as an undercurrent for nearly 25 years after the founding of the 1970s adult serving institutions such as Excelsior College, SUNY Empire State and others (Nodine, 2016). Competency-based education could not be categorized as stagnant all those years, rather the modality was quietly chugging along doing the good work of educating those who did not fit the typical mold. Then in 1997 the field was brought back into the spotlight by a discussion spurred at the 1995 meeting of the Western Governors Association. The west was facing a boom in population with limited funds to help educate the dispersed workforce (Goodchild & Wrobel, 2014). Recognizing the potential of online education to help solve this problem, 19 western governors joined forces and founded Western Governors University (Cohen, 2014; Johnstone & Boyd, 2014; Western Governors University, n.d.). This fully-online, competency-based education university is the only institution to possess accreditation from the InterRegional Accrediting Committee (IRAC). The committee has since disbanded, and WGU's primary accreditation rests with the Northwest Commission on Colleges and Universities. However, during the time that WGU did possess IRAC accreditation, that possession of accreditation in every region allowed for the creation of a teacher education program with NCATE accreditation to license teachers in all fifty states (Cohen, 2014; Johnstone, 2006). In 2015 WGU celebrated 50,000 graduates in 15 years, nearly 20,000 of whom, or 40%, were first-generation college students (Western Governors University, 2015). In contrast, only

between 10.9% (low income) and 24.9% (not low income) of all first-generation college students complete a bachelor's degree within six years (Pell Institute, 2011).

Recognized as a best practice model WGU was granted the opportunity in 2013 to work with a set of eleven community colleges to help design, integrate into their systems, and launch competency-based education pilot programs by the Department of Labor and the Bill & Melinda Gates Foundation (Johnstone & Soares, 2014). While it is still uncertain whether these institutions will succeed with competency-based education, and potentially even expand out further, the field of competency-based education doesn't seem to be slowing down (Nodine & Johnstone, 2015).

WGU has had a big impact on the evolution of competency-based education, both as a leader within the higher education realm and in helping familiarize the public with this modality of higher education. More important than either of those is the positive attention it garnered from policymakers, as a solution to a problem recognized by the governors in the West. This sentiment is reflected by policymakers adding direct assessment, the next modality I'll delve into, to the in-progress reauthorization of the Higher Education Act of 1965, to benefit WGU.

Direct Assessment Programs

In 2009 President Obama placed forward the challenge that "by 2020, America will once again have the highest proportion of college graduates in the world" (Obama, 2009). Similar goals were set by the major educational foundations such as the Lumina Foundation and the Bill & Melinda Gates Foundation (Lumina, 2009). It has been

recognized that continuing as higher education has been – with primary focus on traditional aged students coming right out of high school – will not allow the field to reach these ambitious goals. Higher education must engage the adult learner population to come close to these goals (Shapiro, Dundar, Ziskin, Yuan, & Harrell, 2013; Soares, 2013; U.S. Department of Education, 2011). Research by the Lumina Foundation (2015) found that there has been progress toward the postsecondary credential goals, however, it is not rapid enough progress to achieve their goal of 60% with a postsecondary credential by 2025.

In order to meet these goals, higher education must break its mold. Enter Paul LeBlanc and Southern New Hampshire University who, in late 2011 sketched out an idea for a new type of competency-based program - one not tied back to the credit hour in any way, otherwise known as direct assessment competency-based education (Book, 2014; Brower, 2014; Ebersole & Stewart, 2011; Fain, 2015; Hatcher Group, 2014; Johnstone & Soares, 2014; Kelchen, 2015; Kelchen, 2016; Laitinen, 2012; Snowden, 2014; U.S. Dept. of Education, 2014). Direct assessment measures a learners' mastery of competencies directly, often by authentic assessment, without relying on the proxy of time spent on learning activities.

LeBlanc set a team of four online learning experts up in an innovation lab and let them hammer out the details of making it work for students and keeping the cost to $2500/year. From this was born College for America (CfA) – the first program to use direct assessment of competencies using authentic assessments to award degrees

without the credit hour (Clerkin & Simon, 2014). As mentioned previously, authentic assessments ask, "students to use the same competencies, or combinations of knowledge, skills, and attitudes, that they need to apply in the criterion situation in professional life" (Gulikers et al., 2004, p. 69). In the spring of 2013, CfA was approved as the first direct assessment program to be eligible for Title IV federal financial-aid disbursement for its associate degree program (Clerkin & Simon, 2014; Fain, 2013a; Fain, 2013b).

While LeBlanc's development method and launch strategy were novel, the idea of direct assessment competency-based education had been previously experimented with, but no other institution brought it to sustainability. The primary difference between direct assessment competency-based education and traditional learning is that the focus is on the demonstration of learning rather than the amount of time it takes to accrue that knowledge (C-BEN, 2016). In 2006, the U.S. Department of Education included in their revision of the Higher Education Act of 1965 a provision for allowing institutions to utilize direct assessment – defined as:

> …an instructional program that, in lieu of credit hours or clock hours as a measure of student learning, utilizes direct assessment of student learning, or recognizes the direct assessment of student learning by others. The assessment must be consistent with the accreditation of the institution or program utilizing the results of the assessment (e-CFR, §668.10 (a)(1)).

This definition and the rules which accompany it in the reauthorization of the Higher Education Act of 1965, which was enacted in 2008, were added to the in-progress reauthorization under the impetus of allowing Western Governors University

to continue on the direct assessment path it had started down during the 1999 demonstration project established by the U.S. Department of Education (Fain, 2013a; Lacey & Murray, 2015; Lederman, 2012; U.S. Department of Education, 1999). WGU did not choose to take advantage of this provision (Lederman, 2012) nor did any other institution until Southern New Hampshire University's College for America did in 2013 (Book, 2014; Fain, 2013a; Fain, 2013b; Fain, 2014a; Fain, 2014b).

Just prior to approving SNHU's College for America for Title IV funding, in March of 2013 the U.S. Department of Education released a 'Dear Colleague' letter providing guidance to institutions that wished to have their direct assessment competency-based programs considered for Title IV funding. Additionally, in 2013 the Department approved Capella University's FlexPath to offer direct assessment bachelors and master's degrees (Book, 2014; Fain, 2013a; Fain, 2013b; Fain, 2014a; Fain, 2014b). In 2014 the University of Wisconsin would also receive approval for its Flex Option program which is a partnership between the University of Wisconsin system office, the UW Extension, and its campuses (Brower, 2014).

Continuing with the theme of expanding access, the U.S. Department of Education issued a July 2014 call for experimental sites to become authorized to use federal financial aid for their competency-based education and limited direct assessment programs. Those approved were announced in January 2015 a total of 34 institutions were approved for limited direct assessment experiments and 45 institutions in the competency-based education experiments. The CBE experiments

provide flexibility in how institutions provide Federal student aid to students enrolled in self-paced competency-based education programs. Whereas the limited direct assessment experiments provide flexibility for an institution to provide a mix of direct assessment coursework and credit or clock hour coursework in the same program (Fain, 2015; U.S. Department of Education, 2014).

While they were approved in early 2015, as of August 2015 these new programs had not begun operating, stalled by a lack of guidance on the regulations from the Department of Education (Laitinen, 2015). In a blog promoting the release of the Department's September 2015 guidance, Ted Mitchell promised the Department will be not only expanding the CBE experimental program but "collecting significant data from the participating institutions to enable a rigorous evaluation of the impact of CBE programs on issues of completion, affordability, and transparency of degrees" (Mitchell, 2015). In September 2016, Amy Laitinen, director for higher education in the Higher Education Policy Unit at the New America Foundation, stated that to date, there is "maybe one" of these experimental sites running, nearly on the one-year anniversary of the guidance (A. Laitinen, September 26, 2016, personal communication).

What this all means for potential competency-based education learners is that regulation is stalling higher education reform that may aid their ability to garner federal financial aid for their studies. Silva, White, and Toch (2015) in their report regarding the viability of the Carnegie Unit may have captured the problem with higher education reform most eloquently:

> American education has a long history of promising reform ideas that have failed to achieve their intended outcomes. It is one thing to have good ideas for change; it is another to execute effectively and efficiently in our large, complex educational systems (p.6).

Competency-based education has a long and varied history. Rising out of outcomes-based learning methodologies such as apprenticeships and training programs and fitting into the various regulatory environments by conforming to the credit-hour where necessary and breaking free of it when possible. At the same time, competency-based education has been transformed over the years by the advancement of technology, moving from the physical classroom into advanced technologically-enhanced learning modalities. In this review of the relevant literature, I have investigated what competency-based education is, its historical origins, and its modern practice. Evidenced in this review is a call for a credentialed populace in the United States (Obama, 2009; Lumina Foundation, 2009; Lumina Foundation, 2015) and idea that to reach these goals, we will need to engage the adult learner population, not solely those presently graduating high school (Shapiro, D., Dundar, A., Ziskin, M., Yuan, X., & Harrell, A., 2013; Soares, 2013; U.S. Department of Education, 2011). Competency-based education opens the opportunity for new pathways to earning credentials for learners. In the next section, I will investigate the literature on learners who choose competency-based education.

Competency-based Education Learners

Knowledge about population composition, and even the magnitude of the population, of competency-based education learners is a recognized deficiency in the extant literature (Kelchen, 2016; Kelly & Columbus, 2016; Nodine, 2016). In their 2015 study, which delves into the last 20 years of literature about competency-based education, Kelly and Columbus found only thirteen academic articles, or 3.4% of the 380 articles coded, analyzing the characteristics of competency-based education enrollees.

I was given permission to view the coding of these studies. While they fit within the definitions of Kelly and Columbus' study, they do not reflect the parameters of my study. Of the eleven articles I was able to review, four were focused on prior learning assessment (PLA), which Kelly and Columbus (2016) included in their search but are not appropriate for my study. Seven of eleven of the articles considered to display CBE student characteristics by Kelly and Columbus originated outside of the United States, which also disqualifies them for consideration in my study with some being doubly disqualified as PLA and foreign. The balance of articles held some relevance for my study such as Ben-Yoseph, Ryan, & Benjamin (1999) which showcased the students in its population as adult learners, who demonstrate tendencies such as part-time and stop-out enrollment, which affect their retention to graduation.

Perhaps the preeminent modern researcher in this area is Robert Kelchen, and even he acknowledges the measures we currently have for determining the

competency-based education learner population and characteristics are flawed at best (Kelchen, 2015; Kelchen, 2016). As he says in his 2015 look at the landscape of CBE:

> Students interested in enrolling in CBE programs are typically typecast as being older, place-bound, and vocationally minded, with significant prior work experience and some prior college experience. But it is difficult to identify the characteristics of students enrolled in many CBE programs because existing data sets aggregate these students with the rest of the student body at the college (p. 6).

In his 2016 manuscript, Kelchen focuses the analysis on nine colleges "where many students are enrolled in some type of CBE program or typically enroll with significant amounts of prior credit" (p. 51). Kelchen counted 146,924 undergraduate students as enrolled in his competency-based population from the Fall 2012 Integrated Postsecondary Education Data System (IPEDS) enrollment data. Demographically, 90% of the enrolled students were 25 years old or older, the majority were white, female, and on average 43% received federal financial aid (Kelchen, 2016). While Kelchen's research dilutes the population with students who may not be enrolled in a competency-based program at all, it is the best definition of the modern population available to date.

I also performed prior research focused on those learners who enrolled in federal financial aid eligible direct assessment competency-based education programs. I found these learners to be price-conscious, working adults juggling responsibilities at work, at home and in the community with their school work (Morrison, 2016). The emergence of adult and non-traditional learners as primary participants in competency-

based education warrants a brief investigation of the literature supporting the definition of adult learner which I provide in the next section.

Adult and Non-Traditional Learners

Adult learners, those who are 25 years of age or older, are a growing population in higher education (Bergman, 2012; Carnevale, Smith, Melton, & Price, 2015; Kasworm, 2003; Klein-Collins, 2012; Merriam et al., 2007; Shapiro, et al., 2014; Stevens, 2014). As Kasworm (2003) shares, "over six million adult undergraduate and graduate students were enrolled in 2000, more than the *total* collegiate enrollment in 1968" (p. 4). While age is the primary factor in determining if a learner fits into the category of 'adult,' perhaps more useful in modern research is the non-traditional learner. Research commissioned by the National Center for Education Statistics (NCES) and produced by Radford, Caminole, and Skomsvold (NCES, 2015) shows that 74% of all undergraduates in the 2011-12 cohort have at least one non-traditional characteristic. As defined by NCES (1996, p. 4-7) these non-traditional characteristics include:

- Delayed enrollment in postsecondary education
- Part-time attendance
- Financially independent of parents
- Work full-time
- Have dependents other than a spouse
- Are a single parent

- Have a non-standard high school diploma, such as a GED

With a healthy majority, non-traditional learners should be the focus of policy and practice at institutions across the nation, however prior research shows they are not. As early as 1978 Patricia K. Cross alerted the higher education community of the need to pay attention to the rising number of adults in higher education, how they learn and incorporate those principles into practice. Lest higher education will become, in Cross' (1978) words, "a joyless learning society, with people grimly fulfilling requirements and seeking legitimacy for every variety of learning." In 2001, Sissel, Hansman, and Kasworm noted that the "voice of the adult students are not integrated into the ethos of campus" (p.20) which renders them mute in various forms of institutional communication from marketing and admissions to campus services. In 2014, Stevens noted, "It appears that institutions of higher education are not adequately addressing the needs of these nontraditional students" (p.65). There is evidence that this is improving, with a 2015 Ruffalo Noel Levitz survey revealing that across institutional sectors, institutions are intentionally recruiting of adult learners.

To engage new learners in the pursuit of higher education credentials, we need to understand how and which type of learners choose competency-based education programs. This understanding will allow higher education, as an industry, to speak the language that opens access to higher education. Thinking back to the opening example of this paper, without lowering the barrier to higher education, Susan would never have earned a credential and be pursuing additional higher education. Competency-based

education is a pathway to access to higher learning. In the next section, I will explore the concept of access -- how it weaves into the fabric of higher education and has supported the growth of competency-based education.

Access to Higher Education

To begin simply, access is *"the ability, right, or permission to approach, enter, speak with or use; admittance" (*dictionary.com (n.d.)). In higher education, access has been embedded in the mission of many institutions since the Morrill Act of 1862, a key step in opening higher education access for all Americans. The Morrill Act called for the creation of land-grant universities by offering states tracts of Western land which they could sell and use the proceeds to fund "advanced instructional programs" (Thelin, 2011).

This complex relationship between the federal and state governments, has led to oversimplification in the mainstream understanding of the law. Leading to the translation that the federal government bestowed literal tracts of land for the building of the higher education institutions. While some states already had universities, this bolstered the offerings of accessible higher education with a broad, utilitarian curriculum focused on agriculture, mechanics, mining and military instruction (Key, 1996; Thelin, 2011).

Land grant institutions continue to play a significant role in higher education, though many have expanded their focus to include engineering, the sciences, education, business, and the humanities in addition to the traditional curriculum. Land grant

institutions contributed to the higher education landscape not only by increasing access but by bringing a greater number of institutions into the idea of educating for the practical in addition to the theoretical (Key, 1996). Land grants also helped move away from straight recitation of the classics and into the education of those who need to be able to apply theory to build our world - from bridges to medicine to secondary education curriculum (Key, 1996). This practical application of theory bodes well for implementing competency-based education with its demonstrations of mastery through authentic assessment. Land grant institutions opened access to many different types of learners and normalized the idea that the practical held value as a higher education pursuit, which is key to competency-based education being an access pathway.

Continuing the discussion of access to higher education, no study would be complete without a look at what is commonly called the G.I. Bill. In 1944, Congress moved forward with the Servicemembers Readjustment Act, or G.I. Bill, which included provisions for education benefits for veterans. Congress and the President enacted these benefits to help maintain social order as vets returned from war; they did not want the protests that came after World War I (Thelin, 2011). For many colleges this legislation resulted in doubling their enrollment. It also meant a new variety of student was coming to campus: pragmatic, older, first-generation students, with much life experience, often with spouses and children. Their priorities were different than those of traditional aged college students and while they did partake in some extracurricular activities, overall their goal was employability (Thelin, 2011).

The implementation of the G.I. Bill changed the face of American higher education dramatically and continues to this day. College is no longer an elite institution only for the children of the wealthiest Americans. A college degree is now attainable for a greater diversity of learner.

The next pivotal event in access to American higher education was the Higher Education Act of 1965 and its subsequent reauthorizations. November 8, 1965 brought forth the passage of this bill, aimed at supporting the educational resources of struggling colleges, primarily historically black colleges, and providing financial assistance for students to attend higher education ("Higher Education Act of 1965," 2009; "Higher Education Act of 1965," 2015).

Periodically the Higher Education Act of 1965 is "reauthorized"—a process through which Congress revisits existing programs to see how they can be made more relevant for their time frame through a series of hearings ("Higher Education Act of 1965," 2009; McCants, 2003). The Act was reauthorized in 1968, 1972, 1976, 1980, 1986, 1992, 1998, and 2008 ("Higher Education Act of 1965," 2015; McCants, 2003). During the summer of 2015, the Senate HELP (Health, Education, Labor, & Pensions) Committee held six hearings in consideration of a new reauthorization of the HEA. Though the times are different, some of the themes from the original act remain relevant, such as - access and affordability. Other topics discussed during the hearings are reminiscent of the 2008 reauthorization, including calls for greater accountability (Morrison, 2015a).

The Higher Education Act and its subsequent reauthorizations have opened the door to postsecondary education for many, especially low-income students. Without federal grant and loan programs, higher education would largely be an elitist system with only those who are wealthy enough to pay outright or those who are extremely academically or athletically talented able to access postsecondary education. We would also not have the diversity of institutional type available in the modern postsecondary education landscape. Provisions in the Higher Education Act also make it possible for institutions to implement competency-based education.

This study will next explore the college choice process, limiting the exploration to the college choice process for adult and non-traditional learners.

The College Choice Process

Put most simply, college choice is the process a potential learner undertakes to evaluate and commit to a postsecondary option. Choice paired with access, or the opportunity to attend college, is important for competency-based education as it supplies the learners who participate in the programs.

College choice is a transitional process where potential students define their academic and occupational aspirations and abilities, gather information about postsecondary options, and come to a decision they perceive will help them make those aspirations a reality (Bergerson 2009; Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987; Jackson, 1987; Perna, 2006; Southerland, 2006). As Litten (1982) points out “the college selection process is a complex series of activities” (p.400). This process happens

in different ways and times for different types of learners. The models may not always fit and may not capture the complex interplay, especially for diverse students who do not fit into the first-time, full-time freshman profile (Hendrickson, 2002; Pitre, Johnson, & Pitre, 2006; Southerland, 2006).

Access, however, often assumed by college choice theories, (Bergerson, 2009) is not a given. Access refers to institutional practices and policies to provide equitable opportunity for students to pursue education ("Access," 2014). In 2006, the Spellings Commission found that "access is unduly limited by the complex interplay of inadequate preparation, lack of information about college opportunities, and persistent financial barriers" (p. 1, U.S. Department of Education, 2006). Access is affected by many demographic characteristics including socioeconomic status, high school preparation, parental college experiences, and access to adequate information (NPEC, 2007; Perna, 2006; Tierney & Venegas, 2009). Access can also be affected by geographic location, demonstrated by Turley (2009) who found a small but significant increase in the odds of applying to college based on each additional institution within commuting distance.

Traditional college students are generalized as enrolling directly out of high-school and attending full-time, while not working or working only part-time (Bergerson, 2009; Brock, 2010; Choy, 2002; NPEC, 2007; NCES, 2015; Southerland, 2006). According to NCES (2015) these students make up less than 30% of all today's college students. The greater population of students today are what are referred to as 'nontraditional' or 'adult' learners, who encompass 74% of the college student population (NCES, 2015).

These students, sometimes called the new majority, (Bell, 2012) embody characteristics such as delayed enrollment after high school graduation, financial independence according to financial aid rules, having one or more dependents, being a single caregiver for children or aging parents, part-time attendance, and being employed full-time (Bell, 2012; Bergerson, 2009; Bers & Smith, 1987; Brock, 2010; CLASP, 2011; Choy, 2002; NPEC, 2007; NCES, 2015; Southerland, 2006).

One of the most cited college choice models of the last thirty years is Hossler and Gallagher's (1987) three-phase model of student college choice encompassing predisposition, search, and choice. This model is so popular in fact, that Bergerson (2009) spends nearly a whole chapter discussing its composition, its applications in recent research and the critiques of the model. In this model of college choice, students starting as young as middle school enter the predisposition phase, where they develop academic and occupational aspirations. Predisposition is influenced by factors such as a student's socioeconomic status; their academic ability; the school they attend; the peers, teachers, and counselors they interact with; and the availability of college information for the students and their parents (Bergerson 2009; Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987).

Hossler and Gallagher (1987) quote Jackson (1978) as having identified types of students who emerge from predisposition: the "Whiches," "Whethers," and the "Nots" (p. 571). Nots are those who never really consider going to college, Whethers apply to 1-2 local colleges but may not attend, and Whiches never considered not going to

college. In this breakdown of types, Jackson (1978) notes that the Whiches focus on the prestige and peer choices whereas the Whethers fit more into the economic crunch, where the decision is weighed on the perceived value/perceived cost ratio. These predisposition types were not directly carried forward into the later work, such as Cabrera and La Nasa (2000) nor were other 'types' of students specified.

The second stage of the process is the search, in which students begin to accumulate information and incorporate it into their forming thoughts of where and why to matriculate in college (Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987). As Bergerson (2009) points out, "this step involves learning more about themselves and the institutions in which they are interested" (p.24). This self-learning may include taking college entrance exams (ACT, SAT) as well as determining the type of institution which fits them, through increased interactions with college representatives (Bergerson, 2009). As Hossler and Gallagher (1987) say, "the search phase is not a static stage which is conducted in the same manner by all students" (p.214).

