



Brigham Young University  
BYU ScholarsArchive

---

Theses and Dissertations

---

2021-08-06

## Student Retention and Persistence in Certificate-First Programs

M. Troy Martin

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the Education Commons

---

Student Retention and Persistence in Certificate-First Programs

M. Troy Martin

A dissertation submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Randall S. Davies, Chair  
Royce M. Kimmons  
Timothy J. Newby  
Richard E. West

Department of Instructional Psychology and Technology  
Brigham Young University

Copyright © 2021 M. Troy Martin

All Rights Reserved

## ABSTRACT

### Student Retention and Persistence in Certificate-First Programs

M. Troy Martin

Department of Instructional Psychology and Technology, BYU  
Doctor of Philosophy

This research study consists of three separate articles and explored the effect that earning professional certificates has on student confidence, motivation, and persistence. For this study, the focus was on student motivation and persistence of nontraditional students who seek to earn a bachelor's degree despite considerable obstacles and challenges. Specifically, this study evaluated the matriculation rates between two cohorts of students who participated in the online PathwayConnect program. The first cohort received encouragement to complete the program and apply for an online bachelor's degree program at BYU-Idaho. The second cohort also encouraged to apply to an online program, but only after earning a professional certificate in their desired focus of study. The mixed-method study that included 40 former students, found that matriculation rates for students who earned a certificate increased over those who followed a traditional path. The research suggested that earning a certificate provided a lift in student confidence and motivation as the significant contributing factors to the positive change. Institutions seeking to improve matriculation rates and student persistence might consider providing professional certificates programs in addition to current academic offerings.

Keywords: student motivation, persistence, certificates, matriculation

## ACKNOWLEDGEMENTS

I am grateful for the opportunity to have participated in the BYU Instructional Psychology and Technology program for the past few years. I'm incredibly thankful to the entire faculty for their love of teaching and how they have supported and mentored me along the way. I'm particularly appreciative to all those who served on my committee and made my work the best it could be. Each committee member shared their unique skill set and perspective with my research, and each of them demonstrated persistence and patience with me. I am especially grateful for the opportunity to work with Dr. Randy Davies and appreciate his patience and friendship during this journey.

Special thanks to my friend and professional mentor, Kelly Flanagan, for gently suggesting to me that I may benefit spiritually, professionally, and intellectually by pursuing a doctorate degree. While there were many moments when I severely questioned his counsel, I look back now and see that he was indeed correct. This journey has blessed my life in all the ways he promised, and I also learned to view the world through a new lens and with new tools. I have learned for myself how to ask questions and find truth.

Lastly, I'm grateful to my wife, Rebecca, for her encouragement and support to "keep going" and reminding me that "this, too, shall pass." I am grateful to have her by my side as we continue a wonderful life together. I am the first in my family to earn this degree, and I hope—no, I invite my children to do the same. I know that whatever level of knowledge and intelligence we gain will help us in this life and the world to come.

## TABLE OF CONTENTS

TITLE PAGE .....	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	viii
DESCRIPTION OF RESEARCH AGENDA AND STRUCTURE OF THE DISSERTATION .	ix
Research Questions.....	x
Summary of Dissertation Findings and Implications.....	xi
ARTICLE 1: Extended Literature Review .....	1
Introduction.....	2
Shifts in Postsecondary Education.....	3
Important Definitions.....	5
Gaps in Understanding the Challenges.....	5
Students Struggle to Transition Into and Complete Higher Education.....	6
General Education Contributes to Problems With Retention and Persistence .....	8
Nontraditional Students Experience Unique Challenges in Universities .....	10
Attrition Models Fail to Reflect the Needs of Nontraditional Students.....	14
Community College Students Transferring to University .....	15
Online Learning and Distance Education Students .....	15
First-Generation Students Online .....	16
Part-Time Students Online.....	17
Massive Open Online Courses (MOOCs).....	18

Research Gaps.....	18
The Potential Benefits of Modern Credential Programs for Students and Universities .....	19
Credentialing Programs May Improve Motivation and Persistence .....	21
Early Program Selection Improves Persistence Rates .....	22
Certifications May Improve Educational Outcomes for Students .....	23
Credentialing Programs May Better Appeal to GED Holders.....	24
Certificate-First Programs May Solve Retention Problems for Universities.....	26
Conclusion .....	27
References.....	31
ARTICLE 2: Impact of Certificate-First Programs on Matriculation Rates.....	42
Abstract.....	43
Introduction.....	44
Review of Literature .....	46
Methods.....	50
Participants.....	51
Data Collection .....	52
Data Analysis .....	53
Results.....	54
General Cohort Findings.....	54
Matriculation Rates Analysis by Marital Status .....	55
Matriculation Rates Analysis by Gender .....	55
Matriculation Rates Analysis by Age Group .....	56
Discussion and Conclusions .....	57

References.....	59
ARTICLE 3: Understanding Improved Matriculation Rates Found in a Certificate-First Program.....	62
Abstract.....	63
Introduction.....	64
Research Questions.....	65
Review of Literature.....	65
Certificate-First Credential Programs.....	67
Methods.....	69
Participants.....	69
Data Collection.....	71
Data Analysis.....	72
Trustworthiness.....	73
Limitations.....	74
Results.....	74
Student Personas.....	75
Persona 1.....	75
Persona 2.....	75
Persona 3.....	76
Trends and Patterns.....	76
Theme 1: Increased Academic Confidence.....	77
Theme 2: Better Employment.....	81
Theme 3: New Skills.....	83

Theme 4: Support Structure .....	84
Theme 5: Reduced Barriers .....	85
Negative Case Analysis .....	86
Discussion and Conclusions .....	87
Implications for Education.....	88
Implications for Nontraditional Credentials .....	89
Suggestions for Future Research .....	90
References.....	92
DISSERTATION CONCLUSION.....	97
DISSERTATION REFERENCES.....	100
APPENDIX: Institutional Review Board Approval Letter.....	101



## LIST OF TABLES

**Article 2**

Table 1 <i>Breakdown of Participant Demographics</i> .....	52
Table 2 <i>Comparison of Cohort Matriculation Rates</i> .....	55
Table 3 <i>Summary of Cohort Matriculation Rates by Marital Status</i> .....	55
Table 4 <i>Summary of Cohort Matriculation Rates by Gender</i> .....	56
Table 5 <i>Summary of Cohort Matriculation Rates by Age Group</i> .....	57

## DESCRIPTION OF RESEARCH AGENDA AND STRUCTURE OF THE DISSERTATION

The purpose of this research was to investigate changes in retention and persistence for individuals completing professional certificates through the BYU-Pathway Worldwide (BYU-PW) program. In 2018, BYU-PW made a strategic policy shift to focus primarily on offering students' certificate-first programs, rather than solely emphasizing preparation and enrollment in traditional degrees. In addition to the shift in strategy, the organization also released a new version of the online curriculum, PathwayConnect, to support the focus on earning a certificate.

While the new curriculum's learning outcomes and content did not fundamentally change from one version to another, the emphasis was on assignments and learning activities that encouraged students to identify certificates that they would like to earn. This *certificate-first* emphasis in the new curriculum requires students to identify and earn credentials that count toward future online degrees if they choose to continue their academic pursuits. If the student pauses their studies rather than matriculating to an online program, the student has still earned an interim credential or certificate that they can use to seek new or better employment.

This study begins by investigating the extent to which retention and persistence have changed at BYU-PW since 2018 because of modifications made to the PathwayConnect curriculum. Specifically, my research compared two separate cohorts, one from 2018 and the other from 2019, and compared the matriculation rates between both groups. The second phase of this research attempted to discover the reasons for any changes in matriculation rates by interviewing students from both cohorts.

The structure of this dissertation is as a series of related journal articles using a mixed-method research approach. The first research article is an extended literature review that explores the relationship between student persistence and motivation and how they may affect

matriculation rates. The latest research around alternative credentials, including certificates, was examined, as well as how they might motivate nontraditional students to pursue a bachelor's degree.

The second research article, *Impact of Certificate-First Programs on Matriculation Rates*, is a quantitative analysis of data gathered from and about online students. This study describes changes in matriculation rates since 2018, after modifications in the BYU-Pathway Worldwide (BYU-PW) strategy shifted to emphasizing certificate first vs. *degree-first* programs. To date, no prior analysis has been conducted on matriculation rates between cohorts where curriculum serves as an independent variable. Additional analysis was conducted on matriculation rates in terms of demographic information.

The third research article, *Understanding Improved Matriculation Rates Found in a Certificate-First Program*, was designed as an explanatory qualitative study. By conducting interviews with students from both cohorts, this study offers potential contributing factors that lead to the increase in matriculation rates.

## **Research Questions**

The aim of this research is to (a) understand the impact that earning a certificate has on student confidence and persistence and (b) determine if that effect motivates a student to continue their education and earn a college degree. This research seeks to answer the following questions:

1. How has shifting the curriculum emphasis from earning degrees to earning professional certificates changed student confidence, persistence, and retention between two separate student cohorts?

2. When students participate in a certificate-first program, what factors are likely to contribute to any change in student confidence, persistence, and retention?

A recent publication by Kirp (2019) suggested that increased academic confidence and success are predicted when a student perceives that their school supports their academic, personal, and social needs. The strategy of BYU-Pathway Worldwide (BYU-PW) has always focused on supporting students academically, personally, and socially by helping nontraditional students prepare to begin a bachelor's degree.

More recently, along with teaching basic academic skills in writing and mathematics, BYU-PW has supported students in their PathwayConnect program to choose a major by encouraging them to earn professional certificates in their area of interest. Preliminary data analysis related to encouraging students to earn certificates appeared to increase not only student confidence, but also persistence rates in matriculation compared to more traditional online degree programs (Walch, 2019). As part of this dissertation, two related studies were conducted to explore the degree to which this phenomenon has occurred, and the reasons for changes in retention and persistence. Each of the articles in this dissertation report part of the overall research.

### **Summary of Dissertation Findings and Implications**

There is considerable research on student motivation, persistence, and the various factors that affect retention and matriculation rates. Additionally, many studies have been conducted on alternative credentials such as certificates and micro-degrees. While several studies have sought to understand student motivation and persistence as it relates to earning alternative credentials, there is little research as to how these two areas, student motivation and earning certificates, relate to each other.

The quantitative study and analysis suggest a strong relationship between BYU-PW's certificate-first curriculum change and an increase in matriculation rates between the 2018 and 2019 cohorts. These findings are important as they confirm prior studies' assertions (Kirp, 2019; Walch, 2019) that earning a certificate increases student confidence and persistence, respectively.

The qualitative study and analysis presented in the third paper revealed key contributing factors that increase student motivation and confidence. Using an interview protocol involving 40 students (20 from each cohort), we attempted to understand how and why nontraditional students' motivation increases when they earn a certificate before pursuing a bachelor's degree. Based on the research gathered, the data suggests that earning credentials in the short term provides students a more immediate benefit and build hope and confidence that they can achieve a more long-term goal of a bachelor's degree. It was found that this new approach offered the immediate benefit of having a professional certificate in hand—something most nontraditional students valued. Additional analysis suggests that students may develop more confidence and motivation to persist in school because of five key factors: (a) earning a certificate was a significant achievement and encouraged them to earn more, (b) the certificate allowed participants to obtain better employment, (c) satisfaction in acquiring new skills that benefited other aspects of their life, (d) the positive impact of a strong support network, and (e) elimination of traditional barriers to matriculation.

In summary, this research strongly suggests that a degree preparation program for nontraditional students that emphasizes and rewards students for earning a professional certificate builds student confidence and motivation and seems to provide a positive impact on persistence and matriculation rates. I plan to reformat and combine Articles 2 and 3 and submit

them together to several educational journals that focus on student motivation including, *Sociology of Education*, *Review of Educational Research*, and *Research in Higher Education*.

ARTICLE 1

**Extended Literature Review**

M. Troy Martin

Brigham Young University

## Introduction

It is a common belief that obtaining marketable skills in the form of post-secondary credentials (e.g., a college diploma, or degree) is a critical factor to long-term, sustained financial success (King, 1996). In many aspects of society, having a degree is also an important requirement for the social mobility of an individual (Engle, 2007). As a financial investment, a college degree can not only open new doors and opportunities, but also benefit the recipient for a lifetime (Becker, 1992). Due to the perceived value and social benefits that a college education brings, it is assumed that all students in the United States should be “college-ready” when they graduate high school (Cabrera et al., 2005). Not surprisingly, nearly 70% of all U.S. high school graduates enroll in some form of post-secondary education shortly after graduation (Baum et al., 2013).