The third and final phase of this model is where students' complete application(s) and collect the final inputs before making their enrollment choice. Again, factors such as parental input, peer choices, academic standing and aspirations, and the ever-important financial considerations weigh on the final decisions of matriculates (Bergerson 2009; Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987). What this model of college choice means for institutions, is that engaging students early in their education journey is key. While search, which is developmentally tied to grades 10 - 12

(Cabrera & La Nasa, 2000), is the most active phase of the process, providing information, especially general financial information early may affect parent's savings for college which may affect the number of colleges students apply to and the likelihood they will matriculate (Hossler & Vesper, 1993; Jackson, 1978).

While this theory has held up through time for the traditional learner, the population of competency-based education learners does not fit this demographic profile. Hossler and Gallagher's phases (1987), which begin as early as middle school, do not fit the profile of adult learners.

A contrasting theory of college choice for traditional aged students is the cultural framework model developed by Tierney and Venegas (2009). This framework moves away from a rational linear theory that depends on students making choices in a logical manner based on subjective assumptions and looks at how students make decisions based on inputs from multiple environments concurrently (Bergerson, 2009; Tierney & Venegas, 2009). These environments include schools and school staff, peer groups, families, and other social influences. The framework assumes that students have agency in their decision to attend postsecondary education or not, and where to do so.

A cultural framework helps researchers understand the lives of families, students, and their inter-relationships with the college choice process. Understanding the differing experiences of students, for instance the difference between wealthy students who never really consider whether or not to go to college, just where to go and the first-generation, low-income student who must make a more active choice in

whether to attend or not, can help institutions increase access (Tierney & Venegas, 2009).

Research from NCES (2015) shows that 'nontraditional' students are the majority of all college students today at 74%. However, our long held cultural construction of college students does not often include them in the picture. Popular culture, through the silver screen, glossy magazines, and TV shows, consistently portray the college choice process as the high school senior checking the mailbox daily for the 'fat envelope' indicating acceptance to their first-choice college (Morrison, 2016). The picture can be much different for the majority of today's college students – nontraditional learners who have been known to make concurrent decisions of if, when, and where to attend or return to college (Bers & Smith, 1987; Morrison, 2016; NCES, 2015; NPEC, 2007). Career needs (Kortesoja, 2009; Laanan, 2003; Somers, et.al, 2006; Wilsey, 2013) or personal aspirations often spur the need for adult learners to pursue higher education (Laanan, 2003; Somers, et.al, 2006). The key factors for adult learners are location (Broekemier, 2002; Hillman & Weichman, 2016; NPEC, 2007; Roszkowski & Reilly, 2005; Somers, et.al, 2006) and convenience (Bers & Smith, 1987; Broekemier, 2002; NPEC, 2007; Peek & Goldstein, 1991). As is noted by Bergerson (2009), the body of research on adult learners is scant and does not include their college choice process. The research reflects their experiences once enrolled, and as such Bergerson (2009) did not include them in her monograph. This study highlights one college choice model specifically developed

about adult learners (Southerland, 2006), and one which was written for disadvantaged students but makes a relevant proxy to adult learners (Perna, 2006).

Three decision-points drive Southerland's 2006 model for college choice and persistence which can be broken down into whether their life situation supports attendance, followed by when and where to attend, and finally adult learners continually reevaluate their enrollment and persistence to a credential (Morrison, 2016; Southerland, 2006). In contrast to traditional models such as Hossler & Gallagher, Southerland's model is pragmatic in considering options for learning, career advancement, availability of data, and location (Broekemier, 2002; Morrison, 2016; NPEC, 2007; Roszkowski & Reilly, 2005; Somers, et.al, 2006; Southerland, 2006).

The work of Peek and Goldstein (1991) features the importance of employee benefit programs as a driver and enabling circumstance for adult learner choice in higher education (Morrison, 2016).

An additional conceptual model that helps explain adult learners' college choice, while written for disadvantaged populations, is Perna's 2006 model which hosts elements from human capital investment and socio-cultural models such as status attainment models. In Perna's (2006) nested model, layers build upon and influence each other. Habitus, encompassing not only demographic characteristics but the social and cultural capital a student brings to the college choice process forms the first layer. This layer applies to non-traditional, adult learners as well as their traditional counterparts, and these factors are not age-dependent.

The second layer focused on school and community context is a bit different for the traditional student who, as Perna (2006) notes, are influenced by teachers, counselors, and peers in their high school, than adult learners. However, if we consider the work of Peek and Goldstein (1991) who found in their research that adult learners tended to turn to non-college professionals who they trusted to help them choose their higher education option. These professionals ranged from parole officers to welfare agents and even their children's high school guidance counselors. Some adult learners turn to family, friends, and significant others as sources of information in making a college choice (Peek & Goldstein, 1991). These trusted relationships fit in the "school and community context" (Perna, 2006, p. 117) layer, bringing its relevance to adult learners, as some of those trusted non-college professionals fit within the school context (children's guidance counselors) and others into the community context (parole officers, welfare agents, friends, and family).

The third layer looks at higher education context. NPEC research found that adults are more autonomous in their college choice process (2007), as was shown in Southerland's (2006) research, availability of data on the institution is important, which rests in this layer.

The final layer looks at the broader socio-political climate and how it affects students' college choice process. Things such as the unemployment rate, public policy and demographic shifts influence this layer, as well as influence adult learners, and supply context to learners' decisions (Perna, 2006).

Based on these two concepts, practitioners looking to assist adult learners in making their college choice would be advised to appeal to their pocketbooks and their career aspirations through marketing materials and interactions with potential students. Creating advocates out of local members of the adult learners' communities and having graduates model their success for potential students will encourage them in the process of choosing a college. From Southerland, (2006) perhaps the most relevant piece for student affairs practitioners and faculty is the fact that adult students are continuously reevaluating their enrollment. If institutions are not providing them what they perceive they need, they will, as the idiom goes, 'vote with their feet'.

To understand the context of their educational opportunities, adults are presumed to undertake a process to choose the way they will pursue higher education. Competency-based education presents one method for adult learners to gain access to higher education. This study investigates the college choice process of competency-based education enrollees to inform institutions in their recruitment efforts and learners in how to choose the correct program for their needs.

Summary

Competency-based education has evolved from its roots in outcomes-based learning approaches to modern, technologically-enhanced learning. Competency-based education provides a pathway through higher education for learners who cannot attend traditional, face-to-face higher education. Through this literature review, we have seen

that learners make choices in different manners – with non-traditional learners having a greater focus on the end outcome of higher education rather than the process to gain the credential. To provide access to this modality of learning, we must first understand the process through which these learners make decisions so we can communicate with them effectively and at the right time.

CHAPTER THREE – METHODOLOGY

Introduction

To increase access to postsecondary education, institutions must first understand why and how leaners choose their learning opportunities. The extant literature on the college choices of adult learners tends to be focused on community college enrollees (Broekemier, 2002; Laanan, 2003; Peek & Goldstein, 1991; Somers, et.al., 2006). However, there is a recognized paucity when it comes to exploring the college choice experiences of non-traditional learners overall (Bergerson, 2009; Kortesoja, 2009; Lansing, 2017; Morrison, 2016; NPEC, 2007; Peek & Goldstein, 1991; Perna, 2006; Roszkowski & Reilly, 2005). This applies both for first-time learners and those returning to higher education after some period away. Competency-based education learners have been characterized as primarily adult learners (Kelchen, 2016; Morrison, 2016).

Additionally, as highlighted by Kelly & Columbus (2016) there is little research on who competency-based education learners are in the last 20 years. Their research turned up just thirteen academic articles which look at characteristics of competency-based education learners (Kelly & Columbus, 2016). However, my previous research, published after Kelly & Columbus (2016), showed direct assessment competency-based education learners are “professionals working in their field of study. Parents juggling families, work, community, and school. Devoting concentrated time to their studies.

Price conscious & transfer credit savvy" (Morrison, 2016, p. 73). It is important to note that study was a small (*N*=5), qualitative study however it was published in the *Journal of Competency-based Education*. It did reinforce the need for further study both of competency-based education learners' characteristics and college choice process (Morrison, 2016).

The societal factors which are driving the increased interest in higher education include the perception of a bachelor's degree as the modern-day ticket to the middle class (Carnevale, Garcia, & Gulish, 2017; Selingo, 2013). With 20.6% of Americans over age 25 possessing some college but no degree (U.S. Census Bureau, 2016), the opportunity exists for increased enrollments in higher education. Carnevale, Jayasundera, and Cheah (2012) outline the increases in enrollment higher education sees when the economy declines. This was made evident by the 12% enrollment increase over projections in 2010 (Carnevale et al., 2012). As these researchers conclude, "In jobs at every skill level and in many different occupations, the better-educated applicant has the edge" (Carnevale et al., 2012, p. 35).

In the United States, we are experiencing what has been called credential creep, credential inflation, and upcredentialing (Burning Glass Technologies, 2014). In this phenomenon positions that did not previously require a college education now have that as a requirement. Burning Glass Technologies (2014) research "suggests that employers may be relying on a B.A. as a broad recruitment filter that may or may not correspond to specific capabilities needed to do the job" (p.2). Additionally, Carnevale

and Rose (2011) call this the “sheepskin effect” (p.30) but express that it is a logical recruitment technique to maximize the chance of hiring a qualified candidate. Regardless of what I, or any industry analyst may think of this phenomenon; the bachelor’s filter is creating demand for higher education. This demand can be met, at least in part by competency-based education, if we as an industry can articulate its value to students and employers (Kamenetz, 2014).

Research Questions

The purpose of this secondary data analysis is to investigate the characteristics of competency-based education program enrollees, their college choice process, satisfaction with their enrollment choice, and whether enrollment motivators predict satisfaction with enrollment choice. This study investigates the following questions:

1. What are the characteristics of competency-based education learners?
2. Do characteristics of competency-based education learners predict enrollment motivators?
3. Do characteristics of competency-based education learners predict satisfaction with their decision to enroll?
4. Do the enrollment motivators predict competency-based education learners’ satisfaction with their decision to enroll?
5. What is the college choice process for competency-based education learners?

Research Design and Rationale

This study employs a non-experimental, quantitative research design of secondary data to investigate the learners' characteristics, college choice process, enrollment motivations, and satisfaction with choice for learners enrolled in a competency-based education program. I utilized data I collected in 2016 for related prior research regarding competency-based education enrollment motivators (Morrison, 2017) in fulfillment of a grant from the University of Wisconsin – Milwaukee National Research Center for Distance Education and Technological Advancement (DETA).

The dataset includes responses from competency-based education enrollees from four institutions (three public; one private/non-profit) and had a survey response rate of 8.19%, which, while low, is characteristic of a web-based survey. Wengrzik, Bosnjak, and Manfreda (2016) found in a meta-analysis of 108 experimental studies, a mean response rate of 13%, including some studies which were incentivized. The final sample and sampling procedures is discussed in further detail below.

These data contain untapped resources on competency-based education learner characteristics as well as responses which may reveal the college choice process. Secondary datasets have unique advantages over primary data collection, such as time and cost savings (Anderson, Prause, & Silver, 2011). Research on secondary data also "provides opportunities for the discovery of relationships not considered in the primary research" (Smith, 2008, p. 328). Additionally, secondary data analysis has been noted

as being under-used in education (Smith, 2011). I have also chosen this dataset because I have sole access to it. I expect this study to add to the literature on competency-based education, the learners that choose this modality, and the college choice process.

Research Context

There is a renewed interest in competency-based education and how it can be utilized by institutions as a tool to move a greater number of students toward the completion of a degree (Fain, 2015; Lumina Foundation, 2009, 2015; Morrison, 2017; U.S. Dept. of Education, 2014). With this renewed interest, has come a boom in the number of institutions offering competency-based education – by some accounts over 500 institutions are exploring offering CBE – from every sector of higher education (AACC, 2016; Fain, 2016; Fain, 2015; Fleming, 2015; Kelchen, 2016; Mitchell, 2015; Morrison, 2017; Nodine, 2016; Public Agenda, 2015).

The distal factors which relate to an increased interest in competency-based education are primarily economic, for learners and institutions. Although the economy is improving, research from Burning Glass Technologies (2014), a job market analytics company, shows that there has been a rise in the number of job postings requiring a college degree that previously did not. This is leading to a credential gap, which, in middle skill jobs is upward of 25%, for roles like executive assistant and other office administration type positions (Burning Glass, 2014). The greater demand for postsecondary credentials can increase enrollment at colleges and universities.

Competency-based education, especially in the direct assessment modality, is potentially a faster pathway to degree completion (Camacho and Legare, 2016; Porter and Reilly, 2014; Wang, 2015). The potential of graduating more learners more quickly is a lure for institutions, as it could lead to potential cost savings (Porter and Reilly, 2014).

An additional distal factor contributing to the growth of competency-based education opportunities is pressure from policymakers to contain higher education costs while maintaining quality (Johnstone and Soares, 2014; Laine, Cohen, Nielson, and Palmer, 2015). As Arne Duncan, former Secretary of Education said in a speech during the 2011 Annual Federal Student Aid Conference:

> States are also beginning to take on the challenge of accelerating attainment and containing costs as a statewide mission. Nationwide, 26 states have set goals for the educational attainment of the adult population. And a number of state strategic plans include language about containing college costs (para. 77).

Competency-based education has been noted as an option for institutions to help contain cost (Daugherty, Davis, and Miller, 2015; Desrochers and Staisloff, 2016; Ordonez, 2014; Weise and Christensen, 2014; Weise, 2014).

As for learners, my previous research (Morrison, 2016) showed the ability to control their learning and adjust it to meet their other commitments was a key draw to competency-based education. Others have noted students desire the economic benefits of having a degree, the flexibility of competency-based education, and the

potential for cost savings through prior credit and accelerated learning (Camacho and Legare, 2016; Wang, 2015; Weise, 2015).

It is important for institutions to understand the learners who may enroll in the competency-based education programs they are designing. The analysis of these data could help inform how programs attract learners to competency-based education programs, thus aiding access to competency-based education programs for underserved learners, such as those with non-traditional characteristics.

Survey Methodology

The data being utilized in this study were first collected in fulfillment of grant requirements for The National Research Center for Distance Education and Technological Advancement (DETA). This survey implemented a tailored design. Dillman, Smyth, and Christian (2009) describe tailored design as "using multiple motivational features in compatible and mutually supportive ways to encourage high quantity and quality of response…" (p. 16). This methodology is supported by social exchange theory – the perception that the rewards one will receive outweigh the costs (Dillman et al., 2009). Social exchange is predicated on trust that the reward will be realized, whether for the participant or society (Dillman et al., 2009). This theory was supported by providing potential participants with information about the survey, asking for help, showing positive regard, saying thank you, and making the questionnaire interesting (Dillman et al., 2009). All the learners invited to participate attend college

online. Therefore, I reduced the cost of participation by making survey participation convenient, hosting the survey online, and limiting the length and time to respond (Dillman et al., 2009).

In alignment with this tailored design (Dillman et al., 2009) the survey was not incentivized aside from a plea to participants in the survey request letter to 'pay it forward' in the recognition they may also need survey respondents one day for their educational pursuits. All participants were presented with the purpose of the research, and their rights through informed consent procedures as a required step before entering the survey. Participants were provided with the appropriate contacts to withdraw should they, at any point, decide they would not like their data included in the study. Participants were also informed of the anonymity of their responses, including the de-identification of the institution in which they are enrolled.

Prior to distributing the survey, I obtained Institutional Review Board (IRB) approval from the four participating institutions. Institution and learner samples will be discussed in greater detail below. During the months of August, September, and October 2016 a web-based survey request was distributed to 5,142 undergraduate learners enrolled in a competency-based education program. The request was distributed via email (Appendix A) and as an announcement containing the same text in one institution's learning management system.

At regional state institution 1, the survey request was distributed July 18, 2016 and a reminder was sent August 6, 2016. At regional state institution 2, the survey

request was distributed July 28, 2016 and a reminder sent on August 8, 2016. At the public community college, the survey request was first sent as an announcement via the learning management system on August 22, 2016. A reminder email was sent to this group of learners on September 6, 2016. At the private/nonprofit institution the survey request was distributed via email on October 5, 2016, no reminders were sent. The spread in the timeframe the survey requests were distributed was due to the varying time it took to get IRB approval. The survey (Appendix B) was housed in the web-based platform Survey Monkey and was estimated to take learners approximately 30 minutes to complete.

Population & Sample

For institutional sample selection in the original research project, I implemented a cross-institutional sampling methodology and aimed to engage institutions offering online, self-paced, mastery-based, competency-based education with faculty developed curriculum. These criteria were set during the grant initiation call with the grantor as the common criteria the UW-DETA was using for the competency-based education programs the Center was investigating (T. Joosten, personal communication, April 12, 2016).

Institutions were identified utilizing criterion and snowball sampling. Criterion sampling involves creating criteria and then identifying participants which fit that criteria (Mertens, 1998). I also employed snowball sampling by asking identified

institution representatives to suggest others they thought fit the criteria (Gilner, Morgan, & Leech, 2017; Mertens, 1998). Criterion and snowball sampling are both types of convenience sampling (Gilner et al., 2017; Mertens, 1998). This convenience sample was necessary to gather participants, which makes the results less generalizable. Convenience sampling is commonly used in educational research (Gilner et al., 2017; Mertens, 1998; Muijs, 2004). Time available for data collection and access to the participants were contributing factors to utilizing a convenience sample to gather institutional participants.

Participation invitations were sent to eighteen institutions across institutional types (public; private/non-profit; private/proprietary). In addition to the criteria set by the funder, criteria included membership in competency-based education focused industry organizations, and recipients of federal experimental site status for competency-based education projects. Considering these last two criteria only, there are approximately 75 institutions in the population. However, not all institutions who meet the last two criteria meet the funder's criteria. I determined the most relevant institutions through public search engines. Eighteen institutions were approached to participate in the study. My professional relationships with others working in competency-based education facilitated the snowball sampling. Not all institutions invited to participate were able to/qualified. Examples of disqualifying features include institutional policy; only offering their competency-based education programs at the graduate level; and lack of time and personnel to distribute the survey. None of the

institutions expressed a lack of interest in the research topic. The sample includes data from four of those eighteen institutions, three public, and one private/non-profit. This return represents a 22.2% response rate from institutional invitations.

Table 3.1: Institutional Demographics

Institution	Institution Region	Total Enrollment	Undergraduate Transfer-in Enrollment
Public 1	South	13,514 (8,318 undergraduate)	1,404
Public 2	West	30,361 (26,500 undergraduate)	3,041
Public 3	South	43,700 (all undergraduate)	1,923
Private/Non-profit	West	84,289 (63,961 undergraduate)	11,880

Data from NCES College Navigator (Fall 2016 Enrollment Data) https://nces.ed.gov/collegenavigator/

For learner participants two sampling methodologies were implemented. At all three public institutions, a census, or total population sample (Muijs, 2004) was taken with the survey distributed to all 1,142 enrolled competency-based education learners. This was possible due to the relatively low enrollments. However, at the private/non-profit, the undergraduate competency-based education enrollment at the time of the survey was 49,000 according to the institutional representative. This large of a census, even with only a 10% response rate, would have been overwhelming. Therefore, a sample of 4,000 learners which was demographically representative of the entire population was drawn utilizing their internal survey selection system.

5,142 survey requests were distributed to students actively enrolled in a competency-based education program. Survey requests were sent to 1,142 enrollees across three public institutions. Of that population 68 responses were gathered for a 5.95% response rate. For the private/non-profit institution, 4,000 survey requests were distributed, and 353 responses were returned, for a response rate of 8.82%.

Table 3.2: Total Competency-based Education (CBE) Enrollment, Population, Responses, and Response Rate by Institution

Institution	CBE Enrollment*	Survey Recipients	Total Responses	Response Rate
Regional State 1 (Public)	192	192	19	9.90%
Regional State 2 (Public)	900	900	38	4.22%
State Community College	50	50	11	22%
Private/Non-Profit	49,000	4,000	353	8.82%
Total	50,142	5,142	421	8.19%

*As of August, 2016 according to institutional officials.

Table 3.3: Population, Responses, and Response Rate by Institution Type

Institutional Type	Total Undergraduates Receiving the Survey	Total Responses	Response Rate
Public	1,142	68	5.95%
Private/Non-profit	4,000	353	8.82%
Total	5,142	421	8.19%

From the population of 5,142 the minimum sample size required to reach a confidence level of 95%, with a confidence interval of 5, was 358 responses, determined by utilizing the sample size calculator at http://www.surveysystem.com. Though the

survey garnered 421 responses, once the data were cleaned of responses with incomplete data on the variables of interest for the original research, 381 responses were analyzed. For the present study, 35 additional participant responses were eliminated due to missing data on variables of interest. A total of 346 responses were analyzed. This number does not meet the minimum required response (358) for the confidence level of 95% with the confidence interval of 5. However, when calculated from 346, the confidence interval is 5.09, which was determined to be an acceptable level as it would round down to 5. Additionally, according to Tabachnick and Fidell (2013), a substantial cases-to-IV ratio is important when utilizing multiple regression. The standard Tabachnick and Fidell (2013) promote is "$N \geq 50 + 8m$ (where m is the number of IVs) for testing multiple correlation and $N \geq 104 + m$ for testing individual predictors" (p.123). By this standard, the $N \geq 226$ for testing multiple correlation and $N \geq 126$ for testing individual predictors.

It is important to note that a few variables had missing responses, which were eligible for mean replacement. The largest of these (paid work hours) had 19 missing responses equating to 5.49% of the data. Following behind that are student satisfaction (4.91%), Age (4.34%), years of professional experience (3.47%), years from college start (1.45%), and years from high school (0.58%). According to Downey & King (1998), when utilizing item mean substitution method, the method provides a satisfactory representation of the original data when the missing data did not exceed 20% of the total (p. 189). Therefore prior to running the descriptive statistics, the mean replace

function was run in SPSS to create a compound variable which replaced missing data with the mean. Tables 3.4 and 3.5 show the learners' characteristics for public and private/non-profit institutions. Pearson Chi Square were utilized to see if dependency exists among the institutional types and key demographic data. The purpose of this investigation is to determine whether the sample can be combined into one for analysis to answer the research questions for this study.

Table 3.4: Learners' Characteristics by Institution Type

	N	Frequency - Public Institutions	Percent of Respondents – Public Institutions	Frequency - Private/Non-profit Institution	Percent of Respondents – Private/Non-profit Institution	Pearson Chi-Squared test sig.
Gender	346	61	17.6	285	82.4	.236
Female		39	16.0	204	84.0	
Male		22	21.4	81	78.6	
Ethnicity	346	61	17.6	285	82.4	.097
Hispanic		9	30.0	21	70.0	
Non-Hispanic		50	16.1	260	83.9	
Unknown		2	33.3	4	66.7	
Race	346	61	17.6	285	82.4	.457
American Indian/Alaska Native/Other		0	0.0	6	100.0	
Asian/Native Hawaiian/ Other Pacific Islander		1	12.5	7	87.5	

Table 3.4 Continued

Black/African American		3	15.0	17	85.0	
White		51	17.5	241	82.5	
Two or more races		6	30.0	14	70.0	
Institution Location Same as Residence	346	61	17.6	285	82.4	.000
Yes		41	37.6	68	62.4	
No		20	8.4	217	91.6	
First Generation Status	346	61	17.6	285	82.4	.823
Yes		29	17.2	140	82.8	
No		32	18.1	145	81.9	
Studied at a Prior College	346	61	17.6	285	82.4	.000
Yes		53	16.0	278	84.0	
No		8	53.3	7	46.7	
Prior Study in Discipline	346	61	17.6	285	82.4	.525
Yes		35	16.6	176	83.4	
No		26	19.3	109	80.7	

Table 3.4 Continued

Marital Status	346	61	17.6	285	82.4	.016
Single		20	28.2	51	71.8	
Married		37	16.2	192	83.8	
Separated/ Divorced/ Widowed		4	8.7	42	91.3	
Pell Grant Eligible	346	61	17.6	285	82.4	.412
Yes						
No		26	15.4	143	84.6	
Unknown		28	18.8	121	81.2	
		7	25.0	21	75.0	
Employment Status	346	61	17.6	285	82.4	.073
Unemployed, not looking for work		6	30.0	14	70.0	
Unemployed, looking for work		6	33.3	12	66.7	
Part time		7	28.0	18	72.0	
Full time		37	15.0	210	85.0	
Unknown		5	13.9	31	86.1	
Enrollment Status	346	61	17.6	285	82.4	.000
Part time		7	43.8	9	56.3	
Full time		45	15.0	255	85.0	
Overload		1	8.3	11	91.7	
Unknown		8	44.4	10	55.6	

Table 3.5: Learners' Characteristics by Institution Type Continued

	Overall N	Public Institutions	Private/Non-Profit Intuitions	*t*	*p*
Mean Age	346	38.55	38.83	-.193 (344)	.847
18–24 years	33	7	26	-.599 (344)	.550
25-29 years	37	9	28		
30-34 years	53	8	45		
35-39 years	64	10	54		
40-49 years	106	16	90		
50 Years or Older	53	11	42		
Mean Yrs From HS	346	20.93 (11.63)	20.68 (9.95)	.177 (344)	.860
0-10 Years	67	13	54	-.310 (344)	.757
11- 20 Years	112	21	91		
20.72 – 30 years	108	16	92		
31 – 40 years	52	9	43		
41-50 Years	7	2	5		
Mean Yrs from College Start	346	16.83 (10.74)	16.92 (9.89)	-.058 (344)	.954
0-10 Years	108	20	88	.110 (344)	.912
11- 20 Years	128	21	107		
21 – 30 years	74	13	61		
31 – 40 years	33	6	27		
41-49 Years	3	1	2		
Paid Work Hours	346	34.57 (15.91)	38.74 (17.83)	-1.687 (344)	.093
0-20 Hours	47	13	34	-1.892 (344)	.059

Table 3.5 Continued

21-30 Hours	12	3	9		
31-40 Hours	189	30	159		
41-50 Hours	74	12	62		
51-168 Hours	24	3	21		
Years Professional Experience	346	10.09 (10.02)	9.53 (9.12)	.421 (344)	.674
0-10 Years	224	38	186	.108 (344)	.914
11-20 Years	79	16	63		
21-30 Years	30	5	25		
31-43 Years	13	2	11		

As you can see from these analyses, there are only a few characteristics where the Chi Square statistic warrants introspection, as it points to a dependency of the demographic item on the institutional type. The first of these is *Institution Location Same as Residence* (*p=.000)*. Upon reflection on the institutions involved, the public institutions are regional institutions whose marketing does not likely reach as far as the private/non-profit institution's marketing. While the private/non-profit institution maintains campuses in several states, learners' primary affiliation is with the main campus, which has a nationwide marketing reach. In light of this, though significant, this item should not prevent combination of the entire dataset for investigation of the research questions.

The next characteristic which shows a significant Chi Square test is *Studied at a Prior College (p=.000).* Again, I turn to reflection on the institutions involved in the

study. The private/non-profit institution markets heavily to degree completion and accepts a wide array of transfer credits. While the public institutions also have transfer opportunities, when you look back at Table 3.1: Institutional Demographics, it is clear the private/non-profit has far more transfer-in students than the other institutions. Additionally, the public institutions offer additional modalities of learning (face-to-face, traditional online) in addition to competency-based education whereas the private/non-profit only offers competency-based education. Thus, the dependency of this variable on institutional status should not prevent combination of the dataset for investigation of the research questions.

Finally, *Enrollment Status (p=.000)* also shows a significant dependency on the institutional type. Upon reflection of institutional policies, this question was not a fair question to ask learners enrolled at the private/non-profit. Due to their subscription pricing model, all learners are considered full-time by the institution, however, students may judge their effort differently and therefore have reported it differently. Since there was no true choice for students enrolled in the private/non-profit, this question will be eliminated from further analyses.

Variables and Constructs

The survey had three sections with a total of thirty-four questions. Section one focused on learners' characteristics and contained twenty-five demographic questions. Section two explored enrollment motivation and contained one question, with 21 items

to respond to regarding their relevance for the learners' perception of how well each statement fit them. Section three contained six open-ended questions regarding the college choice process and one Likert scale to measure the learners' satisfaction with their decision to enroll in a competency-based education program. It was estimated to take learners approximately 30 minutes to complete the survey.

Instrumentation

Table 3.6 contains the table of specifications. It aligns the research questions with the survey questions which provide the data to answer the question.

Table 3.6: Table of Specifications

Research Questions	Survey Questions
1. What are the characteristics of competency-based education learners?	• Which restroom do you choose? • When is your birthday? • Do you identify as Hispanic? • With which race do you identify? • What state do you currently live in? • Do you currently live in the same state as your institution? • What was the highest school completed by your mother or parent 1? • What was the highest school completed by your mother or parent 2? • How many years has it been since you last attended high school? • Have you ever studied at a different university or college? • How many years has it been since you first attended college? • Had you ever taken college courses in this field before beginning your current program? • What is your marital status? • Are you eligible for or have you received a Pell grant? • What is your employment status? • How many hours do you work per week on average? • How many years have you worked in a job related to your current field of study?
2. Do characteristics of competency-based education learners predict enrollment motivators?	• Which restroom do you choose? • When is your birthday? • Do you identify as Hispanic? • With which race do you identify? • What state do you currently live in?

Table 3.6 Continued

- Do you currently live in the same state as your institution?
- What was the highest school completed by your mother or parent 1?
- What was the highest school completed by your mother or parent 2?
- How many years has it been since you last attended high school?
- Have you ever studied at a different university or college?
- How many years has it been since you first attended college?
- Had you ever taken college courses in this field before beginning your current program?
- What is your marital status?
- Are you eligible for or have you received a Pell grant?
- What is your employment status?
- How many hours do you work per week on average?
- How many years have you worked in a job related to your current field of study?
- I like to control the course pace and time of learning activities. (Learning Modality)
- I prefer traditional, face- to-face class meetings. (Learning Modality)
- I would prefer to work at home or remotely than have to drive to campus. (Learning Modality)
- I want to become a better person. (Learning Goals)
- I believe it will help me grow as a person. (Learning Goals)

Table 3.6 Continued

	• I hope to improve my problem-solving ability. (Learning Goals) • I want to learn as much as I can on this topic. (Learning Goals) • It is important for me to generally become more knowledgeable. (Learning Goals) • I want to try a new career. (New Career) • I hope to advance in my current career. (Professional Goals) • I believe it will make me more marketable to future employers. (Professional Goals) • I want to increase my job security. (Professional Goals) • I want to use the things I learn to help others. (Social Goals) • I believe it will help me make a difference in society. (Social Goals) • I want to provide a good example for my friends and family. (Social Goals) • I want to encourage my friends and family in their current studies. (Social Goals) • My friends and family expect me to continue my studies. (Social Goals)
3. Do characteristics of competency-based education learners predict satisfaction with their decision to enroll?	• How do you feel about your decision to enroll in your competency-based education program? • Which restroom do you choose? • When is your birthday? • Do you identify as Hispanic? • With which race do you identify?

Table 3.6 Continued

	• What state do you currently live in? • Do you currently live in the same state as your institution? • What was the highest school completed by your mother or parent 1? • What was the highest school completed by your mother or parent 2? • How many years has it been since you last attended high school? • Have you ever studied at a different university or college? • How many years has it been since you first attended college? • Had you ever taken college courses in this field before beginning your current program? • What is your marital status? • Are you eligible for or have you received a Pell grant? • What is your employment status? • How many hours do you work per week on average? • How many years have you worked in a job related to your current field of study?
4. Do the enrollment motivators predict competency-based education learners' satisfaction with their decision to enroll?	• I like to control the course pace and time of learning activities. (Learning Modality) • I prefer traditional, face- to-face class meetings. (Learning Modality) • I would prefer to work at home or remotely than have to drive to campus. (Learning Modality) • I want to become a better person. (Learning Goals)

Table 3.6 Continued

	• I believe it will help me grow as a person. (Learning Goals) • I hope to improve my problem-solving ability. (Learning Goals) • I want to learn as much as I can on this topic. (Learning Goals) It is important for me to generally become more knowledgeable. (Learning Goals) • I want to try a new career. (New Career) • I hope to advance in my current career. (Professional Goals) • I believe it will make me more marketable to future employers. (Professional Goals) • I want to increase my job security. (Professional Goals) • I want to use the things I learn to help others. (Social Goals) • I believe it will help me make a difference in society. (Social Goals) • I want to provide a good example for my friends and family. (Social Goals) • I want to encourage my friends and family in their current studies. (Social Goals) • My friends and family expect me to continue my studies. (Social Goals) • How do you feel about your decision to enroll in your competency-based education program?

Table 3.6 Continued

5. What is the college choice process for competency-based education learners?	• Was there anything specific that made you decide you wanted to go to or return to college before you enrolled in your competency-based education program? • Where did you begin your search to start or return to college? • What type(s) of information did you look for in this process? • Who, if anyone, was involved in this search process with you? • Please share why you chose the program you are currently enrolled in. you enrolled in your competency-based education program? • Where did you begin your search to start or return to college? • What type(s) of information did you look for in this process? • Who, if anyone, was involved in this search process with you? Please share why you chose the program you are currently enrolled in. • Which of your skills or experience were most helpful in preparing you for this educational experience? Explain

Table 3.7 outlines the variable names, independent, dependent, control variable status, aligned survey questions, variable scale, and variable codes. The total number of variables is 23: 22 independent variables, 4 control variables, and one dependent variable. Of the 22 independent variables, one is the institutional type the learner

attends, 15 will be utilized to understand learners' characteristics, five are enrollment motivators, and one is the college choice process. The four control variables, which are also independent variables for understanding learners' characteristics, are: institution type, gender, ethnicity, and race. The primary dependent variable is the learners' satisfaction with their decision to enroll in a competency-based education program however, in one analysis, the five enrollment motivators also serve as dependent variables.

Table 3.7 Table of Variables

Variable Name	Variable Type	Survey Questions	Variable Scale	Codes
Institution Type	Independent and Control	Determined by Survey Participation	Dichotomous	INSTTYPE 0 = Public 1 =Private/Non-Profit
Gender	Independent and Control	Which restroom do you choose?	Nominal	GEN 0 =Male 1 =Female
Age	Independent	When is your birthday?	Continuous Interval; Categorical	AGE Numerical age (after calculating based on birthday, 08/01/2016); AgeCategory (18-24; 25-29; 30-34; 35-39; 40-49; 50 or older)
Ethnicity	Independent and Control	Do you identify as Hispanic?	Nominal	ETH 0 = Non-Hispanic 1 = Hispanic 99 = Unknown

Table 3.7 Continued

Race	Independent and Control	With which race do you identify?	Nominal	RACE 1 = American Indian/Alaska Native/Other 2 = Asian/Native Hawaiian/Other Pacific Islander 3 = Black/African American 4 = White 5 = Two or more races
Institution Location	Independent	Do you currently live in the same state as your institution?	Dichotomous	COLSTATE 0=Yes 1=No
First Generation Status	Independent	What was the highest school completed by your mother or parent 1? What was the highest school completed by your mother or parent 2?	Nominal	MEDUC 1=Middle school/Jr. high 2=High school 3=College or beyond 99=Other/unknown FEDUC 1=Middle school/Jr. high 2=High school 3=College or beyond 99=Other/unknown If both MEDUC & FEDUC = 1, 2 or 99 then FGS = Yes (0) If either MEDUC and/or FEDUC = 3 then FGS = No (1)

Table 3.7 Continued

Years Since High School	Independent	How many years has it been since you last attended high school?	Continuous Interval; Categorical	YRSFRMHS Continuous YRSFRMHS_Cat (0-10 years; 11-20 years; 20.72-30 years; 31-40 years; 41-50 years)
Other College	Independent	Have you ever studied at a different university or college?	Dichotomous	PRIORCOL 0=Yes 1=No
Years from College Start	Independent	How many years has it been since you first attended college?	Continuous Interval; Categorical	YRSFRMCOL Continuous YRSFRMCOL_Cat (0-10 years; 11-20 years; 21-30 years; 31-40 years; 41-49 years)
Prior Study	Independent	Had you ever taken college courses in this field before beginning your current program?	Dichotomous	PRIORSTUDY 0=Yes 1=No
Marital Status	Independent	What is your marital status?	Nominal	MARSTAT 1=Single 2=Married 3=Separated/divorced/ widowed
Pell Grant Eligible	Independent	Are you eligible for or have you received a Pell grant?	Nominal	PGE 1=Yes 2=No 99=Unknown

Table 3.7 Continued

Employment Status	Independent	What is your employment status?	Nominal	EMPSTAT 1= Unemployed, not looking for work 2=Unemployed, looking for work 3=Part time 4=Full time 99=Unknown
Paid Work Hours	Independent	How many hours do you work per week on average?	Continuous Interval; Categorical	continuous (hours worked last week), don't know or none; WRKHRS_Cat (0-20 hours; 21-30 hours; 31-40 hours; 41-50 hours; 51-168 hours)
Professional Experience	Independent	How many years have you worked in a job related to your current field of study?	Continuous Interval	YRSPROFEXP Continuous; YRSPROFEXP_Cat (0-10 years; 11-20 years; 21-30 years; 31-40 years; 41-50 years)
Modality	Independent and Dependent	I like to control the course pace and time of learning activities. I prefer traditional, face- to-face class meetings. [Negatively Coded]	Interval	5 point Likert "Strongly Disagree" (1) to "Strongly Agree" (5)

Table 3.7 Continued

		I would prefer to work at home or remotely than have to drive to campus		
Learning Goals	Independent and Dependent	I want to become a better person. I believe it will help me grow as a person. I hope to improve my problem solving ability. I want to learn as much as I can on this topic. It is important for me to generally become more knowledgeable.	Interval	5 point Likert "Strongly Disagree" (1) to "Strongly Agree" (5)
Professional Goals	Independent and Dependent	I hope to advance in my current career. I believe it will make me more marketable to future employers.	Interval	5 point Likert "Strongly Disagree" (1) to "Strongly Agree" (5)

Table 3.7 Continued

		I want to increase my job security.		
Social Goals	Independent And Dependent	I want to use the things I learn to help others. I believe it will help me make a difference in society. I want to provide a good example for my friends and family. I want to encourage my friends and family in their current studies. My friends and family expect me to continue my studies.	Interval	5 point Likert "Strongly Disagree" (1) to "Strongly Agree" (5)
New Career	Independent and Dependent	I want to try a new career.	Interval	5 point Likert "Strongly Disagree" (1) to "Strongly Agree" (5)

Table 3.7 Continued

College Choice	Independent	Was there anything specific that made you decide you wanted to go to or return to college before you enrolled in your competency-based education program? Where did you begin your search to start or return to college? What type(s) of information did you look for in this process? Who, if anyone, was involved in this search process with you? Please share why you chose the program you are currently enrolled in.	Categorical	College Choice Process

Table 3.7 Continued

		Which of your skills or experience were most helpful in preparing you for this educational experience? Explain.		
Satisfaction with Decision to Enroll	Dependent	How do you feel about your decision to enroll in your competency-based education program?	Interval	PERCEPTENRL 5 point Likert "Not at all Satisfied" (1) to "Extremely Satisfied" (5)

Instrumentation Validity and Reliability

This research utilized data collected through a validated survey produced by the National Research Center for Distance Education and Technological Advancement (DETA) as part of their DETA Research Toolkit (DETA, 2015) and additional questions pilot tested in a qualitative phenomenology by Morrison (2016) in 2015. The DETA survey instrument questions were validated utilizing both select literature (modality) and a grounded-theory, qualitative analysis (learning goals, professional goals, academic goals, and social goals). For modality, the questions were validated utilizing Roblyer, Davis, Mills, Marshall, and Pape (2008), a study that ran the 60-item *ESPRI* with a

population of 2,880 online learners. This study had a reported "total scale reliability for the sixty-item version of the instrument was found to be alpha = .92…" (Roblyer, Davis, Mills, Marshall, & Pape, 2008, p.98). For learning goals, professional goals, academic goals, and social goals the items were validated utilizing the following procedure:

> "The items in this instrument were developed based on a grounded-theory, qualitative analysis of student goals recorded during the recruitment and application process for the University of Wisconsin (UW) Flexible Option, a fully online, competency-based, direct assessment program offered as a collaboration among UW-Extension, UW Colleges, UW-Milwaukee, and UW-Parkside. The responses were collected as part of the normal recruitment process when students were asked about their "Career Goals" during a phone interview with recruitment staff. The responses were then recorded and stored as part of their file and retrieved for this analysis. After initial analysis was complete, the research team validated and identified constructs during a focus group with program success coaches, who are the staff that have the most interaction with enrolled students on a day-to-day basis" (DETA, 2015, p. 139-140).

Although these motivation categories were the basis of the prior research, a primary factor analysis of the actual responses to this implementation of the survey reveals factor loadings that differ from those the DETA Toolkit reported. Table 3.8 outlines the factor loadings, which eliminates one of UW DETA's factors, academic goals, and adds an additional factor – New Career. The factor, academic goals, was eliminated because the questions associated with this category did not load on any one factor, but rather weakly loaded on several factors. The level of loading was determined based on the work of Comrey and Lee (1992) which states that factor loading hits the acceptable level at .55 (p.243).

Table 3.8: Factor loadings based on a principal component analysis with varimax rotation with Kaiser normalization

	Learning Goals (Factor 1) (α = .851)	Social Goals (Factor 2) (α = .823)	Professional Goals (Factor 3) (α = .690)	Learning Modality (Factor 4) (α = .655)	New Career (Factor 5)
I like to control the course pace and time of learning activities.	.098	.034	.094	**.731**	.080
I prefer traditional, face- to-face class meetings.	-0.79	-.116	-.111	**.759**	.012
I would prefer to work at home or remotely than have to drive to campus.	.087	.158	.147	**.778**	-.076
I want to become a better person.	**.731**	.212	.197	.000	-.071
I believe it will help me grow as a person.	**.773**	.232	.078	.038	.057
I hope to improve my problem-solving ability.	**.800**	.144	.115	-.039	-.041
I want to learn as much as I can on this topic.	**.710**	.271	.126	.024	.139
It is important for me to generally become more knowledgeable.	**.708**	.216	.141	.109	.134

Table 3.8 Continued

I want to try a new career.	.138	.103	.046	.049	**.875**
I hope to advance in my current career.	.104	.054	**.631**	.070	-.544
I believe it will make me more marketable to future employers.	.319	.069	**.776**	.103	.062
I want to increase my job security.	.138	.217	**.823**	-.010	.057
Continuing my education is one of my personal goals.*	.430	.460	.111	.232	-.014
I want to apply my previously earned credits toward a degree.*	.306	.391	.254	.143	-.194
I hope it will be a stepping stone to a more advanced degree program.*	.246	.379	.246	.011	.217
I want to use the things I learn to help others.	.288	**.772**	.103	.052	.037
I believe it will help me make a difference in society.	.200	**.756**	-.027	.062	.181

Table 3.8 Continued

I want to provide a good example for my friends and family.	.294	**.775**	.017	.071	-.140
I want to encourage my friends and family in their current studies.	.269	**.777**	.145	-.015	-.058
My friends and family expect me to continue my studies.	-.034	**.586**	.184	-.283	.183

**These questions did not load on any single factor and were therefore eliminated as an enrollment motivator.*

Data Analysis

The study utilized frequencies, measures of central tendency (mean) and variability (range and standard deviation) (Gilner et al., 2017; Mertens, 1998) to describe learners' characteristics (research question one). The research investigated demographic information, first generation status, prior academic activity, Pell grant eligibility, and employment status. It is important to note that Pell Grant Eligibility (PGE) is being utilized as a proxy for socioeconomic status of the learners for demographic reasons. As Rubin (2011) noted, "…once students are deemed Pell-eligible, they are viewed as needing financial assistance" (p.678). Additionally, informed by the work of Turley (2009) and Clinefelter and Aslanian (2016), this study looks at whether students

live in the same state as the institution in which they are enrolled as a proxy for location being a factor in the college choice process.