While access to higher education has grown over the past few years, significant barriers remain for many potential students, including financial barriers, poor academic preparation, and a general lack of support from family and friends (Engle, 2007). These barriers were so significant, that a few years ago, some worried that this generation of youth would be the first in American history to be less educated than their predecessors (Perlmann & Waldinger, 1997). The ever-widening gap between those that have the opportunity and means to attend college and those that don't has led to an increase in alternative college experiences and credentials, including the ability to study exclusively online to earn digital credentials such as badges and certificates (Grotsky & Riegle-Crumb, 2010; Tomlinson, 2008).

The increased acceptance of “alternative credentials” by potential employers has been a welcome change from the traditional requirement to only consider those candidates who have *earned a degree* to apply for and obtain employment (Gibson et al., 2015). As a result of this



shift and acceptance of alternative credentials, the definition of a “traditional” student has also changed (Astin, 1998). *Traditional students* are broadly defined as individuals between the ages of 18-22 who transition directly from high school to a college or other institution of post-secondary education with a full-time status (Adams & Corbett, 2010). *Nontraditional students* are individuals over the age of 23 with either a full-time or part-time status who are seeking alternative credentials or a college degree (Bowl, 2001). Evidence suggests that the proportion of nontraditional students has been steadily increasing (Cantwell et al., 2001; Raish & Rimland, 2016).

It is generally acknowledged that alternative credentials have the potential to alleviate a perceived educational void by providing a bridge for nontraditional students to obtain additional education and better employment. Alternative credentials, such as professional certificates, have enabled many students to obtain meaningful employment in a shorter amount of time than traditional students, and even enabled them to go on to earn traditional degrees (Bailey & Belfield, 2017). This pattern of nontraditional students earning alternative credentials and certificates and then continuing their education may be an underlying contributor toward redefining how *the traditional college experience* may look like in the years ahead.

### **Shifts in Postsecondary Education**

The idea of what constitutes a *college experience* has evolved. Where this term once referred strictly to a 4-year period of academic study, it now applies to almost any post-secondary study that is meant to culminate in a certificate or degree—whether it is academic or occupational, public or private, 2- year or 4- year (Cabrera et al., 2005). A half-century ago, most Americans did not consider college to be the natural next step after high school graduation. American factories were thriving, and unions were strong. At the time, a high school graduate

could immediately enter the workforce; their wages could support a family, pay the mortgage on a house, and buy them a car. The idea of post-secondary education was accepted gradually; by 1960, about 45 percent of recent high school graduates began college somewhere (Mattern & Wyatt, 2009).

Today, demand for higher education is growing (Kirp, 2019), and the new student body has evolving needs that are not being met (Kirk-Kuwaye & Sano-Franchini, 2015). Students are struggling to transition from high school to post-secondary education (Higgins, 2010). Once students arrive at a post-secondary education institution, they face a series of unique challenges that, in many cases, cause them to abandon their education (Hickey & Chartrand, 2018). These challenges may include the need to balance the demands from home, or employment (McGaha-Garnett, 2011). For higher-learning institutions, accommodating nontraditional students and their unique challenges is a difficult task, and not addressing these issues contributes to declining matriculation rates (O'Neill & Thomson, 2013).

A curriculum based on credentialing programs may be the best solution to increase the rate of matriculation and boost retention (Mah, 2016). The research on student engagement, persistence, and retention suggests a connection between credentialing programs and obtaining professional certificates and staying in school, improving student motivation and persistence, improving educational outcomes for students, solving retention problems for universities (Dadigamuwa & Senanayake, 2012). All these connections require further inquiry. Research is necessary to determine precisely how and why credentialing programs may benefit students and universities. This literature review will explore current trends in student persistence and endeavor to uncover gaps in understanding the challenges of student matriculation.

## **Important Definitions**

*Nontraditional degrees*- other names for nontraditional degrees are professional certificates, digital badges, or credentials (Moore et al., 2011).

*Nontraditional student*- any student with at least one of the following characteristics: (a) a first-generation college student, (b) an individual who is older than 24 years, (c) a single parent, or (d) an individual who is struggling to balance the domains of work, home, and education in an unfamiliar academic environment.

*Postsecondary readiness*- any formal setting in which an individual pursues instruction beyond high school—including two- or four-year degree programs, certificate or licensure programs, apprenticeships, or military training programs (Astin, 1998).

*Retention*- deals specifically with staying in school as opposed to dropping out, quitting, or taking a leave of absence.

*Student engagement*- refers to the degree to which students are involved in or committed to their academic pursuits. Often there is a tie between research surrounding student engagement and nontraditional degrees (Madhlangobe et al., 2014).

*Student persistence*- suggests students' ability to overcome trials and adversity (Madhlangobe et al., 2014).

*Student persistence*- the number of students who complete a diploma, certificate, or degree requirements from an institution (Chester, 2018).

## **Gaps in Understanding the Challenges**

The changing definition of *college student*, changing expectations about what is required to get a good job and expanding access to financial aid have all led to a growth in the number of people attending college. Growth is a double-edged sword, bringing opportunities and challenges

in one stroke. Because of a growing population and higher attendance rates, the number of people enrolled in postsecondary education has grown spectacularly from about 4 million in 1960 to more than 20 million in 2009 (Astin, 1998). In 2009, 70% percent of high school graduates enrolled in some form of postsecondary program shortly after completing high school, and the range of options available to them had become much broader (Baum et al., 2013).

The definition of what a college student is has changed over the years to allow for varying attributes, such as *full-time* or *part-time*, and *on-campus* or *online*. Students can be categorized as *first generation*, *older* (over 24 years of age), *low-income*, and *returning* (i.e., had started at one time, dropped out, and resumed their education later). One notable demographic change has been the shift in the relative enrollment of traditional and nontraditional students. In 1970, 28% of postsecondary students were older than 24; by 1990, that share had increased to 42%. For the past 20 years, that percentage has remained steady. The jump from 28% to 42% is undoubtedly explained, at least in part, by the availability of federal grant and loan funds.

Despite the encouraging trend in university enrollment, increased demand and shifting student demographics have created problems with students transitioning, matriculation, retention, persistence, the technology literacy gap, the confidence gap, and inadequate attrition models. In the following sections, we will summarize the literature on these topics and evaluate the need for further research.

### **Students Struggle to Transition Into and Complete Higher Education**

On February 17, 2009, President Barack Obama signed into law legislation that would stimulate the economy, support job creation, and invest in various critical areas, including education. The ARRA laid the groundwork for education reform by supporting investments in innovative strategies that would likely lead to improved student success, enhanced educational

system resources and capacity, and increased productivity and effectiveness (U.S. Department of Education, 2009). Later in 2009, President Barack Obama stated the necessity of making education America's national mission and argued that education is critical for helping our citizens earn the skills to become contributing members of the workforce and society.

Unfortunately, our current educational system is struggling to meet the expectations and guidelines laid out in the ARRA. Data suggests that many students graduating from high school are not ready for postsecondary education and are even less qualified to join the workforce (Conley, 2010).

Simply put, there is a gap between the goals laid out by the government and those of our current educational system (Baum et al., 2013). The U.S. postsecondary and higher education systems have a student program completion problem. To help close this gap, we need to better prepare students for postsecondary education by providing them with adequate training and guiding them to programs that align with their interests.

One of the challenges contributing to the completion problem is that the transition from high school to college is very complex. Students who attempt this complex transition alone may find it difficult to succeed in higher education.

Preparing every student for postsecondary options is a critical role of the secondary school system. Students from low-income families and some ethnic and racial minority groups are most dependent on their high school's ability to adequately prepare them for college success (Conley, 2010). At many institutions, over half of the student body is failing to complete a degree within six years, and those students are also the most likely to default on their student loans (Walch, 2019). Students from the lowest-income families, many of whom overcome steep odds just to enter college, are the most likely to drop out. The Pell Institute at the University of

Pennsylvania tracks college completion rates every year and has found that if students' parents were in the top quartile of income, their odds of completing a bachelor's degree were a little bit over 50 percent (Tinto, 2004). However, if a student grew up in the bottom quartile of income, their odds of completing a bachelor's degree dropped to less than 12 percent.

This research suggests that universities cannot rely exclusively on existing high school, community, and familial support systems to help students complete their degrees (Adelman, 2006). Higher education should consider additional programs to assist students with the complex and challenging process of transitioning into degree initiatives (Banilower et al., 2013).

Educational institutions could provide better opportunities to help students transition into college by utilizing certificate programs as the bridge to degree programs (Cabrera et al., 2005). This approach may help prepare each student for a successful life after completing their schooling and may greatly benefit our society by giving students a credential certifying that they have a specific competency or skill (Bailey & Belfield, 2017). Future research should examine credentialing programs' potential to help high school students transition into and complete traditional university programs.

### **General Education Contributes to Problems With Retention and Persistence**

Another obstacle to student completion is the way educators traditionally view the role of General Education (GE) courses. Many institutions believe that students use their GE classes to explore their career options, but some studies suggest that a large percentage of general education curricula are not designed to help students discover their professional interests (Lee et al., 2008). Many GE courses aim to broaden a student's base of thought, to make them a critical thinker (Kirk-Kuwaye & Sano-Franchini, 2015). It may be tempting to argue that GE courses serve a vital purpose in giving students the chance to explore their interests before they commit

to a major; however, an increasing amount of data suggests that such an approach simply does not work (Sonnenmeier et al., 2005). Some researchers have even suggested that students who go too long in their studies and focus only on GE courses may incur more debt through additional student loans (Baum & Schwartz, 2006).

Statistics from The U.S. Department of Higher Education support the findings from Baum and Schwartz (2006) and suggest that most students who started college without identifying a desired major failed to finish a degree and may have a higher college debt default rate than other students in the same cohort (U.S. Department of Education, 2009).

Conversely, students who focus on earning a certificate are much more likely to finish their academic goals sooner and less likely to have student debt (Roksa, 2006). Students who obtain a professional credential and then pause or stop their education may still realize financial benefits by obtaining employment and increasing their overall earning power (Callender & Jackson, 2005). This phenomenon holds true with international students who earn an English proficiency certificate. These students realize immediate financial benefits (Choi & Clark, 2006).

In essence, the research indicates that assumptions about the GE curriculum need to be reexamined. Contrary to popular opinion, General Education is probably not an effective method to improve student retention and persistence. In fact, GE requirements likely contribute to completion failure and student loan default rates. In contrast, college students who obtain professional certificates are more likely to complete their degree programs sooner and with less student loan debt. Even when these students fail to complete their degree program, they experience higher earnings than college dropouts. Further research is needed to study how certificate programs may be more effective at promoting retention and completion than GE requirements.

## **Nontraditional Students Experience Unique Challenges in Universities**

Traditional high school graduates are not the only students whose difficulty navigating the college environment is leading to a student attrition problem (Tinto, 1993). Unfortunately, recent studies showed that many nontraditional students do not persist long enough to complete a postsecondary program in the slated time if they even graduate at all (Chester, 2018). Only 75% of these students have a high school diploma, while the other 25% hold a General Education Development degree [GED] (Deming et al., 2013). Additionally, 30% of nontraditional students are single parents (Deming et al., 2013), and a significant majority of students are first-generation students (FGS) (Engle & Tinto, 2008).

According to data from *Achieving the Dream: Community Colleges Count* (Clery & Achieving the Dream, Inc., 2010), 42% of students who (a) received a degree, (b) received a certificate, or (c) transferred between colleges within three years of initial enrollment. Over 80% of returning students did so on a part-time basis; 17 % returned full-time. According to the information gathered, 62% of the returning students ended up transferring a second time. About two-thirds of returning students who initially obtained certificates in transfer majors completed an associate degree. Despite completing credentials or transferring to other institutions, a significant portion of *Achieving the Dream* students who returned to their original institution continued their coursework or earned additional credentials. These findings highlight the variability of institutional enrollment and clearly demonstrate that nontraditional students take nontraditional routes to graduation.

Students are taking longer to complete their degrees, or else dropping out altogether (Dadigamuwa & Senanayake, 2012). According to Dadigamuwa and Senanayake (2012), 32% of students enrolled at for-profit schools ended up graduating within 6 years, though most programs



are only supposed to last no more than 2 years. However, public institutions graduate 58% of their students, and 65% of students graduate from private non-profit institutions in the same period, though students are typically seeking 4-year degrees (Bell, 2012). On average, students are taking 5 to 6 years to complete programs (Bell, 2012). Nationally, only 43.7% of students enrolled in a for-profit institution complete their program in three years or less.

Retaining and graduating students is a serious issue for all sectors of higher education, but more so at for-profit schools, because their primary student demographic consists of adults with different learning needs and personal circumstances than traditional college students. More than 750,000 students enrolled in a for-profit school between 2008 and 2009 had dropped out by 2010 with no degree (Gibson et al., 2015). A 2012 report by the Senate Health, Education, Labor, and Pensions Committee found that, based on a two-year-long investigation of 30 for-profit schools, 62.9% of students enrolled in an associate degree program and 38.5% enrolled in a certificate program in 2008-09 left before earning a degree and that most students only lasted four months before dropping out (Hayes, 2012).