For characteristics associated with variables which contained open responses (age, years from high school, years from college start, work hours, and years professional experience) the data have been analyzed in two ways, to provide a depth of view into the data. First, the mean, standard deviation and range are shared for each of these variables. Then to facilitate additional analysis, each variable was broken down into meaningful categories for the data (Abbott & McKinney, 2013). For age categories, the data use the work of Kelchen (2016) and the 2017-2018 IPEDS Data Collection for Fall Enrollment for 4-year Degree Granting Institutions (NCES, 2018). However, based on initial analysis of the data, several categories were collapsed to separate the traditional age students (18-24 years) from the non-traditional age students (25 and older).

The next three research questions implemented a correlational research design utilizing a series of ordinary least squares regression models to estimate the relationships outlined in the research questions above. Exploratory analyses were conducted to test the assumptions of ordinary least squares regression. The assumptions of multiple regression include an interval dependent variable that is normally distributed; the relationship between the predictor, or independent, variables and dependent variable is linear (Gilner et al., 2017). This was tested by evaluating the skewness and kurtosis of the variables through the frequencies command in SPSS

(Leech, Barrett, & Morgan, 2011). Collinearity of independent variables can present an issue in analysis (Gilner et al., 2017; Leech et al., 2011; Tabachnick & Fidell, 2013). Correlation matrices were implemented to investigate the collinearity of the independent variables, including enrollment motivators and learners' characteristics. All enrollment motivators were found to be weakly correlated except for Learning Goals and Social Goals which were low-moderately correlated (.522). Learners' characteristics were also all found to be weakly correlated except Years from College Start and Age Category (.685) which was moderately correlated and Years from High School and Age Category (.865) and Years from High School and Years from College Start (.710) which were highly correlated. Tabachnick & Fidell (2013) suggest eliminating one of the variables in any bivariate correlation over .70 before implementing the multiple linear regression. For this reason, Years from High School, Years from College Start, and Age Category were eliminated from the regression analyses. The many low correlations are a positive outcome for the independence of the enrollment motivators and learners' characteristics. Analysis of collinearity statistics show this assumption has been met as VIF scores were all below 10 and tolerance scores were all above 0.2. Additionally, the values of residuals are shown to be independent as all Durbin-Watson scores were above 1 and below 3, with a range of 1.682 to 2.049. The assumption of variance of residuals was investigated via a plot of standardized residuals versus standardized predicted values. The resulting scatterplots showed no overt funneling, suggesting this assumption has been met. Finally, Cook's distance values were calculated to test the

assumption that there were no influential cases biasing the models. As no values were over 1, this suggests no cases inordinately influenced the models.

To address research question two, multiple linear regression was employed to determine if the characteristics of competency-based education learners predict the enrollment motivators. Research question two utilized the following models for each enrollment motivator (Modality, Learning Goals, Professional Goals, Social Goals, New Career):

Model 1: Enrollment Motivator = First Generation Status + (Controls: Ethnicity + Race + Gender + Institutional Type)

Model 2: Enrollment Motivator = First Generation Status + Other College + Prior Study + Years Professional Experience + Pell Grant Eligibility + Employment Type + (Controls: Ethnicity + Race + Gender + Institutional Type)

Research question three employed both descriptive statistics and multiple linear regression analysis to investigate if learners' characteristics are predictors of learners' satisfaction. Research question three utilized the following models:

Model 1: Satisfaction with decision to enroll = First Generation Status + (Controls: Ethnicity + Race + Gender + Institutional Type)

Model 2: Satisfaction with decision to enroll = First Generation Status + Other College + Prior Study + Years Professional Experience + Pell Grant Eligibility + Employment Type (Controls: Ethnicity + Race + Gender + Institutional Type)

A correlational research design was utilized to investigate whether enrollment motivators predict learners' satisfaction with their enrollment decision (research question four). A multiple linear regression was calculated to predict satisfaction with decision to enroll based on enrollment motivators (modality, learning goals, professional goals, social goals, new career). Research question four utilized the following models for each enrollment motivator:

Model 1: Satisfaction with decision to enroll = Enrollment Motivator

Model 2: Satisfaction with decision to enroll = Enrollment Motivator + First Generation Status + (Controls: Ethnicity + Race + Gender + Institutional Type)

Model 3: Satisfaction with decision to enroll = Enrollment Motivator + First Generation Status + Other College + Prior Study + Years Professional Experience + Pell Grant Eligibility + Employment Type (Controls: Ethnicity + Race + Gender + Institutional Type)

Once each enrollment motivator was investigated individually, all significant enrollment motivators were combined in a multiple regression utilizing the following models:

Model 1: Satisfaction with decision to enroll = Significant Enrollment Motivators

Model 2: Satisfaction with decision to enroll = Significant Enrollment Motivators + First Generation Status + (Controls: Ethnicity + Race + Gender + Institutional Type)

Model 3: Satisfaction with decision to enroll = Significant Enrollment Motivators + First Generation Status + Other College + Prior Study + Years Professional Experience + Pell Grant Eligibility + Employment Type (Controls: Ethnicity + Race + Gender + Institutional Type)

In exploring research question five, the college choices process, this study quantified the six open-ended questions included in the original survey utilizing a quantitative content analysis. All six of these questions were designed to uncover the process learners took in making their enrollment choice. This quantitative content analysis applied conceptual analysis to establish what concepts are mentioned and their frequency (Busch, et al., 2012). The first step in quantitative content analysis was to determine the code book (Neuendorf, 2017). The code book was developed from the determining decision factors from Southerland's (2006) "new model for college choice & persistence" (p. 14). Manual coding utilized this code book but the flexibility to allow emergent concepts was incorporated into the coding process. This raises an issue of reliability by introducing subjectivity, therefore reducing replicability (Busch, et al., 2012; Neuendorf, 2017). In addition to the manual coding process, the answers were imported into NVivo to determine word frequencies and create corresponding word art to increase the validity of the coding. Hoover and Koerber (2011) cite the benefits of

utilizing NVivo as contributing to the "efficiency, multiplicity, and transparency" (p.73) of the analysis of qualitative data. Computer coding utilizing NVivo of word frequencies was utilized for its ease and effectiveness but also to support ecological validity by processing the data in the same modality it was collected (Neuendorf, 2017).

Study Reliability and Validity

Validity has many faces – internal, external, and measurement. Gilner et al. (2017) state internal validity is "the degree to which the researcher can infer that a relationship between independent and dependent variables is causal" ("Evaluating Internal Validity," para.2). For this study, which is associational (meaning there is only one group of participants), Gilner et al. (2017) state that it will not be able to "provide evidence of causation no matter how strong the statistical association" ("Equivalence in Associational Studies," para.1). Even if the study will not be able to claim direct causation, the associations between variables hold much information about the study participants. Threats to internal validity include the inherent bias in having one group of participants as well as control of extraneous variables. As this is a one-time survey, threats such as maturation, history, testing, and instrumentation do not apply (Gilner et al., 2017). An additional threat to internal validity is ambiguous temporal precedence. Gilner, Morgan, and Leech, (2017) define this as "when it is unclear if the independent variable precedes the dependent variable" ("Ambiguous Temporal Precedence," para.2). For this study, in research question four, it is assumed that the independent variable

(enrollment motivators) proceed the dependent variable (satisfaction with decision to enroll).

External validity concerns the generalizability of the study, or if the measures and results can be applied outside of the study (Gilner et al., 2017). Population validity and ecological validity are the two contributing factors to external validity (Gilner et al., 2017). As the sampling methodology utilized for learner participants in the study was census and a representative sample, the population validity may be rated medium. However, the response rates were fairly low, which may downgrade the population validity. Ecological validity is the "degree to which the research environment is similar to the natural environment" (Gilner et al., 2017, "Ecological External Validity," para. 1). For this study, the natural environment of these competency-based education enrollees is an online learning environment. As the survey was also administered in an online survey tool, the study environment is like the natural environment.

Reliability is "the consistency of a series of measurements" (Gilner et al., 2017, "Reliability," para. 1). While this measurement is extremely important in instrument development, this study utilized a secondary data analysis. As the data have already been collected, performing reliability tests is out of the scope of this study. However, the instrument validity and reliability were discussed in an earlier section.

Summary

In this chapter, I explored the research design, the context for the research, the variables, and specifications as well as the data analysis.

CHAPTER FOUR – RESULTS

Introduction

This study investigates college choice and competency-based education learners' enrollment motivators. As covered in detail in chapter one, the purpose of the study is to help the field better understand the characteristics of competency-based education learners and why they choose to study in this modality. This study employed descriptive and correlational statistics as well as quantitative content analysis. Utilizing this range of analysis methods gives a broad view into the data.

Specifically, this chapter provides the data addressing the following research questions:

1. What are the characteristics of competency-based education learners?
2. Do characteristics of competency-based education learners predict enrollment motivators?
3. Do characteristics of competency-based education learners predict satisfaction with their decision to enroll?
4. Do the enrollment motivators predict competency-based education learners' satisfaction with their decision to enroll?
5. What is the college choice process for competency-based education learners?

Analysis

This analysis is arranged by research question to streamline understanding of the findings. In research question one, the study employed descriptive statistical techniques to investigate the demographic and work-life related characteristics of competency-based education enrollees. In research questions two, three, and four a series of ordinary least squared regression models were used to estimate the relationships described in each question above. The assumptions for the regression models were tested utilizing correlation matrices, collinearity statistics, Durbin-Watson scores, scatterplots of standardized residuals versus standardized predicted values, Cook's distance values, and by evaluating skewness & kurtosis of variables. These analyses indicate that the assumptions for regression were met. A full discussion of the assumptions can be found in Chapter 3. In research question five, the method utilized is quantitative content analysis which is "a numerically based summary of a chosen message set" (Neuendorf, 2017, p. 21). However, to add color to the categories determined in the analysis, I have included a quote of support directly from the words of participants.

Characteristics of Competency-based Education Learners

In response to research question 1, descriptive statistics were generated to determine the composite characteristics across competency-based enrollees. For this analysis, the two samples from the institutional types described in chapter three were

combined represent an overall sample. In chapter three the results of a series of t-tests are outlined which provide justification for the characteristics of the two groups being similar enough to analyze as one group. It was important to combine the samples for greater generalizability. Table 4.1 outlines the descriptive statistics including N, percentage of respondents, mean, standard deviation and range for each of the characteristics as appropriate to the level of measurement.

The overall sample of 346 learners had a mean age of 38.78 and a range of 18-70. The range is important as it shows competency-based education learners do not fit only in the popular conception of a college student as the traditional aged student (18-24) but rather encompass a much broader range of learner. To further support this, in the age category breakdown, you can see the traditional age (18-24) is the smallest group (9.5%) while the largest group of learners are 40-49 year olds (30.6). Closely related to age are both the number of years since the learner last attended high school and the number of years since the learner started college. The largest group for each of these categories is 11-20 years ago with years from high school at 32.4% and years from college start at 37.0%. When looking at the next largest percentage in each of these categories, they diverge with years from high school increasing to 20.72 – 30 years (31.2%) while years from college start decreases to 0-10 years (31.2%). These data suggest that divergence as indication that more learners delayed their college start than started right out of high school and returned later.

The overall sample of 346 learners had a mean paid work hours of 38 hours per week, with a range between 0 – 168. This range may look surprising because some learners reported they worked every hour possible in a week. However, in their responses many of these learners indicated that they were stay-at-home parents therefore were 'on the clock' 24/7. While perhaps not the intent of the question, the learners' response is their interpretation of 'paid work.' In the categories of work hours, the majority of learners (54.6%) work between 31 – 40 hours a week, followed by those who work 41-50 hours a week (21.4%), leading to the conclusion that the majority of the learners work full time. This is consistent with the variable which asked learners to categorize their employment status. 71.4% indicated they work full time. Only 7.2% of learners in the sample reported working part time, which is close to the 13.6% who indicated they work 0-20 hours a week in the paid work hours category. It is also interesting to note that 5.8% of these learners indicated they are unemployed and not looking for work.

These learners indicate they have worked between 0-10 years (64.7%) in their current field of study with mean years worked being 9.63 with a range of 0-43. The percentage of learners in each category of years of professional experience decreases as the years increase with only 3.8% of learners indicating they have 31-43 years of professional experience.

The majority of the respondents were female (70.2%). The majority of the respondents were also white (84.4%), with the next largest categories of race being two

or more races (5.8%) and black (5.8%). The combined category of Asian/Native Hawaiian/Other Pacific Islander was 2.3% while the American Indian/Alaska Native/Other was the smallest racial category at 1.7%. The majority of these learners were Non-Hispanic (89.6%) however, 8.7% claim Hispanic ethnicity and 1.7% of learners are of unknown ethnicity.

The majority of these 346 learners do not live in the same location as their institution (68.5%). This has implications related to prior literature which will be discussed in chapter five. These learners were nearly evenly split on first generation to attend college status with 51.2% reporting they are not first-generation college students and 48.8% reporting they are the first in their family to attend college.

An overwhelming majority of these 346 learners indicated they have studied at a prior college (95.7%), while only 61% indicated they have previously studied in their current discipline. This is interesting because it indicates that those who return to college may change discipline at a fairly high rate.

The majority of these learners are married (66.2%) while just 20.5% are single and 13.3% categorize themselves as separated/divorced/widowed. The overall sample of 346 learners had a close split on those who are eligible for a Pell grant (48.8%) and those who are not (43.1%). Those who indicated they do not know if they are eligible to receive a Pell grant (8.1%) are interesting to consider as completing the Free Application for Federal Student Aid (FAFSA) would provide this information so either these students have never completed one or never paid attention to their Pell grant eligibility.

Table 4.1: Descriptive Statistics

	N	Percent of Respondents	Mean	SD	Range
Institution Type	346				
Public	61	17.6			
Private/Non-Profit	285	82.4			
Mean Age	346		38.78	10.03	18-70
18–24 years	33	9.5			
25-29 years	37	10.7			
30-34 years	53	15.3			
35-39 years	64	18.5			
40-49 years	106	30.6			
50 Years or Older	53	15.3			
Years Since High School	346		20.72	10.25	0-50
0-10 Years	67	19.4			
11- 20 Years	112	32.4			
20.72 – 30 years	108	31.2			
31 – 40 years	52	15.0			
41-50 Years	7	2.0			
Years from College Start	346		16.90	10.03	0-49
0-10 Years	108	31.2			
11- 20 Years	128	37.0			
21 – 30 years	74	21.4			
31 – 40 years	33	9.5			
41-49 Years	3	.9			
Paid Work Hours	346		38.00	17.55	0-168
0-20 Hours	47	13.6			
21-30 Hours	12	3.5			
31-40 Hours	189	54.6			
41-50 Hours	74	21.4			
51-168 Hours	24	6.9			
Professional Experience (in Years)	346		9.63	9.28	0-43
0-10 Years	224	64.7			
11-20 Years	79	22.8			
21-30 Years	30	8.7			
31-43 Years	13	3.8			
Gender	346				
Female	243	70.2			
Male	103	29.8			

Table 4.1 Continued

Ethnicity	346	
Hispanic	30	8.7
Non-Hispanic	310	89.6
Unknown	6	1.7
Race		
AI/NA/Other	6	1.7
Asian/Native Hawaiian/Other Pacific Islander	8	2.3
Black	20	5.8
White	292	84.4
Two or more races	20	5.8
Institution Location Same as Residence	346	
Yes	109	31.5
No	237	68.5
First Generation Status	346	
Yes	169	48.8
No	177	51.2
Studied at a Prior College	346	
Yes	331	95.7
No	15	4.3
Prior Study in Discipline	346	
Yes	211	61.0
No	135	39.0
Marital Status	346	
Single	71	20.5
Married	229	66.2
Separated/Divorced/Widowed	46	13.3
Pell Grant Eligible	346	
Yes	169	48.8
No	147	43.1
Unknown	28	8.1
Employment Status		
Unemployed, Not Looking for Work	20	5.8
Unemployed, Looking for Work	18	5.2
Part time	25	7.2

Table 4.1 Continued

Full time	247	71.4
Unknown	36	10.4

An overall composite description of the sample indicated that the average competency-based education learner is a married, white, non-Hispanic woman, just over 38 years old living in a different state than their institution. This composite learner works full-time, an average of 38 hours per week and this is not their first attempt at achieving a college degree. She has been out of high school for just over twenty years and is utilizing a Pell grant to help pay for her education. She has both professional experience and prior study in her current discipline.

An interesting characteristic in these data is the study at a prior college, while I expected this to be a high number based on the high percentage of transfer-in students these colleges report, it far exceeded my expectations at 95.7% of these learners. This indicates these students are seeing competency-based education as an option for degree- completion however, not as many are making it their first choice for college level learning. Additionally, while I expected the average age of these learners to be in the mid-thirties, based on prior research, the range of age is very interesting and wide – from 18 to 70. It goes against the popular belief that competency-based education is best suited for older learners to have nearly as many in the 18-24-year-old category (9.5%) as there are in the 25-29 year old category (10.7%). Finally, though not surprising given the online nature of the programs investigated, it is interesting that so many of

these learners do not live in the same location as their institution (68.5%) as prior literature indicates that location is a determining factor, even for non-traditional students.

Learners' Characteristics Predict Enrollment Motivators

Question two asks if learners' characteristics predict enrollment motivators. These analyses used a total of ten models - two for each of the enrollment motivators – to investigate the relationships between learners' characteristics and enrollment motivators. A full explanation of the models can be found in chapter three. Each enrollment motivator was explored separately to avoid over specificity of the model and to allow practitioners to develop techniques based on the motivator. While this does increase the possibility for type I error, it is important for practice.

To increase understanding of the enrollment motivators (dependent variables), descriptive statistics can be found in Table 4.2.

Table 4.2: Descriptive Statistics of Enrollment Motivators (Dependent Variables)

Enrollment Motivator	N	Mean	SD	Range
Modality	346	4.16	.67	1.67-5
Learning Goals	346	4.41	.60	1-5
New Career	346	3.23	1.32	1-5
Professional Goals	346	4.36	.73	1-5
Social Goals	346	4.15	.73	1-5

Modality. The modality enrollment motivator is related to the learners' preference to learn in an online or face-to-face environment. The results of the

regression for model 1 were not significant (R^2= .037, *F*(9,336)= 1.421, *p*=.178). However, the results indicate that Blacks are less likely to be motivated by modality than are whites (β=-.361, *p*=.020). The results of the regression for model 2 were not significant (R^2= .044, *F*(18,327)= .829, *p*=.665). Again, the results indicate that Blacks are less likely to be motivated by modality than are whites (β=-.340, *p*=.033).

Learning Goals. The learning goals motivator relates to a learners' desire to become more knowledgeable both in general and in their specific area of study. The results of the regression for model 1 were not significant (R^2= .014, *F*(9,336)= .517, *p*=.862). The results of the regression for model 2 were not significant (R^2= .023, *F*(18,327)= .436, *p*=.980). There were no variables which showed a significant contribution to the learning goals enrollment motivator in either model.

New Career. The new career motivator is a learners' wish to try a new career. The results of the regression for model 1 were significant (R^2= .051, *F*(9,336)= 2.025, *p*=.036) and one variable was said to explain 5.1% of the new career enrollment motivator. Asian/Native Hawaiian/Other Pacific Islanders were more likely to be motivated by new career than were whites (β= 1.091, *p*=.020). The results of the regression for model 2 were significant (R^2= .188, *F*(18,327)= 4.201, *p*=.000) and three variables were said to explain 18.8% of the new career enrollment motivator. Asian/Native Hawaiian/Other Pacific Islanders were more likely to be motivated by new career than were whites (β= .931, *p*=.040) Those without prior study in the subject area

are more likely be motivated by new career than those with prior study in the subject area (β= .380, *p*=.007). Years of professional experience (β= -.451, *p*=.000) has a negative effect on the new career motivator.

Professional Goals. The professional goals motivator focuses on advancing learners' current career, being more marketable to future employers, and increasing their job security. The results of the regression for model 1 were not significant (R^2= .026, *F*(9,336)= 1.101, *p*=.439). There were no variables which showed a significant contribution to the professional goals enrollment motivator. The results of the regression for model 2 were significant (R^2= .109, *F*(18,327)= 2.214, *p*=.003) and one variable (employment status) explains 10.9% of the professional goals enrollment motivator. Those learners who are unemployed and not looking for work (β= -.672, *p*=.000), unemployed and looking for work (β= -.396, *p*=.028), and those whose employment status is unknown (β= -.320, *p*=.015) were less likely to be motivated by professional goals than were those who are employed full time.

Social Goals. The social goals motivator relates to learners' inclination to make a difference in society and to encourage their friends and family in educational pursuits by being an example. The results of the regression for model 1 were significant (R^2= .089, *F*(9,336)= 3.658, *p*=.000) and three variables were said to explain 8.9% of the social goals enrollment motivator. Hispanics were more likely to be motivated by social goals than were Non-Hispanics (β= .401, *p*=.004). Females are more likely to be motivated by

social goals than males (β= .259, *p*=.002). Additionally, those learners enrolled in a private/non-profit institution are more likely to be motivated by social goals than are those learners enrolled in a public institution (β= .302, *p*=.003). The results of the regression for model 2 were significant (R^2= .139, *F*(18,327)= 2.927, *p*=.000) and five variables were said to explain 13.9% of the social goals enrollment motivator. Hispanics were more likely to be motivated by social goals than were Non-Hispanics (β= .400, *p*=.004). Females are more likely to be motivated by social goals than males (β= .240, *p*=.005). Additionally, those learners enrolled in a private/non-profit institution are more likely to be motivated by social goals than are those learners enrolled in a public institution (β= .279, *p*=.007). Years of professional experience (β= -.107, *p*=.034) has a negative effect on the social goals motivator. Additionally, those who are not eligible for a Pell Grant are less likely to be motivated by social goals than are those who are eligible for a Pell Grant (β= -.227, *p*=.007).

Table 4.3: Multiple Linear Regression Coefficients for Enrollment Motivators

Motivators	Modality		Learning Goals		New Career		Professional Goals		Social Goals	
Variables	Model 1 β (standard error)	Model 2 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)
Institutional Type	.123	.133	.024	.017	-.242	-.191	.086	.030	.302**	.279**
(0=Public; 1 – Private/Non-Profit	(.095)	(.099)	(.086)	(.090)	(.186)	(.181)	(.105)	(.105)	(.101)	(.103)
Gender	-.114	-.118	.029	.023	-.259	-.198	.089	.126	.259**	.240**
(0=Male; 1=Female)	(.079)	(.081)	(.072)	(.074)	(.154)	(.148)	(.087)	(.086)	(.084)	(.084)
Ethnicity										
Non-Hispanic	--	--	--	--	--	--	--	--	--	--
Hispanic	.009	.012	.213	.208	.315	.363	.132	.081	.401**	.400**
	(.131)	(.134)	(.119)	(.121)	(.257)	(.243)	(.145)	(.142)	(.139)	(.138)
Unknown	.260	.207	.067	.116	-.151	-.189	-.390	-.348	.059	.126
	(.280)	(.293)	(.254)	(.266)	(.549)	(.533)	(.309)	(.311)	(.297)	(.303)
Race										
AI/NA/Other	-.232	-.201	-.101	-.111	-.016	-.240	.484	.598	.175	.048
	(.281)	(.291)	(.256)	(.264)	(.552)	(.529)	(.311)	(.309)	(.299)	(.301)
Asian/Native Hawaiian/Other Pacific Islander	.234	.238	.106	.109	1.091*	.931*	-.048	.084	.194	.133
	(.238)	(.248)	(.216)	(.225)	(.466)	(.451)	(.263)	(.263)	(.252)	(.257)
Black	-.361*	-.340*	-.066	-.078	.404	.336	-.067	-.148	.320	.311
	(.155)	(.159)	(.141)	(.144)	(.304)	(.289)	(.171)	(.168)	(.164)	(.164)
White	--	--	--	--	--	--	--	--	--	--
Two or more races	-.151	-.148	.063	.041	.120	-.173	-.064	-.066	.125	.051
	(.157)	(.162)	(.142)	(.147)	(.307)	(.296)	(.173)	(.172)	(.166)	(.168)
First Generation Status	-.092	-.083	.014	.005	.312	.210	-.101	-.096	-.018	-.067
(0=Yes; 1=No)	(.072)	(.075)	(.066)	(.068)	(.141)	(.137)	(.080)	(.080)	(.076)	(.078)
Studied at a Prior College	--	.040	--	.006	--	-.005	--	.113	--	-.035
		(.190)		(.172)		(.345)		(.201)		(.196)

Table 4.3 Continued

(0=Yes; 1=No)

Prior Study in Discipline	--	-.008	--	-.048	--	.380**	--	-.141	--	-.064
(0=Yes; 1=No)		(.077)		(.070)		(.140)		(.082)		(.080)
Pell Grant Eligible										
Yes	--	--	--	--	--	--	--	--	--	--
No	--	.048	--	-.072	--	-.090	--	-.015	--	-.227**
		(.081)		(.074)		(.147)		(.086)		(.084)
Unknown	--	-.047	--	-.077	--	-.071	--	.181	--	-.049
		(.145)		(.131)		(.263)		(.153)		(.150)
Employment Status										
Unemployed, Not Looking for Work	--	-.017	--	-.001	--	.397	--	-.672***	--	.044
		(.165)		(.150)		(.300)		(.175)		(.171)
Unemployed, Looking for Work	--	-.016	--	-.015	--	.495	--	-.396**	--	-.215
		(.169)		(.153)		(.307)		(.179)		(.175)
Part time	--	.161	--	.017	--	.225	--	-.265	--	.096
		(.147)		(.133)		(.267)		(.156)		(.152)
Full time	--	--	--	--	--	--	--	--	--	--
Unknown	--	-.001		-.006	--	.057	--	-.320*	--	.069
		(.123)		(.112)		(.224)		(.131)		(.127)
Years Professional Experience (1=10-20 Years; 2 = 11-20 Years; 3 = 21-30 Years; 4 = 31-43 Years)	--	.026	--	-.048	--	-.451***	--	.006	--	-.107*
		(.049)		(.044)		(.089)		(.052)		(.050)
Intercept	4.205	4.130	4.342	4.487	3.370	3.871	4.273	4.439	3.656	4.006
	(.109)	(.154)	(.099)	(.140)	(.215)	(.280)	(.121)	(.163)	(.116)	(.159)
R^2	.037	.044	.014	.023	.051	.188	.026	.109	.089	.139
R^2 adjusted	.011	-.009	-.013	-.030	.026	.143	.000	.060	.065	.091
F test	1.421	.829	.517	.436	2.025	4.201	1.001	2.214	3.658	2.927

***p<.05 **p<.01 ***p<.001**

Learner Satisfaction with Decision to Enroll

Research question three investigates learners' satisfaction with their decision to enroll in a competency-based education program. The first level of measurement of the learners' satisfaction with their decision to enroll were descriptive statistics outlined in Table 4.4. The level of satisfaction was measured on a 5-point Likert scale, with 5 being "extremely satisfied" and 1 being "not at all satisfied." Overall, these 346 learners are very satisfied with their decision to enroll in a competency-based education program. As these results show, the most often chosen response, or mode, was 5.0 (*N*= 161) – extremely satisfied, with a mean 4.35, or very satisfied. Additional support for the positive outlook on learner satisfaction with their decision to enroll, the next largest group is very satisfied (*N*=127), for an overall 88.1% who are very satisfied. The range (2-5) is also an interesting statistic to consider as no learners chose 1, or "not at all satisfied."

Table 4.4: Satisfaction with Decision to Enroll by Learners' Characteristics

Learners' Characteristics	Mean of Satisfaction	SD	Range
Dependent Variable			
Satisfaction with Decision to Enroll	4.35	.72	2-5
Independent Variables			
Institutional Type			
Public	4.33	.73	3-5
Private/Non-Profit	4.35	.72	2-5
Gender			
Female	4.37	.70	2-5
Males	4.29	.75	2-5
Ethnicity			
Hispanic	4.25	0.73	2-5

Table 4.4 Continued

Non-Hispanic	4.37	0.70	2-5
Unknown	3.67	1.21	2-5
Race			
AI/ AN/Other	3.83	1.33	2-5
Asian/Native Hawaiian/ Other Pacific Islander	4.13	0.64	3-5
Black	4.30	0.90	2-5
White	4.37	0.69	2-5
Two or more races	4.32	0.73	3-5
Institution Location Same as Residence			
Yes	4.34	0.77	2-5
No	4.35	0.69	2-5
First Generation Status			
Yes	4.34	0.73	2-5
No	4.35	0.70	2-5
Studied at a Prior College			
Yes	4.35	0.72	2-5
No	4.29	0.70	3-5
Prior Study in Discipline			
Yes	4.36	0.69	2-5
No	4.33	0.76	2-5
Marital Status			
Single	4.25	0.78	2-5
Married	4.38	0.69	2-5
Separated/Divorced/ Widowed	4.36	0.74	2-5
Pell Grant Eligible			
Yes	4.36	0.73	2-5
No	4.33	0.70	2-5
Unknown	4.41	0.73	3-5
Employment Status			
Unemployed, not looking for work	4.57	0.59	3-5
Unemployed, looking for work	4.22	0.94	3-5
Part time	4.33	0.75	2-5
Full time	4.35	0.70	2-5
Unknown	4.33	0.78	2-5
Age			
18–24 years	4.36	0.86	2-5
25-29 years	4.25	0.58	3-5
30-34 years	4.46	0.59	3-5

Table 4.4 Continued

35-39 years	4.46	0.65	3-5
40-49 years	4.23	0.82	2-5
50 Years or Older	4.41	0.66	2-5
Paid Work Hours			
0-20 Hours	4.43	0.77	2-5
21-30 Hours	4.33	0.89	2-5
31-40 Hours	4.27	0.70	2-5
41-50 Hours	4.52	0.69	3-5
51-168 Hours	4.32	0.68	3-5
Professional Experience (in Years)			
0-10 Years	4.35	0.69	2-5
11-20 Years	4.33	0.81	2-5
20.72-30 Years	4.40	0.72	2-5
31-43 Years	4.39	0.65	3-5

To extend this line of inquiry, I utilized two models to drive the multiple regression analysis to investigate if learners' characteristics contribute to learners' satisfaction with their decision to enroll in competency-based education. A full explanation of these two models can be found in chapter 3. Model 1 looked only at the inherent characteristics of the learners (first generation status; controls: institution type, gender, ethnicity, race). The results of the regression for model 1 were not significant (R^2= .031, F(9, 336)= 1.177, p=.309). However, the results indicate that those with unknown ethnicity were less likely to be satisfied with their decision to enroll than Non-Hispanics (β=-.664, p=.028). Model 2 looked at the inherent characteristics plus work-life characteristics of learners (Other College, Prior Study, Years of Professional Experience, Pell Grant eligibility, Employment Type). The results of the regression for model 2 were not significant (R^2= .041, F(18, 327)= .783, p=.721). However, the results

indicate that those with unknown ethnicity were less likely to be satisfied with their decision to enroll than Non-Hispanics (β=-.684, *p*=.030).

An accounting of the regression coefficients (β and standard error) for all regression models can be found in Table 4.5.

Table 4.5: Multiple Linear Regression Coefficients for Learners' Satisfaction with Decision to Enroll

	Learners' Satisfaction with Decision to Enroll	
Variables	Model 1 β (standard error)	Model 2 β (standard error)
Institutional Type (0=Public; 1 – Private/Non-Profit	.003 (.102)	.018 (.107)
Gender (0=Male; 1=Female)	.093 (.085)	.077 (.087)
Ethnicity		
Non-Hispanic	--	--
Hispanic	-.095 (.141)	-.069 (.144)
Unknown	-.664* (.301)	-.684* (.314)
Race		
AI/NA/Other	-.389 (.303)	-.489 (.312)
Asian/Native Hawaiian/Other Pacific Islander	-.255 (.256)	-.340 (.266)
Black	-.062 (.167)	-.033 (.170)
White	--	--
Two or more races	-.030 (.169)	-.030 (.175)
First Generation Status (0=Yes; 1=No)	.023 (.076)	.003 (.081)

Table 4.5 Continued

Studied at a Prior College (0=Yes; 1=No)	--	-.020 (.204)
Prior Study in Discipline (0=Yes; 1=No)	--	.018 (.083)
Pell Grant Eligible		
Yes	--	--
No	--	-.022 (.087)
Unknown	--	.121 (.155)
Employment Status		
Unemployed, Not Looking for Work	--	.239 (.177)
Unemployed, Looking for Work	--	-.122 (.181)
Part time	--	.059 (.157)
Full time	--	--
Unknown	--	.029 (.132)
Years Professional Experience (1=10-20 Years; 2 = 11-20 Years; 3 = 21-30 Years; 4 = 31-43 Years)	--	.024 (.052)
Intercept	4.308 (.118)	4.259 (.165)
R^2	.031	.041
R^2 adjusted	.005	-.011
F test	1.177	.783

*p<.05 **p<.01 ***p<.001

Enrollment Motivators and Predicting Learner Satisfaction

Research question four examines whether enrollment motivators predict learners' satisfaction with their decision to enroll in a competency-based education

program. These analyses utilized three regression models which were each applied to the enrollment motivators to investigate the effect of each enrollment motivator on learners' satisfaction individually. Additionally, all significant enrollment motivators were run through the three models together. A full explanation of the models can be found in chapter 3.

Modality. The results of the regression for model 1 indicated one predictor explained 4.4% of the variance (R^2= .044, *F*(1, 344)= 15.985, p=.000). It was found that the modality enrollment motivator significantly predicted, with a positive effect, learners' satisfaction with their decision to enroll (β=.226, *p*=.000). The results of the regression for model 2 indicated two predictors explained 8.0% of the variance (R^2= .080, *F*(10, 335)= 2.899, p=.002). The results point to modality (β=.242, *p*=.000) having a positive effect while those whose ethnicity in unknown maintain a negative effect as compared with Non-Hispanics (β=-.728, *p*=.014) on learners' satisfaction. The results of the regression for model 3 indicated two predictors explained 9.1% of the variance (R^2= .091, *F*(19, 326)= 1.722, p=.031). The results point to modality (β=.245, *p*=.000) having a positive effect while those whose ethnicity in unknown maintains a negative effect as compared with Non-Hispanics (β=-.735, *p*=.017) on learners' satisfaction.

Learning Goals. The results of the regression for model 1 indicated one predictor explained 7.3% of the variance (R^2= .073, *F*(1, 344)= 26.962, p=.000). It was found that the learning goals enrollment motivator significantly predicted, with a positive effect,

learners' satisfaction with their decision to enroll (β=.322, *p*=.000). The results of the regression for model 2 indicated two predictors explained 10.6% of the variance (R^2= .106, *F*(10, 335)= 3.985, p=.000). The results point to learning goals (β=.242, *p*=.000) having a positive effect while those whose ethnicity is unknown maintain a negative effect as compared with Non-Hispanics (β=-.667, *p*=.018) on learners' satisfaction. The results of the regression for model 3 indicated two predictors explained 11.8% of the variance (R^2= .118, *F*(19, 326)= 2.302, p=.002). The results point to learning goals (β=.336, *p*=.000) having a positive effect while those whose ethnicity is unknown maintains a negative effect as compared with Non-Hispanics (β=-.723, *p*=.017) on learners' satisfaction.

New Career. The results of the regression for model 1 were not significant (R^2= .009, *F*(1, 344)= .027, *p*=.870). The results of the regression for model 2 were also not significant (R^2= .031, F(10, 335)= 1.074, *p*=.381). However, results indicate a significant, negative effect of unknown ethnicity (β=-.099, *p*=.029) on learners' satisfaction when compared to Non-Hispanics. The results of the regression for model 3 were again not significant (R^2= .042, *F*(19, 326)= .751, *p*=.764). However, results indicate a significant, negative effect of unknown ethnicity (β=-.681, *p*=.031) on learners' satisfaction when compared to Non-Hispanics.

Professional Goals. The results of the regression for model 1 were not significant (R^2= .004, *F*(1, 344)= 1.218, *p*=.271). The results of the regression for model 2 were also

not significant (R^2= .034, *F*(10, 335)= 1.176, *p*=.306). However, results indicate a significant, negative effect of unknown ethnicity (β=-.642, *p*=.034) on learners' satisfaction when compared to Non-Hispanics. The results of the regression for model 3 were again not significant (R^2= .044, F(19, 326)= .829, *p*=.672). However, results indicate a significant, negative effect of unknown ethnicity (β=-.659, *p*=.037) on learners' satisfaction when compared to Non-Hispanics.

Social Goals. The results of the regression for model 1 indicated one predictor explained 2.7% of the variance (R^2= .027, *F*(1, 344)= 9.664, p=.002). It was found that the social goals enrollment motivator significantly predicted, with a positive effect, learners' satisfaction with their decision to enroll (β=.163, *p*=.002). The results of the regression for model 2 indicated two predictors explained 6.2% of the variance (R^2= .062, F(10, 335)= 2.221, p=.016). The results point to social goals (β=.183, *p*=.001) having a positive effect while those whose ethnicity in unknown maintain a negative effect as compared with Non-Hispanics (β=-.675, *p*=.024) on learners' satisfaction. The results of the regression for model 3 were not significant (R^2= .072, *F*(19, 326)= 1.340, p=.156). However, the results point to social goals (β=.187, *p*=.001) having a positive effect while those whose ethnicity is unknown maintains a negative effect as compared with Non-Hispanics (β=-.708, *p*=.023) on learners' satisfaction.

Significant Enrollment Motivators – Modality, Learning Goals, and Social Goals. The final set of models looked at all significant enrollment motivators (Modality,

Learning Goals, Social Goals) and learners' characteristics to see if they predicted learners' satisfaction with their decision to enroll. The results of the regression for model 1 indicated two predictors explained 10.8% of the variance (R^2= .108, *F*(3, 342)= 13.831, p=.000). It was found that the learning goals enrollment motivator (β=.273, *p*=.000) and the modality enrollment motivator (β=.201, *p*=.000) significantly predicted, with a positive effect, learners' satisfaction with their decision to enroll. The results of the regression for model 2 indicated three predictors explained 14.6% of the variance (R^2= .146, *F*(12, 333)= 4.751, p=.000). The results point to the learning goals (β=.276, *p*=.000) and modality (β=.216, *p*=.000) enrollment motivators having a positive effect while those whose ethnicity is unknown maintain a negative effect as compared with Non-Hispanics (β=-.742, *p*=.010) on learners' satisfaction. The results of the regression for model 3 indicated three predictors explained 15.8% of the variance (R^2= .158, *F*(21, 324)= 2.897, p=.000). The results point to the learning goals (β=.283, *p*=.000) and modality (β=.217, *p*=.000) enrollment motivators having a positive effect while those whose ethnicity is unknown maintain a negative effect as compared with Non-Hispanics (β=-.768, *p*=.010) on learners' satisfaction.

An accounting of the regression coefficients (β and standard error) for all regression models can be found in Table 4.6.

Table 4.6: Multiple Linear Regression Coefficients for Learners' Satisfaction with Decision to Enroll by Enrollment Motivators

	Satisfaction								
Variables	Model 1 β (standard error)	Model 2 β (standard error)	Model 3 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 3 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 3 β (standard error)
Enrollment Motivator									
Modality	.226*** (.057)	.242*** (.057)	.245*** (.058)	--	--	--	--	--	--
Learning Goals	--	--	--	.322 (.062)	.331*** (.062)	.336*** (.063)	--	--	--
New Career	--	--	--	--	--	--	.005 (.029)	.013 (.030)	.015 (.033)
Institutional Type (0=Public; 1 – Private/Non-Profit	--	-.027 (.100)	-.015 (.104)	--	-.005 (.098)	.012 (.102)	--	.006 (.103)	.021 (.107)
Gender (0=Male; 1=Female)	--	.120 (.083)	.106 (.085)	--	.083 (.082)	.069 (.084)	--	.096 (.085)	.080 (.088)
Ethnicity									
Non-Hispanic	--	--	--	--	--	--	--	--	--
Hispanic	--	-.097 (.138)	-.072 (.140)	--	-.165 (.136)	-.139 (.139)	--	-.099 (.142)	-.075 (.144)
Unknown	--	-.728* (.294)	-.735* (.307)	--	-.687* (.290)	-.723* (.302)	--	-.663* (.302)	-.681* (.315)
Race									
AI/NA/Other	--	-.333 (.296)	-.440 (.305)	--	-.356 (.291)	-.452 (.300)	--	-.389 (.303)	-.485 (.313)
Asian/Native Hawaiian/Other Pacific Islander	--	-.311 (.250)	-.398 (.260)	--	-.290 (.246)	-.376 (.256)	--	-.268 (.259)	-.354 (.268)

Table 4.6 Continued

Black	--	.026	.051	--	-.040	-.007	--	-.067	-.038
		(.164)	(.167)		(.160)	(.164)		(.167)	(.171)
White	--	--	--	--	--	--	--	--	--
Two or more races	--	.007	.007	--	-.051	-.044	--	-.032	-.027
		(.165)	(.170)		(.162)	(.168)		(.169)	(.175)
First Generation Status (0=Yes; 1=No)	--	.045	.023	--	.018	.001	--	.019	.000
		(.076)	(.079)		(.075)	(.078)		(.078)	(.081)
Studied at a Prior College (0=Yes; 1=No)	--	--	-.030	--	--	-.022	--	--	-.020
			(.199)			(.196)			(.204)
Prior Study in Discipline (0=Yes; 1=No)	--	--	.020	--	--	.034	--	--	.012
			(.081)			(.080)			(.084)
Pell Grant Eligible									
Yes	--	--	--	--	--	--	--	--	--
No	--	--	-.033	--	--	.002	--	--	-.020
			(.085)			(.084)			(.087)
Unknown	--	--	.133	--	--	.147	--	--	.122
			(.151)			(.149)			(.155)
Employment Status									
Unemployed, Not Looking for Work	--	--	.243	--	--	.239	--	--	.233
			(.173)			(.170)			(.178)
Unemployed, Looking for Work	--	--	-.118	--	--	-.118	--	--	-.130
			(.177)			(.174)			(.182)
Part time	--	--	.019	--	--	.053	--	--	.055
			(.154)			(.151)			(.158)
Full time	--	--	--	--	--	--	--	--	--