When nontraditional students' personal lives combine with school pressures and become overwhelming, they typically leave school. Some take time off and return, thus lengthening their program completion, whereas some never return and lose the opportunity to develop new skills. Though nontraditional students enroll in community colleges and universities, they are enrolling in schools with short, skill-based programs that get them into the workforce faster, as for-profit schools do (Bell, 2012). With a nontraditional student population, most for-profit colleges experience high attrition rates when external pressures leave students with no other choice than to terminate their enrollment. Seventy-three % of all students enrolled in a for-profit postsecondary institution are nontraditional students (Ross-Gordon, 2011). Nontraditional

students account for 63% of college students in all sectors, and that figure will rise over the coming years (Bell, 2012).

Unfortunately, many of the challenges that nontraditional students face when trying to complete their programs in any sector of higher education led them to drop out. Several issues appear as the reasons why nontraditional students leave for-profit schools before completion. One issue leading to a lack of retention is a student feeling unprepared (Barton & Donahue, 2010). Inside the classroom, many nontraditional learners have difficulties acclimating to an academic setting. Common challenges include adjusting to new expectations and rules, being unfamiliar with institutional resources, and feeling intimidated by building rapport with teachers and classmates, especially if they have been out of school for a while (Barton & Donahue, 2010; Lawrence, 2000). They typically do not participate verbally in class or ask questions out of fear of looking stupid (Lawrence, 2000).

While the experience of these issues occurs in all institutions, they are exacerbated at schools with accelerated programs because nontraditional students are not provided the proper transitional or support skills. Fortunately, these issues are addressable through early intervention through the use of first-year seminar courses to help nontraditional students. Statistics showed that when students feel connected to their school, have clear goals, and feel supported, they will succeed beyond their first year and develop the persistence to complete their program (Higgins, 2010).

Nontraditional learners also tend to struggle with technology (Gordon et al., 2009). Depending on the student's age and previous experience with technology, they may be more apprehensive and intimidated to utilize technology or seek remediation than their younger counterparts (Gordon et al., 2009). Integrating computers, online portals, or cloud-based learning

can be beneficial to any learner. Still, these avenues may be intimidating to nontraditional students depending on their age, background, and previous exposure to technology. Many current nontraditional students did not grow up with technology to the same extent as the current generation of undergraduates (Gordon et al., 2009). These technologies can enhance a nontraditional student's learning experience, but not before they are ready (Gordon et al., 2009).

The demands of school, work, and personal life combined with a lack of support lead most nontraditional students to think that dropping out is the easiest solution (Ross-Gordon, 2011). Lack of emotional support and frustration related to pausing academic programs may cause nontraditional students to experience low self-esteem and apprehension at the possibility of re-applying and picking up where they left off (Engle & Tinto, 2008). This same study suggested that it may be especially difficult for nontraditional students to feel supported at home when they are the first in their family to go to college. At for-profit colleges offering programs under 3 years, 32% of low-income students left after the first year of enrollment in their two-year program; by 2014, only 59% of the initially enrolled students earned a certificate or associate degree (Engle & Tinto, 2008). Multiple studies, including those conducted by Lawrence (2000), Ross-Gordon (2011), O'Neill and Thomson (2013), and Perna (2016), all suggested a strong relationship between a nontraditional student's self-esteem and thoughts of dropping out of school.

Universities have a retention problem, and that problem is likely to worsen as nontraditional students come to characterize a larger subset of the student body. Because graduates from credential programs often continue their education beyond their initial certification, these programs may help alleviate the challenges faced by nontraditional students and stem the tide of transfers and dropouts. Future research should examine whether credential

programs can close the technology literacy gap, the confidence gap, and the retention gap between traditional and nontraditional students.

### **Attrition Models Fail to Reflect the Needs of Nontraditional Students**

Universities are facing challenges with transitioning and retaining traditional and nontraditional students. Compounding these challenges is the weakness of current modeling methods used to estimate student attrition. Institutions and policymakers in the U.S. know very little about the rates of completion for nontraditional students because most graduation rate calculations are institution-based and only count students who finish at the same institution where they started (Shapiro et al., 2012). To measure the potential impact of alternative educational approaches, there must be a reliable way to track student retention and completion before and after implementing a solution.

Any serious research or analysis of student retention must include the student integration model (Tinto, 1975) and the student attrition model (Bean & Metzner, 1985). Both models have been influential in explaining persistence and attrition in higher education, why students drop out of college, and what programs and systems institutions can use to retain students (Shapiro & Bray, 2011).

The problem is that judging retention by measuring student enrollment over successive periods fails to capture the complexity and diversity of the paths that nontraditional students take to achieve their academic goals. In addition to leaving college without credentials, students often shift among full-time, part-time, and non-attendance. Current models may not account for community college students transferring to a university, online learning and distance education students, first-generation students online, or part-time students online. Because of the potential disparity between distance or online and physical or in-person students, it may be worthwhile to

use the student integration model and the student attrition model to look at students who attend courses online as part of distance learning programs through community colleges and massive open online courses (MOOCs).

### **Community College Students Transferring to University**

Community colleges strive to educate most of the students who are statistically least likely to earn degrees. Naturally, efforts to increase the rate of college and student success need to strike at the heart of community colleges. In line with this effort, several community college leadership organizations have pledged to improve college completion rates. Community college and online students often take circuitous routes through their education; very few enroll full-time and continue until they graduate (Ma & Baum, 2016). Although over 80% of the 1.5 million students who enter community colleges each year indicate they intend to attain a bachelor's degree or higher, less than 40% earn any form of college credential within 6 years (Public Agenda, 2015). Current attrition models incorrectly count these students as having failed to complete their university studies.

### **Online Learning and Distance Education Students**

In addition to students in community colleges, those who participate in online learning may have an entirely different set of characteristics, needs, and challenges compared to students who are physically attending classes on campus. Once again, the attrition models fail to correctly categorize these students as successfully completing their studies.

A longitudinal study (Shapiro et al., 2012) found that the retention rates of online students who are seeking a professional certificate or credential are higher than retention rates of students *just taking classes*. The findings show that within six years, 12.1% of first time in-college degree-seeking students who enrolled in fall 2006 completed a degree or certificate at an

institution other than their starting institution, raising the overall completion rate from 42.0% to 54.1%. This 12% gap exemplifies the weaknesses of the traditional attrition model. Additionally, Shapiro et al. (2012) indicated that mixed enrollment students completed at an institution other than their starting institution at a higher rate (14.6%) than exclusively full-time (10.6%) and exclusively part-time (3.1%) students. The attrition model fails to account for transfer students in general, and these online-learning or distance-education students, because they transfer more often than the average student. These results are significant findings as they suggest that students, regardless of demographic, have higher retention rates than current estimates suggest.

A study of online students found that, besides student demographic characteristics, three primary predictor variables should be used when encouraging online student retention. They include variables related to work, family, and academic challenges (Davidson, 2012). A large majority of online students are currently employed and are seeking better employment by acquiring additional certificates. These students must balance a full-time job along with academic responsibilities. Unlike traditional students who leave home to attend college, online students often attend school from home and need to attend to family matters. Of the three variables, the study found that academic concerns were the primary cause of online students failing to complete their studies within 6 years. All these challenges may slow a student's path to graduation, resulting in incorrect classification according to Bean and Metzner's attrition model.

### **First-Generation Students Online**

As discussed, many distance-learning or online students face multiple limitations to successful academic achievement. Compounding this demographic are first-generation students who have few relatives from whom to learn about the challenges of college. When first-generation students tie academic success with their ability to provide emotional and financial

stability for their families, that seems to imply higher retention. First-generation adult learners participating in online learning are more likely to seek online instructional delivery services to obtain educational credentials and job enhancement opportunities in the workplace (McGaha-Garnett, 2011). Current attrition models fail to reflect the challenges and achievements of first-generation students.

### **Part-Time Students Online**

Erratic enrollment patterns are negatively linked with academic progress and eventual credential completion. Students enrolled continuously and on a full-time basis are more likely to attain their academic goals than those not enrolled continuously and those who drop to part-time status (Clery & Achieving the Dream, Inc., 2010). Colleges can and should become more informed about how to help inconsistent students by determining why these students change their enrollment status.

Research suggested that part-time online students take courses less reliably than full-time students (Shapiro & Bray, 2011). Retention data from many institutions suggested that part-time adult students are also less likely to graduate and complete a credential program. However, when data from part-time students are separated from full-time students, it can be used as a better predictive of future enrollments. Retention data from part-time student enrollment patterns are continually changing each quarter, and the predictive power of the model increases over time for each student. Updating the attrition modeling may help facilitate a more nuanced understanding of part-time online students and lead to alternative online teaching modalities such as MOOCs (Davidson, 2012).

## **Massive Open Online Courses (MOOCs)**

(MOOCs) are an education revolution, but their low retention rates have raised concerns over whether they can feasibly advance education for all. In addition, there are unaddressed gaps in the research literature on MOOCs, particularly concerning predictors of retention and achievement (Reeves et al., 2017). The authors used survival analysis to examine the degree to which student characteristics (relevance, prior experience with MOOCs, self-reported commitment, and learners' implicit theory of intelligence) predicted retention and achievement. ~~The study~~ Greene et al. (2015) found that the learners' expected investment, including their level of commitment, expected number of hours devoted to the MOOC, and intention to obtain a certificate, all related to retention likelihood. Prior level of schooling and expected hours devoted to the MOOC predicted achievement.

Of particular interest is the discovery that if a student knows how long it will take to obtain a certificate, their persistence and retention improve (Madhlangobe et al., 2014). In other words, if online MOOC students know beforehand the expectations required in time, they have a higher probability of being successful. Due to unique patterns in MOOC student persistence and retention, the data on persistence and completion could be skewed with the inclusion of MOOC students with the general population of students in attrition modeling.

### **Research Gaps**

College completion is key to the success of individuals and of societies more broadly. Attaining a credential has become an essential to earn a livable wage and support a family. As each person's educational attainment increases, so does his or her capacity to contribute to the economy, the community, and the democratic process.



In most programs, retention efforts are measured and focused primarily on students in their first year of college and tracking them as they transfer to their second year. Current modeling practices do not adequately account for the increasingly diverse path of nontraditional students. Future research should examine how to model nontraditional students to better understand how credentialing programs affect retention and persistence across a student's college journey.

### **The Potential Benefits of Modern Credential Programs for Students and Universities**

Not only does the existing literature contain gaps in understanding the challenges that modern students face, but it also contains gaps in understanding the solutions to problems with retention and persistence. Competency-based education is one such solution that should be considered and studied. It is essential to explore how credentialing programs can benefit higher learning institutions and modern students.

The concept of credentials and certificates is not new. A credential represents proof of achievement or obtaining a skill. Credentials are issued by approved, or accredited, institutions authorized to judge a student's performance. The practice of earning credentials or a certificate in a specific trade dates to medieval times. For example, to become a master builder in Germany, a person would have to work with other certified builders for three years and prove that they had obtained competencies in different aspects of construction (Evans & Heinz, 1994). Apprentices would carry a small book around, called a *Wanderbuch*, that would hold stamps for specific skills and abilities. Once an apprentice completed all the requisite studies, they could become a master builder and participate professionally in the construction trade.

Similarly, in an internet economy, there are opportunities to learn a trade by accessing online courses and content from masters in a specific industry, thereby earning nontraditional

credentials like certificates and digital badges (Jirgensons & Kapenieks, 2018). The traditional approach of graduating from high school and continuing to college is being replaced by an online curriculum that inspires lifelong learning, credentials, and certificates (Devedžić & Jovanović, 2015). The flexible learning modules offered by this approach fit an increasingly nonlinear education and training system. Certificates have lifelong value that is demonstrated in the age distribution of certificate earners; 66% of certificate holders earn their certificates before age 30, 18% are in their 30s, and 16% are 40 or older (Carnevale et al., 2013).

Certificate holders find many ways to leverage their credentials to find gainful employment. Certificate holders earn 20% more than high school diploma holders—a difference of about \$240,000 in lifetime earnings (Girves & Wemmerus, 1988). More than 60% of certificates have a clearly demonstrated economic advantage over high school diplomas (i.e., earnings 10% higher than the median high school graduate). Even in cases where a certificate does not provide a significant earnings boost, it can make an individual more employable.

Competency-based education (CBE) often results in granting the student a “credential,” and even though it may be an innovative alternative to traditional higher education, most programs cater to a limited postsecondary population (Carey & Stefaniak, 2018). For example, few credentials are intended for adults interested in boosting skills that would help them succeed in college coursework. These limitations could be addressed through designing CBE with the needs of a broader range of learners in mind, and in doing so, CBE could enable the national movement to increase educational access, equity, and credential attainment (Center for Community College Student Engagement, 2014).

Many CBE-centered programs recommend specific features to help underprepared students in CBE settings master college-ready skills, persist in their postsecondary studies, and

ultimately earn credentials. Success depends heavily on providing individualized support services to address both academic and non-academic difficulties (Deegan & Jobs for the Future, 2018). Providing support to students in a CBE model of remedial education makes a critical difference. The following approaches have considerable promise to improve student support in developmental education: (a) personalized coaching, (b) college success classes, (c) monetary incentives, and (d) comprehensive support systems, a strategy that features several interrelated elements.

These four elements may suggest why students who work to obtain a credential or professional certificate may be more motivated to persist in their academic pursuits. In addition to the support identified above, additional research suggests that motivation to continue may increase as students gain more academic confidence (Sander & Sanders, 2006). Monetary incentives may be the most compelling reason why students choose to continue. Unlike completing GE courses, completing a credential allows the student to benefit immediately by obtaining better employment or scholarships to offset tuition costs (Vila, 2000).

### **Credentialing Programs May Improve Motivation and Persistence**

CBE may improve retention rates is by improving student engagement and motivation. There appears to be enough research to suggest that students who obtain a credential of any kind, including a professional certificate, are motivated to continue to earn more (Gibson et al., 2015). However, there is relatively little research as to why this may be true. It is interesting to note that the U.S. Army uses boot camp credentials to increase motivation for new soldiers (Griffith, 2008). The process of taking a recruit off the street and converting him or her to become a soldier is similar in many ways to other educational pursuits. A core component of that educational process is rewarding soldiers with patches or rank advancement for learning skills

and demonstrating competency. Similarly, postsecondary institutions that offer immediate rewards in the form of credentials also appear to motivate students to continue (Hickey & Chartrand, 2018). Why or how this appears to be true requires additional research that can be applied in the context of postsecondary education.

Students who obtain a credential appear to be more motivated to continue because credentials provide short-term rewards that keep students motivated throughout the program. However, measuring motivation is not enough. More research needs to be done to determine if this improved motivation translates into higher retention and completion levels.

### **Early Program Selection Improves Persistence Rates**

Competency-based education may improve retention rates by encouraging students to specialize and select their program early in their postsecondary education. Research by The California Community Colleges (CCC) has shown a commitment to increase the rate at which entering students persist to complete a certificate or degree or transfer to a university (Moore et al., 2011).

CCC research suggested that too many students accumulate credits in disparate areas of study that do not add up to a coherent academic program (Moore et al., 2011). As part of this research, the CCC conducted multiple studies by interviewing students, both in-person and through surveys. While initially searching to improve enrollment in certain programs, the CCC researchers quickly discovered an underlying issue with students who had significant credit hours that did not necessarily count toward anything like a final degree.

The result is frustration and confusion on the student's part, leading them to pause their education or drop out entirely. Efforts to increase student success and retention in community colleges need to focus on helping new students choose and enter a study program (Moore et al.,

2011). CCC research also suggested that entering a program of study helps students connect to their college in ways that promote completion. CCC students who enter and go through certificate programs appear to persist to earn an associate degree or transfer to a university to earn a bachelor's degree (Moore et al., 2011). The results point to three main conclusions:

1. Entering a program of study is a critical milestone on the path to completing a college certificate or degree, and yet only half of all CCC students reach this milestone.
2. The earlier students enter a program, the more likely they are to complete a certificate, a degree, or transfer.
3. Analyzing students' course-taking patterns provides reliable information for determining their intended programs, but better data is needed to provide effective student guidance and program review.

The CCC's efforts to increase completion will be more successful if they continue to focus on helping students identify a field of study and provide access to *well-structured programs* rather than a collection of courses that may not add up to a coherent program of study (Moore et al., 2011). The findings of Moore et al. (2011) have critical implications for other postsecondary education institutions. If university students who decide on their program sooner are more likely to graduate on time, then universities might improve persistence rates by more effectively helping students decide on their course of study. Credentialing programs and CBE programs may be a useful tool for universities to steer students into programs sooner and keep them enrolled through graduation.

### **Certifications May Improve Educational Outcomes for Students**

In addition to their effect on student motivation and early program choice, certificate programs may be invaluable for helping students transition into their university careers. More

specifically, professional certificate programs targeted to a student's particular interests and skills may successfully help them transition between high school education and secondary schools (or the workforce).

Bank (1995) suggested that students with a postsecondary education that provides professional certificates and credentials will advance in their careers and have higher persistence rates. By interviewing these students while they were enrolled and when they completed their course of study, the students were judged to be happier and more generally satisfied with their overall educational experience (Erozkan et al., 2016). Other factors that may have contributed to Bank's findings may include the institution's commitment to students, communication to the students that they matter, providing a sense of belonging, opportunities to interact with other students, and general perceptions about belonging to a campus climate or community.

An additional study by Tovar (2013) using survey and interview instruments found that emotional support from family and friends exerts the greatest effect on a student's persistence, regardless of race or ethnicity. According to this same study, additional influences on persistence include engagement or involvement, perceptions of mattering, interactions with diverse peers, GPA, goal commitment, and socio-academic integrative experiences. This study empirically demonstrated a possible relationship between institutional commitment to students and a student's perception that they are important to the institution. Certificate programs may produce better workers and more successful university students. CBE programs may be an effective solution for improving the educational outcomes of an increasingly diverse student population.

### **Credentialing Programs May Better Appeal to GED Holders**

Credentialing programs provide many potential benefits to students, but there are also many potential benefits to postsecondary education institutions. One distinct advantage that

credentialing programs may give to institutions is their appeal to a broader audience of students. For most high school non-completers, the GED credential provides a bridge to postsecondary education. However, how successfully GED holders cross that bridge and whether enrollment rates changed with time were unknown (Hilliard, et al., 2018).

The American Council on Education (ACE) conducted a three-year longitudinal study to understand the effect of the GED credential on postsecondary enrollment, persistence, and completion (Deming et al., 2013). The 148,649 GED test passers in the 2003 cohort study attended 2,787 postsecondary institutions throughout the United States. Within the first three years of passing the test (i.e., 2003, 2004, or 2005), most participants in this study (77.8%) enrolled in public institutions with 2-year or fewer-than-2-year programs. They tended to progress at a less consistent pace than other adult learners in their postsecondary programs. While 66.6% of GED passers from the 2003 cohort maintained their enrollment for two or more semesters, only 11.8% of them graduated from a postsecondary program by September 2009 (Hilliard, et al., 2018).

Patterson et al. (2010) investigated the experiences of first-year students who had completed their GED and enrolled in postsecondary programs. The study was significant because it only focused on students who earned a GED credential outside of the normal process. In other words, these were students who had dropped out of high school and returned to earn their GED degree. During the first year of a 3-year study, researchers using matriculation data as well as information gathered during the application process, discovered a positive relationship between the students who had earned their GED credential and students entering postsecondary education to keep earning additional credentials. Patterson et al. (2010) was able to use quantitative analysis and interviews with students to identify this trend within GED completers.

Patterson et al. (2010) observed predictive survival analyses for postsecondary enrollment and graduation events. For students who completed the GED, the study found that their motivation and persistence increased throughout their first year of college. Other results include comparisons between postsecondary institutions that GED credential recipients attend and postsecondary institutions in general, and between GED credential recipients and traditional high school graduates. Students who had invested the time and resources to go back and earn their GED were more likely to persist to earn additional credentials than those who had entered through traditional routes.

These studies (Patterson et al., 2010) suggested that those who obtain the GED credential are highly likely to seek higher education opportunities but struggle to persist and graduate. GED students tend toward 2-year or certificate programs rather than traditional 4-year degrees. Therefore, credentialing programs may be an effective way for universities to capture more students from this demographic and help them persist until graduation.

### **Certificate-First Programs May Solve Retention Problems for Universities**

There is reason to suspect that new students are at risk of failing to complete their degrees. Complete College America (2011) reported that unless the academic community moves with more urgency, today's youth may be the first generation in American history to be less educated than their predecessors. A more recent study found that student education could address this urgency by leveraging a more interactive and programmed approach (Bailey & Belfield, 2017) by using stackable credentials —The idea that a student can realize the benefits of their education in a stepped, or gradual approach vs. the traditional *all or nothing* benefit of a traditional degree (Baum et al., 2013).



One recommendation from that study was to broaden the definition of *student* to include nontraditional students. The educational community may face an increasingly growing challenge if they do not take the time to address what is needed to serve the nontraditional student population better. Long and Kurlaender (2009) suggested that millions are trapped in a cycle of remediation, and many first-generation freshmen are often left to fend for themselves when they arrive on campus. The future success of these students may be at tremendous risk if additional resources are not dedicated to understanding their challenges and the complicated natures of their lives (Mattern & Wyatt, 2009).

Professional certificates and CBE may fill an educational void that can better serve these students and provide a bridge for them to obtain higher education and degrees (Adelman, 2006). These programs improve student motivation, encourage early program selection, improve educational outcomes, and attract more students into universities. If institutions of higher education do not consider potential solutions to the retention problem, they will fail to educate the next generation and risk being disrupted by a more innovative educational model.

### **Conclusion**

There are many things we understand about why students persist and matriculate, but there are also many things that we do not. Incorrect assumptions about why students do or do not matriculate have influenced institutional decisions for far too long. It is time to explore the relationship between curriculum and student matriculation. No one in the current literature has examined curriculum as a critical variable in why students may or may not matriculate. Current literature does not address many remaining questions about how updating curriculum to a CBE approach may benefit students and institutions of higher learning.

- To what extent do credentialing programs help high school student's transition into and complete traditional university programs?
- Can credentialing and CBE programs close the technology literacy gap, the confidence gap, and the retention gap between traditional and nontraditional students?
- How can universities better model nontraditional students to understand how credentialing programs affect retention and persistence across a student's college journey?
- Are certificate and CBE programs more effective at promoting retention and completion than GE requirements?
- Can the financial benefits of professional credentialing programs improve student motivation and, therefore, rates of student persistence?
- Do higher levels of student motivation translate into higher levels of retention and completion?
- Are credential programs and competency-based education programs practical tools for steering students into programs sooner and keeping them enrolled through graduation?
- Do credentialing programs appeal more to GED holders more than traditional degrees do?
- To what extent can certificate programs produce better workers and more successful university students?

All these questions point toward one conclusion: It is possible that by de-emphasizing degrees and emphasizing certificates through competency-based education, matriculation rates will increase. To determine whether that is true, we examined trends in BYU-Pathway

Worldwide, an educational organization that has had success after its programs changed its focus to providing professional certificates. In fact, Certificate-First programs may be a better model for higher education. BYU-Pathway Worldwide (BYU-PW), for example, has recently made the change from traditional online degrees to professional certifications. What began as a distance-learning program at BYU-Idaho is now a separate entity and part of the Church Educational System (CES) of The Church of Jesus Christ of Latter-day Saints. BYU-PW's mission is to provide educational opportunities wherever the Church is organized.

BYU-PW offers two programs: PathwayConnect and EnglishConnect, which teach basic studying, reading, and writing, as well as English as a Second Language (ESL). BYU-PW provides educational opportunities to those who began their post-high school education and dropped out and to those who cannot attend at all. BYU-PW reintroduces individuals to learning, provides them professional certifications, and prepares them to matriculate if desired.

Because of its history and recent ties to BYU-Idaho, BYU-PW focused primarily on preparing students to obtain a bachelor's degree. This means that in addition to improving study skills in reading, writing, and math, the student would focus mainly on General Educational (GE) courses. As most students are participating online, it could take a student several years to become a full-time undergraduate student. Preparing to become an undergrad student required a lot of time and money, and if a student chose to drop out, he or she would only have a partial transcript showing the completed courses.

In 2018, BYU-PW made a strategic change, or shift, to focus its programs on providing professional certificates. The emphasis was on becoming a certificate-first program. BYU-PW reorganized its curriculum so that these certificates could stack or lead to an associate or a bachelor's degree. Recent admission data suggests that once BYU-PW's focus shifted to

certificate-first, the student persistence rates may have improved. This research seeks to explore if those persistence rates have improved, and if so, what key factors contributed to the change.

To better understand why students who achieve professional certificates may have lower dropout rates at BYU-PW, we investigated three main areas to better understand the challenges they face: credentials, (student) retention, and persistence. We sought to understand why nontraditional, online students who earn professional certificates have lower dropout rates and what institutions can do to continue the trend. We explored what is being done to increase student readiness and academic preparation and the effect this has on persistence and engagement.