Table 4.6 Continued

Unknown	--	--	.030 (.129)		--	.031 (.127)	--	.--	.029 (.132)
Years Professional Experience (1=10-20 Years; 2 = 11-20 Years; 3 = 21-30 Years; 4 = 31-43 Years)	--	--	.018 (.051)	--	--	.041 (.050)	--	--	.031 (.054)
Intercept	3.410 (.238)	3.290 (.267)	3.247 (.289)	2.930 (.276)	2.871 (.293)	2.753 (.324)	4.334 (.102)	4.266 (.155)	4.201 (.208)
R^2	.044	.080	.091	.073	.106	.118	.000	.031	.042
R^2 adjusted	.042	.052	.038	.070	.080	.067	-.003	.002	-.014
F test	15.985***	2.899**	1.722*	26.942***	3.985***	2.302**	.027	1.074	.751

*p<.05 **p<.01 ***p<.001

Satisfaction									
Variables	Model 1 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 3 β (standard error)	Model 2 β (standard error)	Model 3 β (standard error)	Model 1 β (standard error)	Model 2 β (standard error)	Model 3 β (standard error)
Enrollment Motivator									
Professional Goals	.058 (.053)	--	--	--	.057 (.053)	.072 (.056)	--	--	--
Social Goals	--	.163 (.052)**	.183 (.055)***	.187*** (.057)	--	--	.042 (.059)	.050 (.062)	.047 (.064)
Modality	--	--	--	--	--	--	.201*** (.055)	.216*** (.056)	.217*** (.056)

Table 4.6 Continued

Learning Goals	--	--	--	--	--	--	.273*** (.072)	.276*** (.072)	.283*** (.073)
Institutional Type (0=Public; 1 – Private/Non-Profit	--	--	-.053 (.102)	-.034 (.106)	-.002 (.102)	.016 (.107)	--	-.046 (.098)	-.029 (.102)
Gender (0=Male; 1=Female)	--	--	.045 (.085)	.032 (.087)	.087 (.085)	.068 (.087)	--	.096 (.082)	.085 (.084)
Ethnicity									
Non-Hispanic	--	--	--	--	--	--	--	--	--
Hispanic	--	--	-.168 (.141)	-.144 (.143)	-.102 (.141)	-.075 (.144)	--	-.176 (.135)	-.149 (.137)
Unknown	--	--	-.675* (.297)	-.708* (.310)	-.642* (.302)	-.659* (.315)	--	-.742* (.285)	-.768* (.296)
Race									
AI/NA/Other	--	--	-.421 (.299)	-.498 (.308)	-.417 (.304)	-.532 (.314)	--	-.320 (.286)	-.416 (.295)
Asian/Native Hawaiian/Other Pacific Islander	--	--	-.290 (.253)	-.366 (.263)	-.252 (.256)	-.346 (.266)	--	-.344 (.242)	-.428 (.251)
Black	--	--	-.120 (.165)	-.091 (.169)	-.058 (.167)	-.022 (.170)	--	.018 (.160)	.048 (.163)
White	--	--	--	--	--	--	--	--	--
Two or more races	--	--	-.053 (.166)	-.039 (.172)	-.026 (.169)	-.025 (.174)	--	-.021 (.159)	-.012 (.165)
First Generation Status (0=Yes; 1=No)	--	--	.026 (.076)	.016 (.080)	.029 (.078)	.010 (.081)	--	.040 (.073)	.023 (.077)

Table 4.6 Continued

Studied at a Prior College (0=Yes; 1=No)	--	--	--	-.014 (.201)	--	-.028 (.204)	--	--	-.029 (.192)
Prior Study in Discipline (0=Yes; 1=No)	--	--	--	.030 (.082)	--	.028 (.083)	--	--	.036 (.078)
Pell Grant Eligible									
Yes	--	--	--	--	--	--	--	--	--
No	--	--	--	.021 (.087)	--	-.020 (.087)	--	--	-.001 (.083)
Unknown	--	--	--	.130 (.153)	--	.108 (.155)	--	--	.156 (.146)
Employment Status									
Unemployed, Not Looking for Work	--	--	--	.230 (.174)	--	.287 (.181)	--	--	.240 (.167)
Unemployed, Looking for Work	--	--	--	-.082 (.179)	--	-.094 (.183)	--	--	-.105 (.171)
Part time	--	--	--	.041 (.155)	--	.078 (.158)	--	--	.015 (.149)
Full time	--	--	--	--	--	--	--	--	--
Unknown	--		--	.016 (.130)	--	.052 (.133)		--	.028 (.125)
Years Professional Experience (1=10-20 Years; 2 = 11-20 Years; 3 = 21-30 Years; 4 = 31-43 Years)	--	--	--	.044 (.052)	--	.024 (.052)	--	--	.037 (.050)
Intercept	4.097 (.232)	3.675 (.220)	3.638 (.231)	3.510 (.279)	4.064 (.256)	3.941 (.298)	2.1343 (.350)	2.017 (.360)	1.908 (.387)

Table 4.6 Continued

R^2	.004	.027	.062	.072	.034	.046	.108	.146	.158
R^2 adjusted	.001	.024	.034	.018	.005	-.009	.100	.115	.104
F test	1.218	9.664**	2.221*	1.340	1.176	.829	13.831***	4.751***	2.897***

*p<.05 **p<.01 ***p<.001

College Choice Process

Research question five seeks to understand the college choice process for those who chose a competency-based education program. This question was answered through six open-ended survey questions, designed to explore the stages of the college choice process including the search process and the decision factors which influenced learners' enrollment in a competency-based education program. I coded the learners' responses manually and then ran word frequency queries utilizing Nvivo, a software program that analyzes unstructured data, to increase the validity of the results. Owning to the open-ended nature of these six questions, learners' responses could appear in multiple categories, therefore the frequency counts will not add up to the study N (346).

The first open-ended question asked students to explain if there was anything specific that made them decide they wanted to go to or return to college before they enrolled in their competency-based education program. The top reason uncovered in the coding process was career advancement (199), followed by personal goals (77), and the desire to have a degree (50). A full frequency listing from the manual coding can be found in Table 4.7.

Table 4.7: Question one: "Was there anything specific that made you decide you wanted to go to or return to college before you enrolled in your competency-based education program?"

Theme	Categories	Quote of Support	Frequency N
Personal Attributes	Predisposition/ Personal Background	"I am mostly self-taught. Distance education seemed like the perfect fit for my learning skills."	5
	Personal Goals	"I have always wanted to achieve a bachelors; to say I am a college graduate."	77
	Perceptions of self	"I felt like a hypocrite telling my children to attend college when I was a college dropout."	35
	Means	"My husband pushed me to get it, and my job is offering tuition reimbursement. So it felt like the right time."	24
	Enabling Circumstances	"Yes, I started out in college going for my teaching degree, but had to stop it since I ended up with a family and had to go to work full-time to help support us. Now that I can return to school online, it fits with my schedule."	28
	Transition Straight from High School	"I began classes online at [institution] shortly after graduating high school, I didn't have a large gap."	3
	No Reason	"Nothing."	4
Academic/ Institutional Fit	Institutional Fit/Institutional Treatment of Non-traditional Students	"I was already a student at a traditional brick and mortar institution. As a military spouse, I decided that [institution] and its CBE platform was best suited for my need for mobility."	27

Table 4.7 Continued

	Academic Experiences	"I already had a degree, just not in IT. The school provided certifications I didn't have in the course of study. I didn't want to start a degree again so depending on how many credits transferred would give me my answer. I wasn't going to retake general education classes again."	13
	Social Experience	"I wanted to learn more in my field and my employer reimbursed tuition. My friends encouraged me to enroll in a community college to earn my AA."	5
	Degree	"I really wanted a degree."	50
Career Advancement	Compelling Circumstances	"I was recently promoted to a transitional position in which I am training for the next level. I am required to have my degree for the next promotion."	41
	Career Advancement	"I missed a chance for a promotion at work because I didn't have my degree."	199

Triangulation of data through the use of multiple methods of data analysis increase validity in qualitative research (Golafshani, 2003). To increase validity of these interpretations of open-ended data, I input all responses into NVivo, a computer-aided text analysis (CATA) program, and ran a word frequency query utilizing the 100 most frequent words and synonyms was run to further investigate the themes in the responses. As Conway (2006) points out CATA programs are "best at simple word count

and less effective at more nuanced analysis" (p.195). As a straight word frequency, sentiment is not detected in this analysis, however, as shown in the word cloud (Figure 4.1), common themes from the manual coding also float to the top of the word frequencies in wanted degree, job, and work.

Figure 4.1: Word Frequency "Was there anything specific that made you decide you wanted to go to or return to college before you enrolled in your competency-based education program?"

The second open-ended question sought to understand where learners began their search to start or return to college. The overwhelming top starting point revealed in the content analysis was online/the Internet (166). Additionally, many students also began their search through word of mouth (71), many citing colleagues as the source while others started looking at local colleges/universities (67). These results are found in Table 4.8.

Table 4.8: Question two: "Where did you begin your search to start or return to college?"

	Categories	Quote of Support	Frequency N
Word of Mouth	Word of Mouth	"The President of our university presented to the Rotary club and I couldn't believe the opportunity."	71
	CLEP	"I began with taking CLEP tests and then found out about this program."	1
	Job Related	"List of approved schools sent by employer to return to class."	17
	Advertising	"Didn't really do a general search, I had seen commercials and billboard for my college and decided to look into it."	15
	Nationally Recognized/Name Brand	"Internet, searching schools I already knew of."	2
Online/The Internet	Online/The Internet	"The internet, of course." "I began my search to go back to school originally online."	166
Institutional Related	Local Colleges/Universities	"I looked at local universities and ones in my home state."	67
	Courses/Program of Study	"I knew the field I was interested in, so I began by Googling which universities offered the program I wanted."	12
	Costs	"First I attended a AA program at [name redacted] University online and then maxed out on student loans. Then was searching for a more economical solution, which I found here at [name redacted] College."	9
	Self-Paced	"I began looking for courses that would allow me to work at my own page and something that I could afford."	2

Table 4.8 Continued

	Online Programs	"I started looking for online programs so that I could work and go to school."	20
	Prior College Experience	"I had tried three other online programs over the years, none seemed a good fit for me until I found my current program."	11

To increase validity of the data, all responses were input into NVivo and a word frequency query utilizing the 100 most frequent words and synonyms was run to further investigate the themes in the responses. As shown in the word cloud (Figure 4.2), common themes from the manual coding also appear the top of the word frequencies in online, internet, college, school, and program. Word of mouth, as reported above, is not as evident as it was a sentiment and often a combination of words/phrases which indicated this factor. In the word frequency, friends, coworkers, recommended, and talking are relatively sized and combined were parts of this factor.

Figure 4.2: Word Frequency “Where did you begin your search to start or return to college?”

The third open-ended question asked learners to share what type(s) of information they looked for in their search process. The top information factor cited by learners in this study was the cost/affordability (192) of the program and college they were considering. Frequencies from the content analysis can be found in Table 4.9.

Table 4.9: Question three: "What type(s) of information did you look for in this process?"

Theme	Categories	Quote of Support	Frequency N
Academic Attributes	Word of Mouth	"I had two professors at [community college name redacted] who spoke very highly of this program."	22
	Career Possibilities	"What went with my career goal."	25
	Program of Study	"I looked for the type of program I was interested in and they offered a program I liked."	108
	Accreditation	"A regionally accredited school that offered an online program that was reasonably priced."	60
	Credibility	"Credibility and pricing."	10
	Reputation	"Online only schools, cost, employer approved, accredited with good reputation."	24
	Rankings	"Tuition, degree marketability, customer reviews, national school rankings, accreditation, time requirements.	5
Cost/Affordability	Transfer of Credits	"Interesting classes, a good degree program, acceptance of as many credits as possible and one that would benefit from a lifetime of reading, and experience in the workplace."	36
	Cost/Affordability	"Looked for affordable, flexible online programs that were legit and had accreditation."	192
	Time to Completion	"Looked for one that could help me reach my degree in a timely manner."	74

Table 4.9 Continued

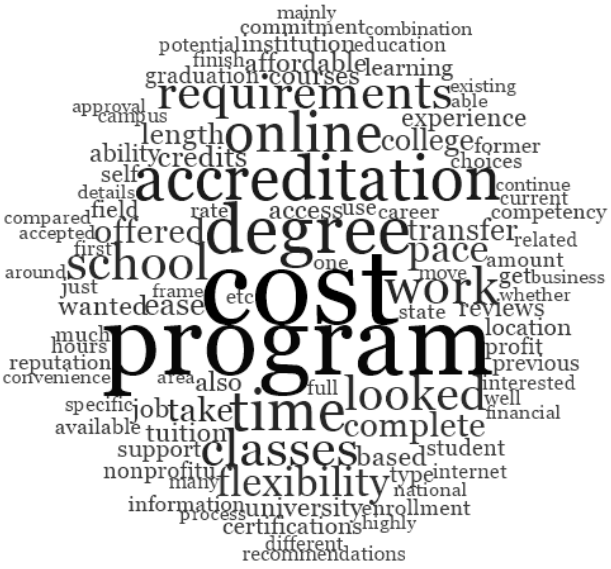
Operational Support for Adult Learners	Support at Institution	"At the beginning I was very confused if I had known about [institution] I would have enrolled here sooner. I wanted a school where I could move at a decent pace with support and someone that could help answer some of my questions."	6
	Location	"Location and other info for teaching morethan just what I am getting my degree in."	11
	Online Learning Opportunities	"All online. I have a 2 yr old and a 4 yr old that I was not crazy about the idea of having to go to class so many days a week."	71
	Enrollment/Application	"Credentials, application process, ease of transferring credits, length of degree program."	4
	Flexibility	"Flexibility to complete while continuing to work and raise 3 kids."	97
	Prior Learning Assessment	"I was looking for accredited schools that offered flexible pacing/scheduling, reasonable pricing, and opportunities to leverage my skills/experience for course credit."	4
	Nothing	"Nothing in particular."	3
	Attainable	"It was attainable, affordable, and a	8

Table 4.9 Continued

		recognized credential in my state."	
	Everything	"Everything I could get my hands on."	1

Additional analysis utilizing a Nvivo word frequency query with synonyms was performed to investigate if the word frequencies in learner's responses to question three aligned with the coding. While the word frequency (Figure 4.3) clearly puts cost and program/degree on the top of the list, it is interesting that accreditation also makes a larger appearance in the word cloud. This could be an indication that words and phrases which were combined in their sentiment, therefore I coded into one category, appear separately in the frequency account. Overall the frequency analysis supports the coding.

Figure 4.3: Word Frequency "What type(s) of information did you look for in this process?"



The fourth open-ended question asked learners to report who, if anyone, was involved in this search process with them. Overwhelmingly, learners reported that no one (188) was involved in the search process with them. Of those who did seek the support of others in the search process, spouses/significant others (73), friends (30), and co-worker/supervisor (31) were the most frequently cited confidantes. Parents were rarely consulted in this process, as would be expected with learners who are on average just over 38 years old. These data are outlined in Table 4.10.

Table 4.10: Question four: "Who, if anyone, was involved in this search process with you?"

Theme	Categories	Quote of Support	Frequency N
Independent Research	No One	"I did this independently."	188
Family	Spouse/Significant Other	"My husband was involved in this search process with me."	73
	Parents	"My parents were extremely influential and supportive of my returning to school."	9
	Sibling	"Sister."	3
	Child	"My daughter."	3
	Family	"My entire family helped."	7
Friends/Colleagues	Friend	"A very dear friend and mentor."	30
	Co-Worker/Supervisor	"One of my supervisors suggested it."	31
	Prior Students	"My cousin who graduated from [institution] as well."	5

Table 4.10 Continued

Formal Resources	Veterans/Enlisted Resources	"VA vocational rehab counselor, wife, FL career center veteran representative."	1
	Union	"SEIU my union, I used the Tuition Assistance Fund. $5250.00 is available for each school year."	1
	Retraining/Career Center	"The state agency that approved my training suggested colleges in the area and [institution] – which I would not have considered otherwise."	2
	School/University Staff	"Just enrollment counselors from a couple of schools I was deciding between."	5

Again, a word frequency query was processed in Nvivo on all responses to investigate if this analysis supported the content analysis. Upon initial query, I noticed that only "one" of the phrase "No one" appeared in the word cloud. Upon inspection of the stop words, this was because "no" was in the default stop words in Nvivo. To accurately reflect the responses, I customized the query to remove "no" from the stop word. The results (Figure 4.4) are in support of the manual coding.

Figure 4.4: Word Frequency “Who, if anyone, was involved in this search process with you?”

The fifth open-ended question inquires of learners why they chose the program they are currently enrolled in. While the question was aimed at asking about the program of study, it is unclear if all learners interpreted the question that way or if they focused more on their enrollment in general. The top cited factor was that the program was career related (141), which supports the earlier revealed decision factor of career advancement in the open-ended questions and desiring a new career in the enrollment motivators. Other key factors in this decision were that the program worked with their life (flexible/convenient) (125) and was affordable (price/affordability) (120). The most infrequently cited factor was this pursuit being a life goal for the learner. All of these can be found in Table 4.11.

Table 4.11: Question five: "Please share why you chose the program you are currently enrolled in."

Theme	Categories	Quote of Support	Frequency N
Affordability	Price/Affordability	"It was one of the few universities offering health informatics, which was new at the time, and it is the most cost effective university where you can take as many classes as you like and still pay the same fee."	120
	Time to degree (Fast, Accelerated)	"It allows me to set the pace of studies and I can complete the courses as fast as possible without having to wait in between the classes before moving on to the next course or semester."	59
Career Related	Career Related	"I chose this program because I wanted a degree that would lead to a career working with children. I wanted a career, not a job."	141
	Aligns with Skills	"Closest to my experience and skills in a management role and I enjoy showing and teaching others how to be successful at work."-	11
	Reputation	"Great reputation, cost, program design including student and class mentors, and non-profit status."	54
	Further Educational Aspirations	"It was the best fit for what I wanted to do and the masters program I want to enroll in after completion."	7

Table 4.11 Continued

Life Factors	Works with Life (Flexible, Convenient)	"It was like a glove that fit my hand perfectly. I was able to go to school to get my degree on a time schedule that worked for me. I could spend as few hours a day, or as many as I was able. When things such as my father dying happened, I was able to take a break for a week or two without consequences to my schooling. But even more important, I was able to use the knowledge I had gained in the 20 years I worked in Special Ed to help push some of the classes through faster. I didn't have to spend a few months learning about a subject I already knew well. I could spend 6 weeks on a difficult class, or 2 days on one I knew the information about already, and pass the class quickly. I didn't need the college experience at my age, I needed the education and the degree. I am a self starter, self motivated, and determined. A perfect fit."	125
	Online	"I chose this program because it was 100% online and my sister works for a college and she highly	31

Table 4.11 Continued

		recommended [institution]."	
	Life Goal	"IT has always been my dream. It started as a hobby in grade school and I studied it when I first started college, but life got in the way of finishing. So when I made the decision to go back it was easy to go back to what already knew and loved."	4

The word frequency processed in Nvivo is not as supportive of the manual coding for this question (Figure 4.5). However, it is important to remember that Nvivo word frequency queries simply count words and do not interpret sentiment. Many respondents answered this question with a large amount of text explaining why they chose the program they are enrolled in. In the coding I performed, I was able to distill these longer answers into categories, which appear in Table 4.11.

Figure 4.5: Word Frequency “Please share why you chose the program you are currently enrolled in.”

In order to investigate what learners found helpful in preparing them for a competency-based educational experience, the sixth open-ended question asked them to outline their relevant skills and experiences. The categorized responses can be found in Table 4.12. In concert with other decision factors, learners felt their career experiences were helpful in preparing them for learning in a competency-based modality. Preparation was also cited as stemming from prior learning experiences, and to a lesser extent disciplinary knowledge. Key skills learners cited were self-motivation and being an independent learner.

Table 4.12: Question six: "Which of your skills or experience were most helpful in preparing you for this educational experience? Explain."

Theme	Categories	Quote of Support	Frequency N
Prior Field Experience	Prior Learning Experiences	"I had taken online classes before so I knew what kind of work I had to do and how much discipline it took to complete on my own."	87
	Disciplinary Knowledge	"My previous knowledge in the field of nursing."	40
	Research	"I am a good researcher, and have the ability to quickly learn new ideas."	6
	Career	"The skill and experience from my years in my correct position. My job as a financial accountant allowed me to be able to use my work experience to advance in the courses that I was taking."	133
"Soft" Skills	Time Management	"General life skills as a full time executive assistant and mother. Most importantly, time management."	32
	Multitasking	"Ability to multi-task as this will require juggling an already busy schedule."	9
	Leadership	"My advancement and leadership experience within my career field."	2
	People Skills	"People skills."	3
	Study Skills	"Study skills. I have been apply them toward my other degree."	4

Table 4.12 Continued

	Logic/Reasoning/Critical Thinking/Problem Solving	"-Multitasking -Ability to work well without supervision -Logic and Reasoning"	5
	Technology Skills	"Comfort with technology. I'm comfortable multi-tasking and using multiple programs to get something done."	30
	Communication Skills	"My communication skills were helpful when it came to interacting with teachers and mentors. This has also been helpful when interacting with students."	8
	Organizational Skills	"My computer skills, my verbal and written competency, my ability to focus on a project, the maturity to self-motivate. Procrastination is not a good quality for this type of learning model, but even I was able to overcome that tendency with a little determination and calendaring."	18
	Love of Learning	"I was home schooled which gave me the drive to do work on my own. I am an independent person and work well on my own. I love to learn and am a good test taker."	6
Grit	Perseverance	"Patience and perseverance are	9

Table 4.12 Continued

		required. It's important to keep yourself motivated and to keep pressing towards your goal."	
	Focus	"Ability to focus on a task: [Institution] classes are consecutive allowing me to focus on one subject at a time."	2
	Life Experiences	"My experience in my work was valuable, as I got real world exposure to the subjects in the books. This helped me draw useful connections between the concepts and the theory. Additionally, my work encourages growth, so I found that I had knowledge in many areas I studied that I could harness. I am also in my 30's and I fancy myself a continual learner, so my experiences in life and self taught knowledge allowed me to bring quality real world examples to my tests."	31
	Self-Motivation	"My ability to self start and seek out new knowledge. This has helped me stay motivated and get my school work done. My technical ability has been helpful in navigating the online courses."	52
	Independent Learner	"My quest for knowledge. I am all	37

Table 4.12 Continued

		about googling items to learn about them, watching YouTube to find interesting crafts, the Khan Academy to just learn better ways at solving problems. I'm extremely self-motivating and an autonomous learner. I want to achieve this life-long goal that I have never met, even after 20 years of trying. That alone make me motivated to finish just one more chapter each night."	

The Nvivo word frequency query for this question (Figure 4.6) reinforces the work experience coded above as career experience while also highlighting motivation, and prior education (education/school).

Figure 4.6: Word Frequency "Which of your skills or experience were most helpful in preparing you for this educational experience? Explain."

College Choice Process Conclusion

Looking across these various questions a few overarching themes appear including affordability, flexibility, connection to careers present and future, and personal attributes which contribute to success. The results of this analysis show affordability as a concept and in practice is extremely important to learners. Additionally, the concept of the synergy between learners' career and their coursework was evident throughout – with the learning being applied bidirectionally. Finally, personal attributes ranging from self-motivation and independent learning to a desire to achieve a life goal contribute to learners' experience in competency-based education. In chapter five, I'll explore the constructs, such as grit, which are fueled by these personal attributes of learners.

CHAPTER FIVE – CONCLUSIONS

Introduction

The purpose of this study was to investigate the learners' demographic and work-life characteristics, college choice process, and these learners' satisfaction with their decision to enroll in competency-based education. This study utilized a secondary analysis of survey data. This chapter will outline the overview of the study, a brief review of the methodology, discussion of the research results, practical recommendations from the study, limitations, recommendations for further research and conclusions.

Overview of the Study

Competency-based education is on the rise as a renewed modality of higher education. First implemented in the 1970s but built on principles centuries older, the contemporary implementations of competency-based education take advantage of technological advances for delivery (Nodine, 2016). As with implementations of the practice, research regarding competency-based education has also been cyclical, with a greater focus on design and policy than on learners' characteristics (Kelly & Columbus, 2016). There is little research on the college choice process of adult or non-traditional learners, even less so for competency-based education enrollees and much of what has been published focuses on community colleges (Bergerson, 2009; Broekemier, 2002;

Kortesoja, 2009; Laanan, 2003; Lansing, 2017; Morrison, 2016; NPEC, 2007; Peek & Goldstein, 1991; Perna, 2006; Roszawki & Reilly, 2005; Somers, et.al., 2006; Southerland, 2006). Competency-based education is unique in placing the focus on mastery of learning rather than the time it takes to develop that mastery (Cuckler, 2016; Everhart, Bushway, & Schejbal, 2016; Gervais, 2016; Kelchen, 2015, Sebesta, 2016, Thackaberry, 2016). In relation to college choice, while there have been institutions offering competency-based education since the 1970s, only in the last five years has it regained national attention (Fain, 2016; Fain, 2015; Fleming, 2015; Kelchen, 2016; Mitchell, 2015; Nodine, 2016; Public Agenda, 2015), thus it is a growing field. A full discussion of the history of competency-based education, including its many definitions, as well as the construct of college choice can be found in the literature review in Chapter Two.

Methodology

This study utilized a quantitative analysis of secondary survey data I collected in 2016. The survey consisted of 27 close-ended questions and 6 open-ended questions regarding a range of topics from learner demographics to work experiences and the learners' college search process. The survey was distributed via a Survey Monkey (www.surveymonkey.com) link to 5,142 learners across four higher education institutions (three public, one private/non-profit). The survey was distributed to all learners enrolled in the programs at participating public institutions (1,142) and

garnered a 5.95% response rate (68 responses). The survey was distributed to a demographically representative sample of learners at the private/nonprofit institution (4,000) and garnered an 8.82% response rate (353 responses). The surveys were distributed between July 2016 – October 2016 due to varying approval times by the Institutional Research Boards at the participating institutions. A full discussion of the survey methodology can be found in Chapter 3.

The analyses were run utilizing SPSS™, NVivo, and human coding. Descriptive statistics, ordinary least squares regressions, and quantitative content analysis were conducted to explore the following research questions:

1. What are the characteristics of competency-based education learners?
2. Do characteristics of competency-based education learners predict enrollment motivators?
3. Do characteristics of competency-based education learners predict satisfaction with their decision to enroll?
4. Do the enrollment motivators predict competency-based education learners' satisfaction with their decision to enroll?
5. What is the college choice process for competency-based education learners?

A full discussion of the statistical techniques utilized can be found in chapter 3.

Discussion of the Research Results

This section will focus on a discussion of the results of conducted analyses and how they answer each of the research questions. The discussion will be arranged by research question, as chapter 4 was, for continuity of format. Relevant literature will be highlighted as it relates to the analysis of these data.

Research Question #1

What are the characteristics of competency-based education learners?

This research question was explored via descriptive statistics. A full discussion of the results can be found in chapter 4 however in this section I will highlight a few salient points. Taking a composite view of these data, the typical competency-based education learner is a nearly 39-year-old (*M*=38.78, *SD* = 10.03), married (66.2%), white (84.4%), Non-Hispanic (89.6%) female (70.2%) who has been out of high school for just over 20 years (*M*=20.72, *SD*=10.25). She lives in a different location than her current institution (68.5%) and has studied at a prior college (95.7%), including study in her current discipline (61%). She is slightly less likely to be a first-generation student (51.2%) than she is to be the first in her family to go to college. She is also more likely to be eligible for a Pell Grant (48.8%) than not. She is employed full time (71.4%), works an average of 38 hours a week and has worked for nearly 10 years (*M*=9.63, *SD*=9.28) in her field of study. A visual representation of this composite profile can be found in Figure 5.1.

Many of these data are consistent with Clinefelter and Aslanian's 2017 study of online college students. They found their students to be a majority white (63%), a majority female (75%), and enroll full-time in college (64%) while also working full-time (49%) (Clinefelter & Aslanian, 2017). Additionally, in his 2016 study of enrollment in competency-based education programs, Kelchen (2016) found that 65% of the undergraduate students in his nine institutions were white, and 55% were female. This is comparable to the findings of the current study. The fact that many of the students, in all of these studies, were female could be indicative of the actual population of competency-based education enrollees, or it could be that females are more likely to respond to online surveys as was found by Smith (2008).

Parsons, Mason & Soldner (2016) found that 70% of competency-based education enrollees in the institutions they studied had prior college experience. The results of this study indicate an increase in this, which may be due to difference in the institutions studied or could be due to increased marketing to learners promoting degree completion for those with some college and no degree.

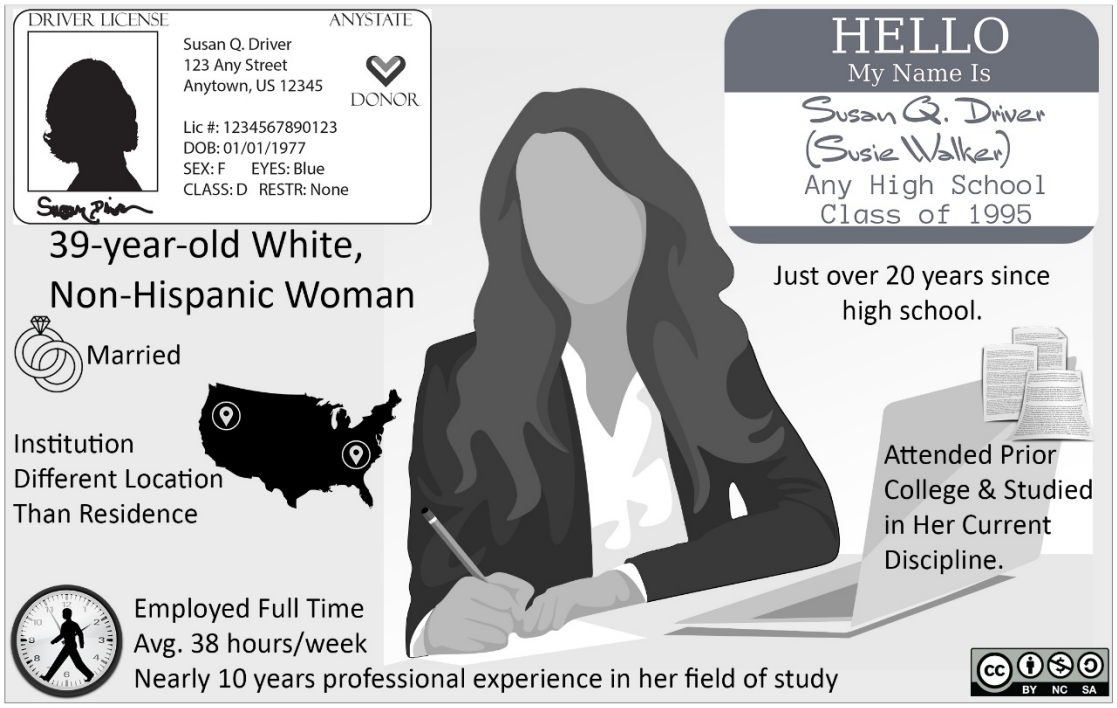
Additionally, these results indicate that the majority of the learners work full-time while attending school. Carnevale, Smith, Melton, and Price (2015) note that the "contemporary "average" student works" (p. 20) and though this was written right as the economy was making a recovery, the authors do not feel more students working is a "response to cyclical economic factors" (p.20). Stevens (2014) also found that 81% of the learners in his study of perceptions, attitudes, and preferences of adult learners

report they work 40 hours a week or more. Working while learning signals the flexibility of competency-based education and the ability to apply their experiential learning to their academic studies as important. This finding is supported by the internal campus /academic environment elements outlined in Bergman's (2012, p.20) model of adult learner persistence in degree completion programs which include flexible course options and prior learning assessment. Bergman, Rose, and Shuck (2015) further support these elements as important to adult learners through an examination of relevant literature in validating Bergman's 2012 model. This finding is additionally reinforced, and discussed further, by learners' responses in research question five.

Another interesting finding from this analysis is that 8.1% of respondents do not know if they are eligible for a Pell Grant. A possible explanation for this is that the complexity of completing the Free Application for Federal Student Aid (FAFSA) has been shown to prevent learners from applying and even attending college (Dynarski & Wiederspan, 2012). The process and benefits of Pell Grants and other financial aid are not well communicated to adult learners according to Bowers and Bergman (2016), which could also be a contributing factor to those students not knowing and/or applying for federal financial aid. The data on Pell Grant recipients (48.8%) in this study is slightly higher than that which Kelchen (2016) reported for several institutions (ranging between 42-44%) but is not alarmingly higher, especially considering the data he used were from 2013, therefore collected three years prior to these data.

There is one additional interesting finding I would like to highlight – 68.5% of these learners live in a different location than their institution, likely attributable to the online nature of these programs. This is contrary to prior research. Burdett (2013) and Turley (2009) both found that proximity to the institution was a determining factor for their populations, however, their studies focused on traditional-aged learners. Furthermore, the prior research (Burdett, 2013 and Turley, 2009) did not account for distance learning as an opportunity available to students.

Figure 5.1: Composite View of the Competency-based Education Learner



Research Question #2

Do characteristics of competency-based education learners predict enrollment motivators?

A series of multiple linear regression models were estimated to examine the relationships between learners' characteristics and work-life experiences on each of five enrollment motivators. The motivators included modality, learning goals, new career, professional goals, and social goals. The first model looked only at demographic characteristics inherent to the student, whereas, the second model added the work-life characteristics of these learners. For the modality, or learners' preference to learn online or face-to-face, enrollment motivator, neither model was significant, indicating that the learners' characteristics do not predict this motivator. Learning goals, or a learners' desire to become more knowledgeable, was also not significant for either model, indicating the learners' characteristics were not predictive.

For the new career motivator which focuses on a learners' wish to try a new career, both models were significant. In both models, it was found that those identifying in the Asian/Native Hawaiian/Other Pacific Islander race category were more likely to be motivated by new career possibilities than whites. Perhaps more interesting though are the other variables which influence the new career motivator – prior study in the discipline and years of professional experience. Those with prior study in the discipline are more likely to be motivated by a new career. This aligns with Thomas (2001) who found that reentry college women, those who had not completed their higher education in the traditional timeframe and are pursuing it later, were motivated to return by career advancement possibilities. Years of professional experience was found to have a negative relationship with the new career motivator. I interpret this as

the longer the professional experience, the less likely the learner is to be motivated to enroll in competency-based education by the possibility of trying a new career. This may be attributable to the ability of learners to apply college-level learning gained outside the classroom, through work or other experiences, to pursuit of a competency-based education degree (Tate & Klein-Collins, 2015).

Next, we will explore the professional goals motivator which focuses on one's current career and job security. Results indicate that demographic characteristics were not significant predictors of the professional goals motivator. The results of the second model, exploring the work-life characteristics was significant. Given the nature of this motivator, it is unsurprising the unemployed were not as motivated as those employed full time by professional goals.

The social goals motivator focuses on learners' inclination to make a difference in society and set an example by which to encourage their friends and family to pursue higher education. These results show that women are more likely to be motivated by social goals, or the desire to be the example, than are men. This desire aligns with the extant research that shows a mother's educational attainment is indicative of the educational success of their children (Atwell et al., 2007; Haleman, 2004; Yakaboski, 2010). As we build outreach regarding competency-based education, it will be important to highlight the ripple effect a mother's educational attainment has on their children, thereby reinforcing their motivation to enroll.

Additionally, Hispanics are more likely to be motivated by social goals than their Non-Hispanic peers. Similarly Vega (2017) found that encouragement from friends and family was an important factor for Latina/o transfer students. The findings that women and Hispanics are more motivated by social goals is important for the field as they indicate a pathway to increase attainment by underrepresented groups – through their social networks. These learners are motivated to pursue higher education by setting an example for those in their community, which has the dual effect of keeping these learners enrolled and encouraging new learners to enroll. Practitioners should take note of this finding and apply it in crafting programs to nurture those community connections by providing current learners with the tools to share their accomplishments.

Research Question #3

Do characteristics of competency-based education learners predict satisfaction with their decision to enroll?

Descriptive statistics and ordinary least squares regressions were utilized to investigate this research question. The descriptive statistics show that students are very satisfied with their decision to enroll in competency-based education. 88.1% of the respondents stated they are either very or extremely satisfied with their decision to enroll in competency-based education. This is consistent with the results of Rivers & Sebesta (2017) who found that 86% of graduates in the Texas Affordable Baccalaureate (TAB) program at Texas A&M University – Commerce (a competency-based education

program) were very satisfied with their educational experience. Rivers & Sebesta's (2017) research was conducted with graduates of the program, however, their learners also made a choice to enroll in the program and were ultimately satisfied with the experience they chose. Satisfaction with their decision to enroll in competency-based education is an important indicator of whether a learner will persist or not, which is important to meeting the national attainment goals put forth by former President Obama (2009) and educational investors such as Lumina Foundation (2009).

Two models of multiple regression analysis – one which investigated only demographic characteristics, the other added work-life characteristics as well - were utilized to investigate if learners' characteristics contribute to their satisfaction with their decision to enroll in competency-based education. Neither of the regression models were significant, indicating that neither learners' demographic or work-life characteristics are predictors of their level of satisfaction. This finding could be related to the fact that all learners were at least slightly satisfied, none of them indicated they were not satisfied with their decision to enroll in competency-based education. This finding is important for institutions to consider as they weigh whether or not to offer programs via competency-based education.

Research Question #4

Do the enrollment motivators predict competency-based education learners' satisfaction with their decision to enroll?

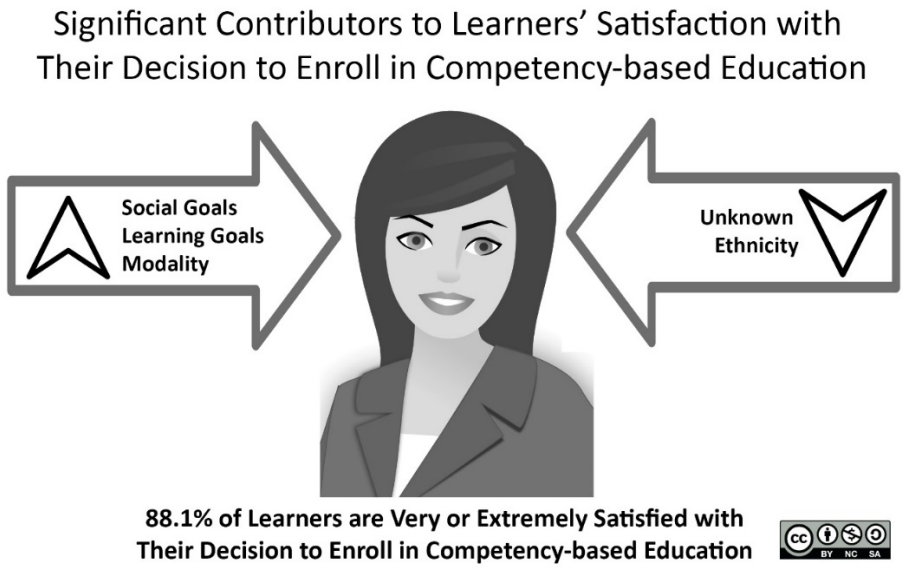
A series of ordinary least squares regression analyses were utilized to investigate whether enrollment motivators predicted competency-based education learners' satisfaction with their decision to enroll. Each enrollment motivator was investigated individually, and then significant enrollment motivators were explored together. The results indicate that the modality, learning goals, and social goals enrollment motivators significantly, positively contribute to learners' satisfaction with their decision to enroll in competency-based education. This is interesting in contrast with findings that will be discussed as part of research question five, where learners' most cited reason for returning to college as career advancement. Learners' in Stevens (2014) study also reported that "career advancement, promotion, and employability for school" (p.71) were factors influencing their decision to attend higher education. Understanding the enrollment motivators which significantly contribute to learners' satisfaction with their decision to enroll is important for competency-based education practice because attracting learners with the correct motivators could contribute to satisfaction which could lead to persistence to a degree.

Also intriguing in these analyses are the consistent appearance of unknown ethnicity having a negative effect on learners' satisfaction with their decision to enroll when compared to Non-Hispanics. This could be due to the low response number in this cell or it could have broader implications on learners' satisfaction.

In the analyses which combined the three significant enrollment motivators to determine their effect on learners' satisfaction, only two of the motivators maintained

their significant effect on learners' satisfaction – modality and learning goals. The social goals motivator's ability to predict learners' satisfaction became nonsignificant in the fully specified model. The relevance of the learning goals motivator aligns with Jaggars (2014) who found that community college students took online courses because they felt they learned better online. For competency-based educators it's important to apply these findings to keep learners' desire to be more educated at the center of teaching in this modality. Additionally, modality may maintain its significance as a predictor of satisfaction because the flexibility of the modality is perceived as a benefit as it is in online learning according to Lei & Gupta (2010). The results of these analyses have implications for practice which will be discussed later in this chapter. A visual representation of the significant contributors to learners' satisfaction with their decision to enroll can be found in Figure 5.2.

Figure 5.2 Significant Contributors to Learners' Satisfaction with Their Decision to Enroll in Competency-based Education



Research Question #5

What is the college choice process for competency-based education learners? This question was investigated utilizing a quantitative content analysis which employed human coding as well as computer-aided text analysis (CATA) to examine learners' responses to six open-ended survey questions. As a methodological reminder, responses to these questions could be coded in multiple categories. Some learners gave very detailed responses that encompassed multiple categories. This section will be arranged by question for cohesion with the prior formatting.

Survey Question 1: "Was there anything specific that made you decide you wanted to go to or return to college before you enrolled in your competency-based education program?"

The top reason uncovered in the coding process was career advancement, followed by personal goals, and the desire to have a degree. In contrast to the literature, which focuses on traditional aged college student choice processes such as Hossler & Gallagher (1987), predisposition or personal background were mentioned infrequently as a reason that made these learners decide to attend college. In the present study both the quantitative and the qualitative data point to career advancement as a reason learners' chose to enroll in competency-based education. A 2016 report from the PAR Framework, a division of Hobsons, supports career advancement as an enrollment factor for post-traditional learners (Watt & Wagner, 2016). Additionally, Merriam et al. (2007) found that when asked to indicate the main

reason for participating in adult education, learners "most commonly cite job-related motives" (p. 62).

Survey Question 2: "Where did you begin your search to start or return to college?"

The overwhelming top starting point revealed in the content analysis was online/the Internet (166). This finding is unsurprising given that these programs all operate online. This finding is supported by research from the Pew Research Center which shows that 88% of adults in the U.S. utilize the internet (Pew Research Center, 2016). Prior research on web utilization and college selection (Burdett, 2013; Christiansen, et al, 2003) also supports this study's finding that many students utilize the internet/web-based resources to gain a better understanding of the institution they are considering.

Many students (71) began their search through word of mouth, many citing colleagues as the source while others started looking at local colleges/universities (67). Beginning a search locally is supported by the work of Clinefelter and Aslanian (2017) who report that 72% of their participants live within 100 miles of a campus center for the institution they attend. Though students reported starting their search at a local college/university, this study also shows that 68.5% of respondents do not live in the same location as their institution. The present study did not inquire if that was more or less than 100 miles away – which could be an interesting question for further research.