## References

- Adams, J., & Corbett, A. (2010). Experiences of traditional and non-traditional college students. *Perspectives*, 2(1), Article 2. Retrieved from <https://scholars.unh.edu/perspectives/vol2/iss1/2/>
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. U.S. Department of Education.
- Astin, A. W. (1998). The changing American college student: Thirty-year trends, 1966-1996. *The Review of Higher Education*, 21(2), 115-135.
- Bailey, T. R., & Belfield, C. (2017). *Stackable credentials: Do they have labor market value?* (CCRC Working Paper No. 97). Community College Research Center, Teachers College, Columbia University.
- Banilower, E. R., Smith, P. S., Weiss, I. R., Malzahn, K. A., Campbell, K. M., & Weis, A. M. (2013). *Report of the 2012 National Survey of Science and Mathematics Education*. Horizon Research, Inc.
- Bank, B. J. (1995). Gendered accounts: Undergraduates explain why they seek their bachelor's degree. *Sex Roles*, 32(7-8), 527-544.
- Barton, A., & Donahue, C. (2010). Multiple assessments of a first-year seminar pilot. *The Journal of General Education*, 58(4), 259-278. Retrieved from <http://www.ebscohost.com/>
- Baum, S., Kurose, C., & McPherson, M. (2013). An overview of American higher education. *Future of Children*, 23(1), 17-39.
- Baum, S., & Schwartz, S. (2006). *How much debt is too much? Defining benchmarks for manageable student debt*. College Board.

- Bean, J., & Metzner, B. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485–650.
- Becker, W. E. (1992). Why go to college? The value of an investment in higher education. In W. E. Becker & D. R. Lewis (Eds.), *The economics of American higher education* (pp. 91-120). Springer, Dordrecht. [https://doi.org/10.1007/978-94-011-2950-3\\_4](https://doi.org/10.1007/978-94-011-2950-3_4)
- Bell, S. (2012, March 8). Nontraditional students are the new majority: From the bell tower. *Library Journal*. Retrieved from [http://lj.libraryjournal.com/2012/03/opinion/nontraditional-students-are-the-new-majority-from-the-bell-tower/#\\_](http://lj.libraryjournal.com/2012/03/opinion/nontraditional-students-are-the-new-majority-from-the-bell-tower/#_)
- Bowl, M. (2001). Experiencing the barriers: Non-traditional students entering higher education. *Research Papers in Education*, 16(2), 141-160.
- Cabrera, A. F., Burkum, K. R., La Nasa, S. M., & Bibo, E. W. (2005). Pathways to a four-year degree. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 155-209). ACE/Praeger series on Higher Education.
- Callender, C., & Jackson, J. (2005). Does the fear of debt deter students from higher education? *Journal of Social Policy*, 34(4), 509-540.
- Cantwell, R., Archer, J., & Bourke, S. (2001). A comparison of the academic experiences and achievements of university students entering by traditional and non-traditional means. *Assessment & Evaluation in Higher Education*, 26(3), 221-234.
- Carnevale, A. P., Rose, S. J., & Hanson, A. R. (2013). *Certificates: Gateway to gainful employment and college degrees*. Georgetown University Digital Repository. Retrieved from <https://repository.library.georgetown.edu/handle/10822/559297>.

- Carey, K. L., & Stefaniak, J. E. (2018). An exploration of the utility of digital badging in higher education settings. *Educational Technology Research and Development*, 66(5), 1211-1229.
- Center for Community College Student Engagement. (2014). *A matter of degrees: Practices to pathways. High-impact practices for community college student success* (ED561117). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearchive.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED561117&site=ehost-live&scope=site>
- Chester, T. D. (2018). *Factors affecting employee persistence in an online management development certificate program* [Doctoral dissertation, Walden University]. Walden University ScholarWorks. Retrieved from <https://scholarworks.waldenu.edu/dissertations/5063/>
- Choi, S., & Clark, R. E. (2006). Cognitive and affective benefits of an animated pedagogical agent for learning English as a second language. *Journal of Educational Computing Research*, 34(4), 441-466.
- Clery, S., & Achieving the Dream, Inc. (2010). Attendance and completion patterns. Data notes (ED521315). *Achieving the Dream*, 5(2), March/April 2010. ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearchive.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED521315&site=ehost-live&scope=site>
- Complete College America. (2011). *Time is the enemy: The surprising truth about why today's college students aren't graduating... and what needs to change* (ED536827). ERIC. Retrieved from <https://www.lib.byu.edu/cgi->

bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED536827&site=ehost-live&scope=site

Conley, D. (2010). *College and career ready: Helping all students succeed beyond high school*. Jossey-Bass.

Dadigamuwa, P. R., & Senanayake, S. (2012). Motivating factors that affect enrollment and student performance in an ODL engineering program. *International Review of Research in Open and Distributed Learning*, 13(1), 238-249.

Davidson, J. C. (2012). *The collective affiliation of community college, commuter, and distance education students: Developmental math and dropout*. ProQuest Information & Learning. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-99171-056&site=ehost-live&scope=site>

Deegan, J., & Jobs for the Future. (2018). *Supporting success for underprepared college learners*. Next-generation CBE (ED588453). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED588453&site=ehost-live&scope=site>

Deming, D., Goldin, C., & Katz, L. (2013). For-profit colleges. *The Future of Children*, 23(1), 137-163. Retrieved from [http://scholar.harvard.edu/files/ddeming/files/deming\\_foc\\_final.pdf](http://scholar.harvard.edu/files/ddeming/files/deming_foc_final.pdf)

Devedžić, V., & Jovanović, J. (2015). Developing open badges: A comprehensive approach. *Educational Technology Research and Development*, 63(4), 603-620.



- Engle, J. (2007). Postsecondary access and success for first-generation college students. *American Academic*, 3(1), 25-48.
- Engle, J., & Tinto, V. (2008). *Moving beyond access: College success for low-income, first-generation students* (ED504448). The Pell Institute. ERIC.  
<https://files.eric.ed.gov/fulltext/ED504448.pdf>
- Erozkan, A., Dogan, U., & Adiguzel, A. (2016). Self-efficacy, self-esteem, and subjective happiness of teacher candidates at the pedagogical formation certificate program. *Journal of Education and Training Studies*, 4(8), 72–82.
- Evans, K., & Heinz, W. R. (1994). *Becoming adults in England and Germany*. Bournemouth English Book Centre, 15 Albion Close, Parkstone, Poole, Dorset BH12 3LL, England, United Kingdom (18 British pounds).
- Gibson, D., Ostashewski, N., Flintoff, K., Grant, S., & Knight, E. (2015). Digital badges in education. *Education and Information Technologies*, 20(2), 403-410.
- Girves, J. E., & Wemmerus, V. (1988). Developing models of graduate student degree progress. *The Journal of Higher Education*, 59(2), 163-189.
- Griffith, J. (2008). Institutional motives for serving in the US Army National Guard: Implications for recruitment, retention, and readiness. *Armed Forces & Society*, 34(2), 230-258.
- Gordon, I., Quick, D., & Lyons, L. (2009). The impact of E-learning in CTE from an adult education perspective. In X. W. Wang (Ed.), *Handbook of research of e-learning applications for career and technical education: Technologies for vocational training* (pp. 155-165). DOI:10.4018/978-1-60566-739-3.ch012

- Greene, J. A., Oswald, C. A., & Pomerantz, J. (2015). Predictors of retention and achievement in a massive open online course. *American Educational Research Journal*, 52(5), 925–955.
- Grodsky, E., & Riegle-Crumb, C. (2010). Those who choose and those who don't: Social background and college orientation. *The ANNALS of the American Academy of Political and Social Science*, 627(1), 14-35.
- Hayes, D. (2012). The for-profit conundrum. *Diverse Issues in Higher Education*, 29(14), 10-11.  
Retrieved from [www.proquest.com](http://www.proquest.com)
- Hickey, D. T., & Chartrand, G. (2018). Recognizing competencies vs. completion vs. participation: Ideal roles for web-enabled digital credentials. In Kay, J. & Luckin, R. (Eds.) *Rethinking learning in the digital age: Making the learning sciences count, 13th International Conference of the Learning Sciences (ICLS) 2018 (Vol. 2)*. International Society of the Learning Sciences.
- Hilliard, T., Bushway, D., Krauss, S., Anderson, N., & Jobs for the Future. (2018). *Solving the four big problems facing CBE for underprepared college learners. Next-generation CBE. Jobs for the future (ED588451)*. ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remoteauth.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED588451&site=ehost-live&scope=site>
- Higgins, M. (2010). *The first-year experience* [Master's thesis, Kansas State University].  
<http://www.k-state.edu/first/MargaretHiggins2010.pdf>
- Jirgensons, M., & Kapenieks, J. (2018). Blockchain and the future of digital learning credential assessment and management. *Journal of Teacher Education for Sustainability*, 20(1), 145-156.

- King, J. E. (1996). *The decision to go to college: Attitudes and experiences associated with college attendance among low-income students* (ED398775). ERIC.  
<https://eric.ed.gov/?id=ED398775>
- Kirp, D. (2019). *The college dropout scandal*. Oxford University Press.
- Kirk-Kuwaye, M., & Sano-Franchini, D. (2015). “Why do I have to take this course?” How academic advisers can help students find personal meaning and purpose in general education. *The Journal of General Education*, 64(2), 99-105.
- Lawrence, D. (2000, March). Chapter 4: Assessing progress and maintaining motivation. In *Building self-esteem with adult learners* (pp. 34-40). SAGE Publications.  
<https://www.doi.org/10.4135/9781446217511.n4>
- Lee, S. H., Wehmeyer, M. L., Palmer, S. B., Soukup, J. H., & Little, T. D. (2008). Self-determination and access to the general education curriculum. *The Journal of Special Education*, 42(2), 91-107.
- Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis*, 31(1), 30-53.
- Ma, J., & Baum, S. (2016). Trends in community colleges: Enrollment, prices, student debt, and completion. *College Board Research Brief*, 4, 1-23.
- Madhlangobe, L., Chikasha, J., Mafa, O., & Kurasha, P. (2014). Persistence, perseverance, and success (PPS). A case study to describe motivational factors that encourage Zimbabwe Open University ODL students to enroll, persist, and graduate with master’s and Doctorate credentials. *SAGE Open*, 4(3). <https://doi.org/10.1177/2158244014544291>
- Mah, D. K. (2016). Learning analytics and digital badges: Potential impact on student retention in higher education. *Technology, Knowledge, and Learning*, 21(3), 285-305.

- Mattern, K., & Wyatt, J. N. (2009). Student choice of college: How far do students go for an education? *Journal of College Admission*, 203, 18-29.
- McGaha-Garnett, V. (2011). Examining university retention efforts of non-traditional students. In H. Burley (Ed.). *Cases on institutional research systems* (pp. 228–237). IGI Global. <https://doi.org/10.4018/978-1-60960-857-6.ch014>
- Moore, C., Shulock, N., & California State University, Sacramento, & Institute for Higher Education Leadership & Policy. (2011). *Sense of direction: The importance of helping community college students select and enter a program of study* (ED524216). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED524216&site=ehost-live&scope=site>
- National Center for Education Statistics. (2016). *Fast facts: Graduation rates*. Retrieved from <https://nces.ed.gov/fastfacts/display.asp?id=40>
- O'Neill, S., & Thomson, M. M. (2013). Supporting academic persistence in low-skilled adult learners. *Support for Learning*, 28(4), 162-172. DOI: 10.1111/1467-9604.12038
- Patterson, M. B., Zhang, J., Song, W., Guison-Dowdy, A., & American Council on Education, GED Testing Service. (2010). *Crossing the bridge: GED credentials and postsecondary educational outcomes. Year One Report* (ED509888). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED509888&site=ehost-live&scope=site>
- Perlmann, J., & Waldinger, R. (1997). Second-generation decline? Children of immigrants, past and present—a reconsideration. *International Migration Review*, 31(4), 893-922.

- Perna, L. W. (2016, June 7). Conclusions: Improving college access, persistence, and completion: Lessons learned. In L. W. Perna & A. Jones (Eds.), *The state of college access and completion* (pp. 208-224). Routledge. Retrieved from [www.proquest.com](http://www.proquest.com)
- Public Agenda. (2015). *Expanding opportunity for all: How can we increase community college student completion? A choice work discussion starter* (ED560084). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearchive.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED560084&site=ehost-live&scope=site>
- Reeves, T. D., Tawfik, A. A., Msilu, F., & Şimşek, I. (2017). What's in it for me? Incentives, learning, and completion in massive open online courses. *Journal of Research on Technology in Education*, 49(3-4), 245-259.
- Ross-Gordon, J. M. (2011). Research on adult learners: Supporting the needs of a student population that is no longer traditional. *Peer Review*, 13(1), 26-29. Retrieved from [go.galegroup.com](http://go.galegroup.com)
- Raish, V., & Rimland, E. (2016). Employer perceptions of critical information literacy skills and digital badges. *College & Research Libraries*, 77(1), 87-113.
- Roksa, J. (2006). Does the vocational focus of community colleges hinder students' educational attainment? *The Review of Higher Education*, 29(4), 499-526.
- Sander, P., & Sanders, L. (2006). Understanding academic confidence. *Psychology Teaching Review*, 12(1), 29-42.
- Shapiro, J., & Bray, C. (2011). Improving Retention and Enrollment Forecasting in Part-Time Programs. *Continuing Higher Education Review*, 75, 121-129.
- Shapiro, D., Dunder, A., Chen, J., Ziskin, M., Park, E., Torres, V., Chiang, T.-C., & National Student Clearinghouse. (2012). *Completing college: A national view of student*

- attainment rates. Signature [TM] Report 4* (ED538117). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED538117&site=ehost-live&scope=site>
- Sonnenmeier, R. M., McSheehan, M., & Jorgensen, C. M. (2005). A case study of team supports for a student with autism's communication and engagement within the general education curriculum: Preliminary report of the beyond access model. *Augmentative and Alternative Communication, 21*(2), 101-115.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89–125.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.
- Tinto, V. (2004). *Student retention and graduation: Facing the truth, living with the consequences. Occasional paper 1*. Pell Institute for the Study of Opportunity in Higher Education.
- Tomlinson, M. (2008). 'The degree is not enough': Students' perceptions of the role of higher education credentials for graduate work and employability. *British Journal of Sociology of Education, 29*(1), 49-61.
- Tovar, E. (2013). *A Conceptual Model on the Impact of Mattering, Sense of Belonging, Engagement/Involvement, and Socio-Academic Integrative Experiences on Community College Students' Intent to Persist*. The Claremont Graduate University.
- United States Department of Education. (2009, November). *Race to the top program: Executive summary*. Retrieved from <http://www2.ed.gov/programs/racetothetop/executive-summary.pdf>

Vila, L. E. (2000). The non-monetary benefits of education. *European Journal of Education*, 35(1), 21-32.

Walch, T. (2019, August 20). *A private college degree for less than \$9,000: How a 10-year-old school is disrupting higher education*. Deseret News. Retrieved June 18, 2020, from <https://www.deseret.com/indepth/2019/8/19/20812530/byu-pathway-worldwide-disrupt-higher-education>

ARTICLE 2

**Impact of Certificate-First Programs on Matriculation Rates**

M. Troy Martin

Brigham Young University



### **Abstract**

BYU-Pathway Worldwide (BYU-PW) is a foundations program designed to help nontraditional students become eligible for and prepared to succeed at college. This research used quantitative analysis and verified the increase in matriculation rates observed after BYU-PW modified its curriculum. Until 2018, BYU-PW focused primarily on remediating students' study skills and encouraging them to enroll in a bachelor's degree program. BYU-PW reorganized its curriculum in 2019 around a certificate-first approach where students completed the previous curriculum in addition to completing professional certificates. Certificates are stackable, meaning they can accumulate together to meet the requirements for an associate's or bachelor's degree program. This study shows that students who were offered the immediate benefit of having a professional certificate in hand had increased student confidence and persistence, which in turn raised retention rates for student moving into traditional online degree programs.

*Keywords:* student motivation, persistence, certificates, matriculation

## Introduction

Several studies have reported that individuals who obtain a college degree gain a large economic advantage over those who do not (Engle, 2007; King, 1996). While this may be a widely accepted fact, universities often struggle to retain students, especially those classified as nontraditional students (Chester, 2018; Tinto, 1993). For a variety of reasons, nontraditional students often struggle to adapt to the unfamiliar academic environment of higher education. As a result, many universities have implemented programs to assist students in their academic endeavors with varying degrees of success. One such program is the *Pathway program* at BYU-Idaho. While the Pathway program began as a distance-learning program at BYU-Idaho, it is now a separate entity and part of the Church Educational System (CES) of The Church of Jesus Christ of Latter-day Saints. BYU-PW's mission is to provide educational opportunities wherever the church is.

The initial Pathway program focused primarily on remediating students' study skills and encouraging them to enroll in a bachelor's degree program. The program sought to help students improve study skills in reading, writing, and math. Designed as an online program, with in-person meetings once a week, the program had three semesters (classes) that students could complete in one year. Upon completion of the Pathway program, students received encouragement to apply to the BYU-Idaho online degree program. While it was not necessary for students to complete the Pathway program before applying, it was recommended—especially for nontraditional students who have been away from formal education for a period.

The Pathway program had limited success with dropout rates like other for-profit schools where more than half of the students enrolled end up dropping out (Kirp, 2019). Research on this topic suggested that many of these dropouts only lasted four months before ending their efforts

(Hayes, 2012). In the case of the BYU-PW program, well over half of the student failed to matriculate, meaning that even if students completed the Pathway program, but did not enroll in a degree, which was the purpose for the program.

To improve matriculation rates, BYU-PW made the changes to its program to emphasize professional certifications. This was based on research like the 2012 report by the Senate Health, Education, Labor, and Pensions Committee where it was found that while 63% of students enrolled in an associate degree program ended up dropping out, only 39% enrolled in a certificate program left prematurely.

While the new curriculum's learning outcomes and content did not fundamentally change from one version to another, the emphasis was on assignments and learning activities that encouraged students to identify certificates that they would like to earn. This *certificate-first* emphasis in the new curriculum requires students to identify and earn credentials that count toward future online degrees if they choose to continue their academic pursuits. If the student pauses their studies rather than matriculating to an online program, the student has still earned an interim credential or certificate that they can use to seek new or better employment.

The purpose of this research is to examine the retention and persistence of students after BYU-PW's shift in focus to a certificate-first approach. When BYU-PW reorganized its curriculum in 2018 it was noted that student matriculation rates seemed to have improved. This research seeks to examine the degree to which matriculation rates have improved by answering the following research questions:

1. What was the impact on matriculation rates after BYU-PW's change to a certificate-first focus?

2. How did matriculation rates vary between students overall and in terms of demographics such as age, marital status, and gender?

### **Review of Literature**

Demand for higher education is growing, and the student body at most universities have evolving needs that often are not being met (Higgins, 2010). Many students struggle to transition from high school to postsecondary education. Once students arrive at a postsecondary education, they face a series of unique challenges that, in many cases, cause them to abandon their education. This is especially true for nontraditional student (Chester, 2018; Tinto, 1993). Complete College America (2011) reported that unless the academic community moves with more urgency, today's young people may be the first generation in American history to be less educated than their predecessors. The future success of these students may be at tremendous risk if additional resources are not dedicated to understanding their challenges and the complicated natures of their lives (Mattern & Wyatt, 2009).

Individuals entering college face many challenges. The schoolwork is harder and the competition greater. College students experience greater freedom from parents and caregivers but are required to self-regulate. Many lack the organizational and planning skills needed to succeed. In addition, many experiences financial difficulties. This is especially true for nontraditional students.

The definition of a nontraditional student varies, but the literature tends to agree that nontraditional students face increased challenges compared to traditional college students. A nontraditional student is often over the age of 24 (starting college later in life). The reasons for starting later may vary but 25% of nontraditional students qualify for college only after obtaining a General Education Development degree, or GED (Deming et al., 2013). Most nontraditional

students are the first in their family to go to college (Engle & Tinto, 2008). These students do not have the same support systems as traditional college students. Additionally, nearly 30% of nontraditional students are single parents (Deming et al., 2013). Many others are individuals that experience demanding life challenges.

For many of these students, the demands of school, work, and personal life combined with a lack of support lead them to consider dropping out (Ross-Gordon, 2011). Multiple studies, including those conducted by Lawrence (2000), Ross-Gordon (2011), O'Neill and Thomson (2013), and Perna (2016), suggested a strong relationship between a nontraditional student's self-esteem and thoughts of dropping out of school. Lack of emotional support and frustration related to pausing academic programs can cause nontraditional students to experience low self-esteem and apprehension at the possibility of re-applying and picking up where they left off (Engle & Tinto, 2008). This same study suggested that it may be especially difficult for nontraditional students to feel supported at home when they are the first in their family to go to college.

Finances are also an issue —32% of low-income students left after the first year of enrollment in their two-year program (Engle & Tinto, 2008). Recent time to completion data suggested that students are taking longer to complete their degrees or else dropping out altogether (Dadigamuwa & Senanayake, 2012). According to Dadigamuwa and Senanayake (2012), 32% of students enrolled at for-profit colleges ended up graduating within 6 years, though most programs are only supposed to last no more than two years. On average, students enrolled in a 4-year college degree are taking 5- to 6- years to complete programs (Bell, 2012). Nationally, only 43.7% of students enrolled in a for-profit institution complete their program as expected; this is approximately 20% lower than 32 years ago.

Retaining and graduating students is a serious issue for all sectors of higher education, but more so at for-profit schools because their primary student demographic consists of adults with different learning needs and personal circumstances than traditional college students (Andersen, 2020). More than half of the students enrolled in a for-profit school between 2008 and 2009 (750,000) had dropped out by 2010 with no degree (Kirp, 2019). A recent study (O'Neill & Thomson, 2013) found that, based on a 2-year-long investigation of 30 for-profit schools, 62.9% of students enrolled in an associate degree program and 38.5% enrolled in a certificate program in 2008-09 left before earning a degree. Most students only lasted four months before dropping out (Hayes, 2012).

When nontraditional students' personal lives combine with school pressures and become overwhelming, they typically leave school. Some take time off and return, thus lengthening their program completion, whereas some never return and lose the opportunity to develop new skills. Though nontraditional students enroll in community colleges and universities, they enroll in schools with short, skill-based programs that get them into the workforce faster, as for-profit schools do (Bell, 2012). With a predominantly nontraditional student population, most for-profit colleges experience high attrition rates when external pressures seemingly leave students with no other choice than to terminate their enrollment. Seventy-three percent of all students enrolled in a for-profit postsecondary institution are nontraditional students (Ross-Gordon, 2011). Nontraditional students account for 63% of all college students in all sectors, and that figure may rise to 86 % by 2019 (Bell, 2012).

Several issues have been identified as possible reasons why nontraditional students leave college before completion. One issue leading to a lack of retention is a student feeling unprepared (Barton & Donahue, 2010). Inside the classroom, many nontraditional learners have

difficulties acclimating to an academic setting. Common challenges include adjusting to new expectations and rules, being unfamiliar with institutional resources, and feeling intimidated by the need to build rapport with teachers and classmates, especially if they have been out of school for a while (Barton & Donahue, 2010; Lawrence, 2000). They typically do not participate verbally in class or ask questions, out of fear of being perceived as stupid (Lawrence, 2000).

While these issues are experienced in all institutions, they are exacerbated at schools with accelerated programs because nontraditional students are not provided the proper transitional or support skills (Higgins, 2010). Nontraditional learners also tend to struggle with technology (Gordon et al., 2009). Depending on the student's age and previous experience with technology, they may be more apprehensive and intimidated to utilize technology or seek remediation than their younger counterparts (Gordon et al., 2009). Integrating computers, online portals, or cloud-based learning can be beneficial to any learner. Still, these avenues may be intimidating to nontraditional students depending on their age, background, and previous exposure to technology. Many current nontraditional students did not grow up with technology to the same extent as the current generation of undergraduates (Gordon et al., 2009). Ultimately, these technologies can enhance a nontraditional student's learning experience, but not before they are ready (Gordon et al., 2009).

To alleviate the problems of student transition to, and retention in college, several institutions of higher education provide programs to remediate and prepare students for the challenges of obtaining a college degree. While most tend to focus on preparing student through training student to improve basic study skills and remediating foundational topics, some have attempted to increase retention by emphasizing a certificate-first approach.

Professional certificates and competency-based education (CBE) are believed by some to be a solution to the retention problem. Having students obtain professional certificates as they complete their degree may better serve struggling students and provide a bridge for them to obtain higher education and degrees (Adelman, 2006). CBE has also improved retention rates by improving student engagement and motivation. There appears to be enough research to suggest that students who obtain a credential of any kind, including a professional certificate, are motivated to continue to earn more (Gibson et al., 2015). However, there is relatively little research regarding the degree to which this happens and why this may be true.

### **Methods**

The purpose of this research was to examine observed retention benefits of the BYU-PW's college preparation program which emphasized obtaining professional certificates and CBE. After the refocus of its curriculum to a certificate-first emphasis, it was noted that matriculation rates seemed to have increased. To determine the extent to which this is true, we examined matriculation trends of two cohorts of BYU-PW students. These two cohorts (one before and one after the curriculum change) provides an "apples-to-apples" comparison of two separate student populations. This approach was designed to reveal the extent to which retention and persistence has changed due to the credential-first refocused curriculum.