Survey Question 3: “What type(s) of information did you look for in this process?”

192 participants in this survey declared cost/affordability of the program was what they looked for in their process. This is consistent with Clinefelter and Aslanian (2017), who showed that 61% of their respondents ranked tuition/fee information in their top three decision factors. Bergerson (2009) also indicated that learners’ college decisions are shaped by the cost and return on investment they perceive in pursuing college. Merriam et al. (2007) share “the two most often cited reasons for nonparticipation are lack of time and lack of money” (p.65). These authors also note these responses are seen as “socially acceptable reasons for not doing something” (Merriam et al., 2007, p. 65).

True to research performed by Noel-Levitz and Council for Adult & Experiential Learning (CAEL) (2011) and Ruffalo Noel Levitz (2016), 108 of the learners in the current study (*N*=97) cited availability of the program of study in which they were interested as an important factor, alongside the flexibility of the program. This desire to have a flexible program could be related to positive effect of the modality motivator on learners’ satisfaction with their decision to enroll. The flexibility they realize after enrolling could signal alignment with their motivator and result in satisfaction with their decision to enroll. Additionally, these learners sought out information on the time it will take them to complete the degree. All these findings are supported by Kasworm (2003) who found that adult undergraduates enroll in “a college that is readily accessible,

relevant to current life needs, cost-effective, flexible in course scheduling, and supportive of adult lifestyle commitments" (p.7). In a finding that will be much to the chagrin of *U.S. News & World Report,* few of these learners (*N*=5) cited consulting rankings in their information gathering phase.

Survey Question 4: "Who, if anyone, was involved in this search process with you?"

Participants in this research were overwhelmingly independent in their college search process. 188 learners reported that no one helped them in their search process. Those who did seek support in their college choice process most often sought the guidance of their spouse/significant. Other confidantes noted in the responses are friends and co-worker/supervisor. The average age of these students is over 38 years old, therefore it is not surprising that only low numbers (*N*=9) reported seeking out the help of a parent.

Survey Question 5: "Please share why you chose the program you are currently enrolled in."

This question was intended to garner responses about the academic program the learners chose, however the learners' responses indicate a different interpretation of the question. The top cited reason for enrolling is career related (*N*=141). This result could be aligned to the program of study but there is no direct evidence of this. Many learners (*N*=120) reported price/affordability as their reason for enrolling, which also

seems to depart from the intention of the question. Another large group of learners (*N*=125) reported their reason for choosing their program was because it works with their life – it's flexible and convenient which is consistent with findings in the extant research (Porter & Reilly, 2014; Rivers & Sebesta, 2016).

Survey Question 6: "Which of your skills or experience were most helpful in preparing you for this educational experience? Explain."

A large proportion of respondents (*N*=133) shared career experiences, and the knowledge, skills, and abilities built through those experiences are what prepared them best for a competency-based education program. This is consistent with Tate and Klein-Collins (2015) who shared that learners may be attracted to competency-based education program because of the ability to apply their experiential learning for college credit.

An additional theme of responses from these learners fall under grit – encompassing the categories of perseverance, focus, life experiences, self-motivation, and independence of learning. Duckworth, Peterson, Matthews, & Kelly define grit as "perseverance and passion for long-term goals" (2007, p. 1087). A smaller number of respondents reported a key trait in their enrollment decision is perseverance (9) however, it would be quite difficult to imagine grit without self-motivation (52) the highest category in this theme. Silver-Pacuill & Reder (2008) in their investigation of skills required for independent online learning note that self-directed skills are not only valuable for online learners but can promote success in these types of programs as well.

Since learners report self-motivation as an important skill in supporting their participation in competency-based education, and the programs are independent, online learning, it could be a signal for potential success in the program.

A Look at Themes from the Survey Questions. Cited in several of the responses to open-ended questions, affordability is a key issue for these competency-based education learners. It is also an issue higher education has actively been addressing since at least the Spellings Commission on the Future of Higher Education report was published in 2006 (U.S. Department of Education). Unfortunately, a decade later, Soares, Steele, Wayt (2016) point out our continued struggle with affordability. They define the root of the problem as "the absence of a convention, a widely accepted algorithm, for constructing a metric that adequately reflects the concept" (p. 58, Soares et al., 2016). From the present study, we can glean that keeping competency-based education affordable makes it a viable opportunity for these adult learners. Thinking back to Susan, whose story opened this paper, affordability was certainly a factor in her choice to pursue higher education.

Another persistent theme relates to careers – both the pursuit of new or improved careers through education or the ability of experience to support learning. In the post-traditional world, students are less likely to take a straight path through postsecondary education (McCormick, 2003). As these learners move in and out of work and learning, the ability of institutions to review experiential learning, accept

transfer credit, and accommodate the ever-changing needs of the learners will be crucial to their long-term success.

Recommendations from Study

This section will outline the recommendations stemming from the results of this study and a review of the extant literature. Perhaps the most important take away from this study is recognition that each learner's path to competency-based education is their own – they have different reasons for choosing this style of learning and the specific program they are enrolled in. This aligns with a statement from Burdett (2013) which states, "The college choice process is multi-faceted and unique to each person so understanding how individuals make that choice is complicated" (p.36). For practitioners I would recommend embracing the individuality of college choice process and providing multiple entry points for learners to engage with competency-based education. Personalization and flexibility is baked into the core of competency-based education curriculum, technology, and student support. Adding the opportunity for students to begin that mindset during their choice process will build the culture and help learners see their own potential for success in competency-based education.

The findings demonstrate the learning goals and modality motivators are predictive of learners' satisfaction with their decision to enroll. Practitioners can use this knowledge to reconsider the messaging they build around competency-based education to put greater emphasis on this learning pathway as one that builds

knowledge – not just one which recognizes prior learning or is wholly vocationally focused. As a community supporting competency-based education, we need to put students desire to become a more knowledgeable person both in general and in their discipline, at the center of our practice and promotion. As Jirgensons (2015) previously expressed:

> Criticism has been made of direct assessment that it is too business orientated. Its focus is on vocational skills, rather than on higher level cognitive skills that encourage creativity and innovation. While it makes sense to prepare students for the job market and for universities to form collaborative relationships with employers, students require more than just skills, they need to be flexible and creative to manage and stay on top of a dynamically changing society. We cannot foresee future job requirements, but we can help students to deal with change. (p. 145)

In the present study, learners' responses regarding the importance of the new career motivator are contradictory. In the descriptive statistics on enrollment motivators, new career has the lowest mean score (M=3.23, SD=1.32) of all of the motivators. There was also no statistical significance for the new career motivator being predictive of a learners' satisfaction with their decision to enroll. However, on the open-ended responses it was the number one reason cited for their decision to start or return to college in a competency-based education program. What this indicates for practitioners is that the current developed messages which focus around competency-based education being a tool to new career development are resonating with learners and should not be jettisoned, but perhaps enhanced. Enhanced messages would blend the importance of building a broad knowledgebase to level up or rise to a new level in one's career or to contribute to society in a new way. This is in accord with my prior

research on this data (Morrison, 2017) which recommended that practitioners include allusions to the quality and rigor of the learning in addition to the potential for career enhancement.

Another key element influencing these learners' college choice process was the affordability of the programs they enrolled in. Those costs are reflective not only of the direct costs for tuition, fees and books, but also the opportunity costs which occur when a learner pursues higher education. Liberal transfer policies which allow learners to apply their earned credit and prior learning assessment toward their competency-based education programs will help learners achieve completion in a timelier manner. However, to make this happen practitioners need the sensible policy reform which allows learners to mix enrollment types and be eligible for federal financial aid. It is my recommendation that provisions for competency-based education operation, in all its various formats, be considered in the next reauthorization of the Higher Education Act of 1965.

Finally, it is important for practitioners to recognize competency-based education learners are a diverse population – though on average these leaners were nearly 39 years old, the range was from 18 – 70. They do not all fit into the bucket of 'adult learners.' The programs appeal to both those coming out of high school and those with 20 or more years of experience in their profession. Making blanket statements about these learners, and forming policies based on generalities which affect their ability to access this modality of learning is harmful to the learner and to our

institutions. In order to promote a deeper understanding of the learner characteristics of competency-based education learners, it is my recommendation that the National Center for Education Statistics (NCES) update its data collection to allow institutions to indicate which of their students are pursuing their degrees through competency-based education as they did for online education within the last decade. This will not only facilitate better practice, it will facilitate better research.

Limitations

There are several limitations to this study I will address in this section. First, as mentioned in chapter one, this research is limited by being a secondary data analysis, which negated the ability to change any of the survey methodology, recruitment of participants or the survey instrument. Further, while participation of four institutions produced compelling results, they are not generalizable to the entire ecosystem of competency-based education.

The results of the survey may also have been influenced by individual respondents' interpretations of what the question was asking. For instance, the open-ended question intended to understand the program of study, based on its responses, may have been interpreted as the overarching program not their specific disciplinary study. Additionally, there was a question contained in the survey which stated, "I prefer student-instructor interaction." The analysis of these data showed this item to be nearly evenly bimodal for strongly disagree and strongly agree which indicated learners

had two distinct interpretations of what this was intended to measure. These responses were excluded from further analysis.

Further, it is plausible that the learners at these four institutions were influenced by the media climate regarding competency-based education. At the time the survey was distributed there were messages in the popular media of positive reinforcement that competency-based education is a wave of the future. Additionally, in prior research (Morrison, 2016) through a content analysis of marketing materials and promotional videos, I found the themes promoted were reflective of the learners in that study. It is conceivable that though only a small number cite advertising/marketing in their open-ended responses, these learners were influenced by the marketing messages of the institutions they enrolled in, both prior to enrolling and as matriculated students.

Recommendations for Further Research

The first recommendation for further research relates to the earlier mentioned recommendation that the National Center for Education Statistics (NCES) add functionality to the Integrated Postsecondary Education Data System (IPEDS) that would allow for institutions to track their competency-based education learners separately, as they do their online learners. Once this data is collected, I would recommend there be annual evaluations of demographics, enrollments patterns and degree completions akin to the work that the Online Learning Consortium, WCET, and Babson Research Group have done previously.

Additionally, future research should extend the application of the enrollment motivation survey to a greater number of competency-based education enrollees to strengthen the model. Developed at the University of Wisconsin – Milwaukee National Research Center for Distance Education and Technological Advancements (DETA), this research is the first to validate it through student surveys and analysis.

Finally, to more fully understand competency-based education learners, their motivations for going or returning to college in this format, and how they made their college choice, deeper qualitative research is warranted. Understanding the stories, the use cases and purpose learners possess supports better curricular design, better policy implementation and helps us, as practitioners, remember that our students have lives outside our virtual classrooms – they have stories. Quantitative data regarding that which can be captured in 0s and 1s draws the outlines, but qualitative data adds the color. As Lewis (2011) stated, "Story is central to human understanding—it makes life livable, because without a story, there is no identity, no self, no other" (p. 505).

Conclusions

Results from this study show that competency-based education learners choose to enroll in this type of program for a variety of reasons, including a strong proclivity to launching new careers and a desire to find an affordable program. They are motivated to enroll by learning goals, or their desire to become more knowledgeable both in general and in their specific area of study, as well as professional goals which focus on

advancing learners' current career, being more marketable to future employers, and increasing their job security. However, only the learning goals and modality (preference to learn online or face-to-face) enrollment motivators influence learners' satisfaction with their decision to enroll.

This study adds to the growing literature regarding competency-based education, the learners who chose this method of learning, as well as the literature around college choice processes for students who fall outside of the traditional-aged student parameters. As an advocate of the power of story, I will conclude this manuscript with a quote from a participant as s/he explains why s/he chose competency-based education:

> "It was like a glove that fit my hand perfectly. I was able to go to school to get my degree on a time schedule that worked for me. I could spend as few hours a day, or as many as I was able. When things such as my father dying happened, I was able to take a break for a week or two without consequences to my schooling. But even more important, I was able to use the knowledge I had gained in the 20 years I worked in Special Ed to help push some of the classes through faster. I didn't have to spend a few months learning about a subject I already knew well. I could spend 6 weeks on a difficult class, or 2 days on one I knew the information about already, and pass the class quickly. I didn't need the college experience at my age, I needed the education and the degree. I am a self starter, self motivated, and determined. A perfect fit."

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APPENDICES

APPENDIX A

EMAIL REQUEST TO LEARNER PARTICIPANTS

APPENDIX A:

Subject Line: What Motivated You to Enroll in <Competency-based Education Institution>?

Hello!
My name is Cali and I'm working on an education doctorate. I'm really interested in how learners choose their college program, specifically competency-based ones like you're enrolled in at <Competency-based Education Institution>.

I'm writing today to ask you to take a survey about what motivated you to enroll at <Competency-based Education Institution> and how you searched for and ultimately chose that program. To be upfront, I think it will take you about 30 minutes to complete the survey, and due to restrictions of being a graduate student and a small grant I have, I am not able to offer financial incentive for participating in the survey. But, as I did many times as both an undergraduate and graduate student, I considered the time it took me to complete surveys both a form of 'pay-it-forward' knowing that I would possibly need people to participate for me later and a time to reflect on my own journey related to the survey questions.

If you choose to participate, you will be asked to digitally sign an informed consent, which outlines all of the research procedures, before you can answer any survey questions. In short, it tells you that your participation is voluntary, I will protect any personally-identifiable information you provide and gives you the details to remove yourself from the research at any time.

This research will be used for my dissertation and to help the higher education community understand why and how students like you chose a CBE program so that we can make changes to better serve you and students like you.

If you choose to participate, here is the link: <Personalized Survey Monkey Link for Institution>.

Thanks in advance for sharing your time and experience with me,

Cali
Cali M.K. Morrison, Doctoral Student Researcher
Montana State University

APPENDIX B

COLLEGE CHOICE AND COMPETENCY-BASED EDUCATION

LEARNER MOTIVATIONS SURVEY

College Choice & Competency-based Education Learner Motivations

Thanks for coming by...

I'm Cali and I'm working on an education doctorate. I'm really interested in how learners choose their college program, specifically competency-based ones like you're enrolled in that aren't tied to time, but rather to learning. I am originally from Kentucky but I've been living in Montana for 15 years and I love it. It's cold but beautiful. I have 200 lbs of dog (a Saint Bernard and a lab mix) and two girls (5 & 2 years old), a hubby with a small business, and I work in educational technology. I volunteer in my community mentoring young women. It's a busy life but fulfilling and I wouldn't change it.

I am so appreciative that you are here and just wanted to let you get to know me a little.
The knowledge developed out of this research will be shared with the higher education community to help improve competency-based education programs.

So you can see I'm a real human, that's my family this winter, including the fur babies.

* 1. SUBJECT CONSENT FORM FOR PARTICIPATION IN HUMAN RESEARCH AT MONTANA STATE UNIVERSITY

College Choice & Competency-based Education Learner Motivations

Cali M.K. Morrison, Doctoral Student Researcher
cali.morrison@msu.montana.edu / 406-580-5894

You are being asked to participate in a research study designed explore the experience of the college choice process for learners who chose a competency-based higher education program. Results from this study may provide a better understanding of the college search and selection process. Data will be collected through an online survey which follows this consent form. This data will be analyzed with that obtained from other study participants to identify common experiences and themes.

If you agree to participate in this study you will be asked to complete a survey regarding the college choice process you undertook to choose the program in which you are currently enrolled and what motivated you to enroll in the program.

Your participation in this research is voluntary. You are free to stop participating in the research at any time, or to decline to answer any specific questions. If you have any questions, at any time before, during or after the research, please ask the researcher. Your participation in this research study is confidential. Any information that could identify you personally (for instance, your name and email on this consent form), will be removed from the data before it is analyzed and only the research team will have access to that data. If information you disclose is uniquely identifiable, this information will not be disclosed. Any identifiable institutional information provided will be de-identified as well to help protect your anonymity. There are no foreseen risks to participation in this research study.

If you have any questions regarding this research project you can contact me at 406-580-5894. Any additional questions about the rights of human subjects can be answered by the Chair of the MSU Human Subjects Committee, Mark Quinn, (406) 994-4707, mquinn@montana.edu.

AUTHORIZATION: *I have read the above and understand the discomforts, inconvenience and risk of this study. I agree to participate in this research. I understand that I may later refuse to participate, and that I may withdraw from the study at any time by contacting Cali Morrison at cali.morrison@msu.montana.edu or 406-580-5894.*

Name

Email Address

College Choice & Competency-based Education Learner Motivations

Learner Characteristics

Please tell me a little about yourself.

2. Which restroom do you choose?

- ◯ Men
- ◯ Women
- ◯ Prefer Not Answer

3. When is your birthday?

	DD	MM	YYYY
Birthday		/ /	

4. Do you identify as Hispanic?

- ◯ Hispanic
- ◯ Non-Hispanic
- ◯ Unknown

5. With which race do you identify?

- ◯ American Indian or Alaska Native
- ◯ Asian
- ◯ Black or African American
- ◯ Native Hawaiian or Other Pacific Islander
- ◯ White
- ◯ Two or more races
- ◯ Unknown

6. What state do you currently live in?

7. Do you currently live in the same state as your institution?

- ◯ Yes
- ◯ No

8. What was the highest school completed by your mother or parent 1?

- ◯ Middle school/Jr. High
- ◯ High School
- ◯ College or Beyond
- ◯ Unkown
- ◯ Other (please specify)

9. What was the highest school completed by your father or parent 2?

- ◯ Middle school/Jr. High
- ◯ High School
- ◯ College or Beyond
- ◯ Unkown
- ◯ Other (please specify)

10. How many years has it been since you last attended high school?

11. Have you ever studied at a different university or college?

- ◯ Yes
- ◯ No

12. How many years has it been since you first attended college?

13. Had you ever taken college courses in this field before beginning your current program?

- ◯ Yes
- ◯ No

14. What is your marital status?

- ◯ I am single
- ◯ I am married
- ◯ I am separated
- ◯ I am divorced or widowed

15. What was your (and spouse's) adjusted gross income last year?

16. Are you eligible for or have you received a Pell grant?

- ◯ Yes
- ◯ No
- ◯ Don't know

17. What is your employment status?

- ◯ Unemployed, not looking for work
- ◯ Unemployed, looking for work
- ◯ Part-time
- ◯ Full time
- ◯ Other (please specify)

18. How many hours do you work per week on average?

19. How many years have you worked in a job related to your current field of study?

20. What is your enrollment status?

- ◯ Less than part time
- ◯ Part-time
- ◯ Full time
- ◯ Overload
- ◯ Don't know
- ◯ Other (please specify)

21. How many credits (or competencies) have you completed in the last six months?

22. What is your current overall GPA? (If applicable)

23. What is your GPA in your major? (If applicable)

24. How far along in your degree completion are you?

- ◯ 0-25%
- ◯ 26-50%
- ◯ 51-75%
- ◯ 76-99%
- ◯ 100%

25. How many credits have you completed towards your degree?

College Choice & Competency-based Education Learner Motivations

Enrollment Motivation

Please respond openly and honestly to these questions. There is no right answer, it just helps me understand why you chose the program you are currently enrolled in.

26. Please rate the following items on the degree to which they reflect YOU.

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I like to control the course pace and time of learning activities.	○	○	○	○	○
I prefer traditional, face-to-face class meetings.	○	○	○	○	○
I prefer student-instructor interaction.	○	○	○	○	○
I would prefer to work at home or remotely than have to drive to campus.	○	○	○	○	○
I want to become a better person.	○	○	○	○	○
I believe this program will help me grow as a person.	○	○	○	○	○
I hope to improve my problem solving ability.	○	○	○	○	○
I want to learn as much as I can on this topic.	○	○	○	○	○
It is important for me to generally become more knowledgeable.	○	○	○	○	○
I want to try a new career.	○	○	○	○	○
I hope to advance in my current career.	○	○	○	○	○
I believe it will make me more marketable to future employers.	○	○	○	○	○
I want to increase my job security.	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Continuing my education is one of my personal goals.	○	○	○	○	○
I want to apply my previously earned credits toward a degree.	○	○	○	○	○
I hope it will be a stepping stone to a more advanced degree program.	○	○	○	○	○
I want to use the things I learn to help others.	○	○	○	○	○
I believe it will help me make a difference in society.	○	○	○	○	○
I want to provide a good example for my friends and family.	○	○	○	○	○
I want to encourage my friends and family in their current studies.	○	○	○	○	○
My friends and family expect me to continue my studies.	○	○	○	○	○

College Choice & Competency-based Education Learner Motivations

The College Choice Process

These open-ended questions will help me understand the process you embarked on to find and ultimately enroll in the program you are currently enrolled in. Please remember, any personally identifiable information will be removed before these data are analyzed, including institutionally identifiable information, to ensure your confidentiality.

27. Was there anything specific that made you decide you wanted to go to or return to college before you enrolled in your competency-based education program?

28. Where did you begin your search to start or return to college?

29. What type(s) of information did you look for in this process?

30. Who, if anyone, was involved in this search process with you?

31. Please share why you chose the program you are currently enrolled in.

32. Which of your skills or experience were most helpful in preparing you for this educational experience? Explain.

33. How do you feel about your decision to enroll in your competency-based education program?

- ◯ Not at all Satisfied
- ◯ Slightly Satisfied
- ◯ Moderately Satisfied
- ◯ Very Satisfied
- ◯ Extremely Satisfied

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Exit

College Choice & Competency-based Education Learner Motivations

THANK YOU for completing my survey!!! If you have any questions regarding this research project you can contact me at 406-580-5894. Any additional questions about the rights of human subjects can be answered by the Chair of the MSU Human Subjects Committee, Mark Quinn, (406) 994-4707, mquinn@montana.edu.

Done