From 2009 until spring 2019, the curriculum at PathwayConnect emphasized preparing and encouraging students to get accepted into a degree program at BYU-Idaho. This meant that the Spring 2018 student cohort was the last group that used the original degree-focused curriculum. After the new curriculum launch in Spring 2019, the Spring 2019 cohort became the first group of students to use the certificate-focused curriculum.



Students in both cohorts took three courses as part of the program: PC 101, PC 102, and PC 103. BYU-PW developed PathwayConnect to prepare students for the rigors of college by teaching fundamental math, writing, and study skills. Additionally, both cohorts participated in weekly “gatherings” with other students. Gatherings are designed to help students gain foundational skills, build confidence, and support one another spiritually and academically (Andersen, 2020).

The main difference between the two versions of the program involves the requirement for students to learn about, select, and complete professional certificates. In PC 101, students take a survey to gauge personal interests. The results of the survey are used to suggest which professional certificates align best with the student’s professional interests. In PC 102, students select their first certificate to complete; and in PC 103, each student selects two additional certificates that build on, or stack, toward a degree.

### **Participants**

At the time of this study, BYU-PW had just over 45,000 total students from 105 countries. Of those students, 54 percent are considered “domestic students” (i.e., living in North America). The remaining 46 percent are “international” (i.e., primarily located in the Philippines, South America, North Africa, and Europe). For this research, we focused only on domestic students from two different cohorts: the Spring 2018 cohort (those who used the old curriculum) and the Spring 2019 cohort (those who used the new, certificate-focused curriculum). We focused on domestic students to avoid conflicting variables such as the possible effect of culture on retention and persistence.

Data came from 1,416 students for this study. Table 1 presents a demographic breakdown based on the gender, age group and marital status of participants. Gender was designated as

female or male. Age grouping was done according to BYU-PW age classification which is organized using two different age groups: 18-30 years old and 31 years old and older. Marital status we designated as either single or married.

**Table 1**

*Breakdown of Participant Demographics*

Cohort	N	Gender (F/M)	Age Group (<31/31+)	Marital Status (S/M)
2018	211	120/92	111/101	138/74
2019	1204	759/445	593/611	742/462
Total	1416	879/537	704/712	880/536

**Data Collection**

This study analyzed student admissions data collected directly from the BYU-PW and BYU-Idaho registrar's offices in July 2020. The PathwayConnect (PC) program consists of three individuals' courses referred to as PC 101, PC 102, and PC 103. Only the admissions data for students who were enrolled in and completed the PC 103 program from the Spring 2018 and Spring 2019 cohorts' course have been used in this study. Not all students who join the BYU-Idaho online degree program go through the entire Pathway program. As such, this research included only those students in the two cohorts who completed PC 103 then matriculated by applying to a BYU-Idaho online degree.

Chester (2018) suggested that student persistence is best defined as the number of students who complete a diploma, certificate, or degree requirements from an institution. The main goal of the BYU-PW program is to prepare students to enroll in a degree program. Matriculation is defined as students who complete all three courses and enroll in a degree program at BYU-Idaho. Matriculation rates for each cohort were measured in August of each year as students finished the PathwayConnect program and enrolled for fall courses. To be considered as a matriculating student, the students needed to have completed each of the three

Pathway courses and remain enrolled at BYU-Idaho 3 weeks after the beginning of the semester. Most students (85%) were still enrolled and fully participating in their respective online programs after three weeks; these students were counted as having matriculated. Those who did not enroll or did not persist after completing PC103 were counted as discontinuing students.

To protect the participants' personal information, all student names, addresses, and other sensitive identifying markers were deleted. The only information provided for all PC 103 students included the following data fields: student cohort (2018 or 2019), gender, marital status, age group, and whether the student matriculated or paused their educational pursuits.

The primary independent variable is the BYU-PW curriculum. By collecting and comparing this data, the study was able to determine what effect the Spring 2019 curriculum changes had on matriculation rates. The impact of the pandemic and other economic factors did not affect this study since each cohort had completed their course of study and the enrollment process prior to March 2020.

### **Data Analysis**

Matriculation rates from both the Spring 2018 and Spring 2019 student cohorts were analyzed using descriptive statistics to determine if a significant statistical difference exists between them. Additional analysis was conducted on matriculation rates based on age, marital status, and gender.

As the variables involves are categorical (retention percentages), a Chi-Squared goodness of fit test was used to analyze differences in the matriculation rates between the two cohorts. The proportions of matriculation and discontinued students in the 2019 cohorts (observed values) were compared to the 2018 cohort baseline (expected values). This was done to determine whether there was any statistically significant difference in the proportions. An analysis of the

general matriculation rates between the two cohorts was conducted, as well as an analysis based on (a) gender, (b) age group, and (c) marital status.

### **Results**

The study included a total of 1,416 students from both cohorts. The 2018 cohort had a total of 212 students, while the 2019 cohort had 1,204. According to officials at BYU-PW, the large drop-off was likely due to the low persistence rates of students progressing through all three of the PathwayConnect courses. This study only includes students from both cohorts who completed all three courses. More students from the later cohort continued from one course to the next, as compared to the earlier cohort.

#### **General Cohort Findings**

Table 2 summarizes the matriculation data calculated using student admission data from BYU-Idaho for the 2018 and 2019 cohorts. Based on the retention comparison between cohorts there was a 35% increase in matriculation rate from the 2018 to 2019 cohort. Only 17% of the 2018 cohort matriculated into a BYU-Idaho degree program compared to 51% of the 2019 cohort. The difference between the observed values (2019 matriculation rates) and the expected values (the 2018 matriculation rates) was statistically significant ( $\chi^2 (1, N = 1416) = 1066.9, p < .001$ ). Not only did a greater number of students complete all three Pathway courses, a larger proportion of student in the certificate-first program who completed PC103 went on to enroll in a degree program.

**Table 2***Comparison of Cohort Matriculation Rates*

Cohort	Discontinued	Continued	Total
2018 Cohort	177 (83.5%)	35 (16.5%)	212
2019 Cohort	585 (48.6%)	619 (51.4%)	1204

**Matriculation Rates Analysis by Marital Status**

Table 3 presents matriculation rates disaggregated by cohort and marital status. There was a 34% increase in the matriculation rates among single students from 2018 to 2019, and a 36% increase in matriculation rates among married students for that time. Both these results were statistically significant ( $\chi^2 (1, N = 920) = 548.0, p < .001$  and  $\chi^2 (1, N = 536) = 1007.6, p < .001$  respectively).

**Table 3***Summary of Cohort Matriculation Rates by Marital Status*

Student Cohort	Discontinued	Continued	Total
2018 Single	110 (79.7%)	28 (20.3%)	138
2019 Single	335 (45.1%)	407 (54.9%)	742
2018 Married	67 (90.5%)	7 (9.5%)	74
2019 Married	250 (54.1%)	212 (45.9%)	462

**Matriculation Rates Analysis by Gender**

Table 4 presents matriculation rates disaggregated by cohort and student gender. There was a 37% increase in the matriculation rates among female students from 2018 to 2019, and a 31% increase in matriculation rates among male students for that time. Both these results were

statistically significant ( $\chi^2 (1, N = 879) = 721.5, p < .001$  and  $\chi^2 (1, N = 537) = 517.0, p < .001$  respectively).

**Table 4**

*Summary of Cohort Matriculation Rates by Gender*

Student Cohort	Discontinued	Continued	Total
2018 Female	99 (82.5%)	21 (17.5%)	120
2019 Female	345 (45.5%)	414 (54.6%)	759
2018 Male	78 (82.5%)	14 (15.2%)	92
2019 Male	240 (53.9%)	205 (46.1%)	445

### **Matriculation Rates Analysis by Age Group**

Table 5 presents matriculation rates disaggregated by cohort and age group. There was a 32% increase in the matriculation rates among students age 18-30 from 2018 to 2019, and a 37% increase in matriculation rates among students age 31 and older for that time. Both these results were statistically significant ( $\chi^2 (1, N = 704) = 980.9, p < .001$  and  $\chi^2 (1, N = 712) = 511.9, p < .001$  respectively).

**Table 5***Summary of Cohort Matriculation Rates by Age Group*

Student Cohort	Discontinued	Continued	Total
2018 18-30 years	97 (87.4%)	14 (12.6%)	111
2019 18-30 years	328 (55.3%)	265 (44.7%)	593
2018 31+ years	80 (79.2%)	21 (20.8%)	101
2019 31+ years	257 (42.1%)	354 (57.9%)	611

**Discussion and Conclusions**

The purpose of this study was to determine the degree to which matriculation rates have changed after BYU-PW changed its curriculum from a degree focus to a certificate-first approach. The matriculation rates of two cohorts (one before and one after the PathwayConnect curriculum change) were compared to determine whether and to what extent any change occurred. Based on preliminary descriptive data, the null hypothesis of this study assumed that there would be a statistically significant difference between the two cohorts. Results from this study support the null hypothesis.

An analysis of these data shows an overall positive increase in matriculation rates from 2018 to 2019. Not only was there a dramatic increase in the number of students who completed the Pathway program, overall, there was a 35% increase in the number of students who matriculated by enrolling in a degree program at BYU-Idaho after completing all three PathwayConnect courses. This positive trend persisted for student regardless of gender, marital status, and age group. BYU-PW's certificate-first curriculum change appears to have improved retention rates overall and for each of the demographic groups examined in this study.

While the results of this study are not causal, they are encouraging. One limitation of the analysis is our inability to track students who dropped out prior to completing all three PathwayConnect courses. We did not have data on these students. For example, they may have decided to enroll in college without completing the Pathway program. However, BYU-PW personnel believe the decreased number of students completing the degree focused curriculum was likely due to the low persistence rates of students progressing through all three of the PathwayConnect courses.

This focus on the relationship between certificate-first programs and retention is timely because many higher education institutions are seeking to improve student motivation, retention, and persistence (Barton & Donahue, 2010). While these results are promising, further research is needed to explore the reason why students are choosing to persist. Given that the main difference between the two cohorts was the modified curriculum and its emphasis on earning a professional certificate, it is reasonable to assume the improved matriculation rates can be attributed to the introduction of the certificate-first option. However, future studies might focus on gathering international student matriculation rates and obtaining data related to students' perception of, and reasons for the increased motivation and persistence they had to continue their educational pursuits.

This study's objective was to determine if there was a significant statistical difference between the matriculation rates of the two cohorts. The data collected and presented in this article support the proposition that a statistically significant difference does exist. This study provides evidence that a strong relationship exists between BYU-PW's change in curriculum and improving the matriculation rate—not just for the two cohorts but also for several identified demographic categories.



## References

- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. U.S. Department of Education.
- Andersen, C. L. (2020). *Improving Mentoring in Higher Education (75)*. [Doctoral dissertation, Brigham Young University]. BYU Scholars Archive
- Barton, A., & Donahue, C. (2010). Multiple assessments of a first-year seminar pilot. *The Journal of General Education*, 58(4), 259-278. Retrieved from <http://content.ebscohost.com/ContentServer.asp?EbscoContent=dGJyMNLe80SeqLA4yOvqOLCmsEmepRFSSKu4SLSWxWXS&ContentCustomer=dGJyMPGuskyurK5IuePfgeyx43zx1%2B6B&T=P&P=AN&S=R&D=eft&K=508036790>
- Bell, S. (2012, March 8). Nontraditional students are the new majority: From the bell tower. *Library Journal*. Retrieved from [http://lj.libraryjournal.com/2012/03/opinion/nontraditional-students-are-the-new-majority-from-the-bell-tower/#\\_](http://lj.libraryjournal.com/2012/03/opinion/nontraditional-students-are-the-new-majority-from-the-bell-tower/#_)
- Chester, T. D. (2018). *Factors affecting employee persistence in an online management development certificate program* [Doctoral dissertation, Walden University]. Walden University ScholarWorks. Retrieved from <https://scholarworks.waldenu.edu/dissertations/5063/>
- Complete College America. (2011). *Time is the enemy: The surprising truth about why today's college students aren't graduating... and what needs to change* (ED536827). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remoteauth.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED536827&site=ehost-live&scope=site>

- Dadigamuwa, P. R., & Senanayake, S. (2012). Motivating factors that affect enrolment and student performance in an ODL engineering program. *International Review of Research in Open and Distributed Learning*, 13(1), 238-249.
- Deming, D., Goldin, C., & Katz, L. (2013). For-profit colleges. *The Future of Children*, 23(1), 137-163. Retrieved from [http://scholar.harvard.edu/files/ddeming/files/deming\\_foc\\_final.pdf](http://scholar.harvard.edu/files/ddeming/files/deming_foc_final.pdf)
- Engle, J. (2007). Postsecondary access and success for first-generation college students. *American Academic*, 3(1), 25-48.
- Engle, J., & Tinto, V. (2008). *Moving beyond access: College success for low-income, first-generation students* (ED504448). The Pell Institute. ERIC. <https://files.eric.ed.gov/fulltext/ED504448.pdf>
- Gibson, D., Ostashewski, N., Flintoff, K., Grant, S., & Knight, E. (2015). Digital badges in education. *Education and Information Technologies*, 20(2), 403-410.
- Gordon, I., Quick, D., & Lyons, L. (2009). The impact of E-learning in CTE from an adult education perspective. In X. W. Wang (Ed.), *Handbook of research of e-learning applications for career and technical education: Technologies for vocational training* (pp. 155-165). DOI:10.4018/978-1-60566-739-3.ch012
- Hayes, D. (2012). The for-profit conundrum. *Diverse Issues in Higher Education*, 29(14), 10-11. Retrieved from [www.proquest.com](http://www.proquest.com)
- Higgins, M. (2010). *The first-year experience* [Master's thesis, Kansas State University]. <http://www.k-state.edu/first/MargaretHiggins2010.pdf>

- King, J. E. (1996). *The decision to go to college: Attitudes and experiences associated with college attendance among low-income students* (ED398775). ERIC.  
<https://eric.ed.gov/?id=ED398775>
- Lawrence, D. (2000, March). Chapter 4: Assessing progress and maintaining motivation. In *Building self-esteem with adult learners* (pp. 34-40). SAGE Publications.  
<https://www.doi.org/10.4135/9781446217511.n4>
- Mattern, K., & Wyatt, J. N. (2009). Student choice of college: How far do students go for an education? *Journal of College Admission*, 203, 18-29.
- O'Neill, S., & Thomson, M. M. (2013). Supporting academic persistence in low-skilled adult learners. *Support for Learning*, 28(4), 162-172. DOI: 10.1111/1467-9604.12038
- Perna, L. W. (2016, June 7). Conclusions: Improving college access, persistence, and completion: Lessons learned. In L. W. Perna & A. Jones (Eds.), *The state of college access and completion* (pp. 208-224). Routledge. Retrieved from [www.proquest.com](http://www.proquest.com)
- Ross-Gordon, J. M. (2011). Research on adult learners: Supporting the needs of a student population that is no longer traditional. *Peer Review*, 13(1), 26-29. Retrieved from [go.galegroup.com](http://go.galegroup.com)
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.

ARTICLE 3

**Understanding Improved Matriculation Rates Found in a Certificate-First Program**

M. Troy Martin

Brigham Young University

### **Abstract**

This study attempted to better understand improvements in the matriculation rates trend resulting from a change in BYU-Pathway Worldwide (BYU-PW)'s curriculum for nontraditional students preparing to go to college. In 2018, BYU-PW re-organized its curriculum for student preparing to enter college in a way that encourages student to obtain professional certificates. While this new approach provided a positive effect in the retention of students in the program, this study explored the reasons for the increase. It was found that this new approach offered the immediate benefit of having a professional certificate in hand, something most non-traditional students valued. Additional outcomes of this research suggest that obtaining professional certificates may increase students' confidence and motivation to persist in school. This was found to have resulted from five key factors: (a) earning a certificate was a significant achievement and encouraged them to earn more, (b) the certificate allowed participants to obtain better employment, (c) satisfaction in acquiring new skills that benefited other aspects of their life, (d) the positive impact of a strong support network, and (e) elimination of traditional barriers to matriculation.

*Keywords:* student motivation, persistence, certificates, matriculation

## Introduction

Universities have a retention problem (Kirp, 2019). Despite the upward trends in university enrollment, increased demand and shifting student demographics have created problems with retention, persistence, students transitioning, the technology literacy gap, the confidence gap, and inadequate attrition models (Astin, 1998). These problems are likely to worsen as nontraditional students come to characterize a larger subset of the student body that seek to obtain degrees (Becker, 1992; Clery & Achieving the Dream, Inc., 2010; Hilliard et al., 2018). Nontraditional students often find that the transition to college is a complex process. Students who attempt this complex transition alone often find it difficult to succeed in higher education. To alleviate the problems of student transition to and retention in college, several institutions of higher education provide programs to remediate and prepare students for the challenges of obtaining a college degree (Cabrera et al., 2005). While most college prep programs tend to focus on preparing student through training student to improve basic study skills and remediating foundational topics, some have attempted to increase retention by emphasizing a certificate-first approach. These programs give students a professional credentialing options that certifies a student has mastered a specific competency or skill (Bailey & Belfield, 2017). One such program is Brigham Young University-Pathway Worldwide (BYU-PW).

A previous study of the BYU-PW's certificate-first approach in its college preparation program (Martin, 2021) verified that the matriculation rates had improved overall. Not only was there a dramatic increase in the number of students who completed the Pathway program once the initiative changed from a basic college preparation course to one the focused on helping students obtain professional certificates, overall, the there was a 35% increase in the number of

students who matriculated by enrolling in a degree program at BYU-Idaho after completing all three PathwayConnect courses. This positive trend persisted for student regardless of gender, marital status, and age group.

From 2010 to 2018, student persistence rates at BYU-PW were consistent with national and international averages at around 34% (Chester, 2018). In 2018, after BYU-PW made a strategic change to promote a *certificate-first* focus, over half (51%) of the students enrolled in the PathwayConnect program matriculated. This represented a 35% increase in student retention. While these results were extremely promising, this study seeks to understand what contributing factors may have contributed to this increase by interviewing students who were enrolled during this time. This qualitative study seeks to understand why matriculation rates increased for this group of students who were encouraged to first earn a professional certificate before entering a bachelor's degree program.

### **Research Questions**

This study addresses the following research questions:

1. What benefits do students perceive from earning a professional certificate?
2. What motivating factor most influenced the students' decision to continue their academic studies?

### **Review of Literature**

It is believed by many that obtaining marketable skills in the form of postsecondary credentials (e.g., a college diploma or degree) is a critical factor to long-term, sustained financial success (King, 1996). Having a degree is also crucial for improving an individual's social mobility (Engle, 2007). As a financial investment, a college degree opens new opportunities and benefits the recipient for a lifetime (Becker, 1992). Due to the perceived value and social

benefits that a college education brings, it is assumed that all students in the United States should be "college-ready" when they graduate from high school (Cabrera et al., 2005). Not surprisingly, almost 70 percent of all high school graduates in the United States enroll in some form of postsecondary education shortly after graduation (Baum et al., 2013).

While access to higher education has grown over the past few years, significant barriers remain for many potential students, including financial barriers, poor academic preparation, and a general lack of support from family and friends (Engle, 2007). These barriers, along with a growing retention problem, are of such significance Perlmann & Waldinger (1997) believe today's young people will be the first generation in American history to be less educated than their predecessors. The ever-widening gap between those with the opportunity and means to attend college and those without those means and opportunities has led to an increase in alternative college experiences and credentials, including the ability to study exclusively online to earn digital credentials such as badges and certificates (Grotsky & Riegle-Crumb, 2010; Tomlinson, 2008). Potential employers are increasingly accepting of candidates with alternative credentials; this is a welcomed change from the traditional outlook that only candidates with a traditional degree could apply for and obtain employment (Gibson et al., 2015). As a result of this gap and the acceptance of alternative credentials, the definition of a traditional student has changed (Astin, 1998).

*Traditional students* are broadly defined as individuals between the ages of 18-22 who transition directly from high school to a college or other institution of postsecondary education with a full-time status (Adams & Corbett, 2010). *Nontraditional students* are individuals over the age of 23 with either a full-time or part-time status who are seeking a college degree or similar credential (Bowl, 2001). A nontraditional student may start college later in life for a variety of



reasons, but 25% of nontraditional students qualify for college only after obtaining a General Education Development degree (Deming et al., 2013). Most nontraditional students are the first in their family to go to college (Engle & Tinto, 2008). These students do not have the same support systems as traditional college students. Additionally, nearly 30% of nontraditional students are single parents (Deming et al., 2013). Many others are individuals that experience demanding life challenges.

Recent evidence suggests that the proportion of nontraditional students has been steadily increasing (Cantwell et al., 2001; Raish & Rimland, 2016). Given that the nontraditional student tends to be some of the most likely to drop out of college, the challenge for many institutions of higher education is to determine how best they might support these students (Long & Kurlaender, 2009; Mattern & Wyatt, 2009). The future success of these students may be at tremendous risk if additional resources are not dedicated to understanding their challenges and the complicated natures of their lives. There is a growing trend for colleges to offer alternative credentials in the form of professional certificates to serve nontraditional students' needs.

### **Certificate-First Credential Programs**

The concept of credentials and certificates is not new. The practice of earning credentials in a specific trade issued by an approved or accredited institution dates to medieval times (Evans & Heinz, 1994). Some researchers believe that a curriculum based on students earning professional certificates and completing credentialing programs may be the best solution to increase the rate of matriculation and boost retention (Mah, 2016). The research on student engagement, persistence, and retention suggests a connection between motivation, persistence, and the value of credentialing programs. It is generally acknowledged that alternative credentials have the potential to alleviate a perceived educational void by providing a bridge for

nontraditional students to obtain additional education and better employment. Alternative credentials have enabled many students to obtain meaningful employment faster than traditional students and have even enabled them to continue their education until they earn traditional degrees (Bailey & Belfield, 2017). Kirp (2019) suggests that one of the most powerful predictors of increased academic confidence and success is the students' perception of their school's support for their academic, personal, and social needs. In addition to providing exceptional mentoring and support services, assisting students in identifying and earning certificates appears to increase student confidence and persistence rates in matriculating to more traditional online degree programs (Walch, 2019). This potential phenomenon of nontraditional students earning alternative credentials and then continuing their education may suggest possible increases in student retention and persistence.

In addition to the support identified above, further research suggested that motivation to continue may increase as students gain more academic confidence (Sander & Sanders, 2006). Monetary incentives may be the most compelling reason why students choose to continue. Unlike completing general education courses, completing a credential allows the student to benefit immediately by obtaining better employment or scholarships to offset tuition costs (Vila, 2000). Bank (1995) suggested that students with a postsecondary education that provides professional certificates and credentials will advance in their careers and have higher persistence rates. Certificate programs may produce better workers and more successful university students. Competency-based education (CBE) programs may be an effective solution for improving the educational outcomes of an increasingly diverse student population. Professional certificates and CBE appear to provide many benefits to both students and institutions and may fill an educational void that could provide a bridge for them to obtain higher education and degrees

(Adelman, 2006). These programs improve student motivation, encourage early program selection, improve educational outcomes, and attract more students into universities. If institutions of higher education do not consider potential solutions to the retention problem, they will fail to educate the next generation and risk being disrupted by a more innovative educational model.

### **Methods**

This study obtained Institutional Review Board (IRB) from Brigham Young University (BYU) approval to interview students who were part of each cohort to better understand improvements in the matriculation rates trend resulting from a change in BYU-PW's curriculum for nontraditional students preparing to go to college. In 2018, BYU-PW re-organized its curriculum for student preparing to enter college in a way that encourages student to obtain professional certificates. An analysis of the data obtained from BYU-Idaho and BYU-PW found that retention rates for student enrolled in PathwayConnect courses that encourage student to obtain professional certificates improved and matriculation rates increased by 34%. What we did not know was why. While this new approach did increase retention of students in the program and considerably more students matriculated from BYU-PW by enrolling in a degree program at BYU-Idaho, this study explored the reasons for the increase.

### **Participants**

BYU-Pathway Worldwide currently serves just over 45,000 students in 105 countries. Of those students, 54 percent are domestic (i.e., living in North America), while the remainder of the students are international (i.e., primarily located in the Philippines, South America, North Africa, and Europe). Our research focused on domestic students from two different cohorts: the Spring 2018 cohort (those that used the old curriculum) and the Spring 2019 cohort (those that used the

new, certificate-focused curriculum). Focusing on domestic students reduced conflicting variables, such as the possible effect of national culture on retention and persistence. This study acquired student information from both the 2018 and 2019 cohorts. Additional information included the student's name, email address, home address, marital status, gender, and age. Most importantly, the provided information identified students who completed the PC 103 course and matriculated to BYU-Idaho. Only domestic students who completed the PC 103 course and lived in North America (n=1416) were used in this study.

To answer the questions posed by this research, purposive quota sampling was used to identify participants of this study. A basic criterion for selection required a student to have completed all three BYU-PW semesters. From there, several participants were randomly selected students from three different demographic categories: marital status, gender, and age. This was done to obtain a representative sample of those in the participant population. To identify candidates eligible for participation in this research study, we first sorted the information by cohort (n=212 from 2018 and n=1204 from 2019). Within each cohort, students were organized demographically according to the student's age, gender, and marital status. This process created three separate groups within each cohort.

My goal was to interview 15 students from each cohort with a similar number of students from each of the three demographic categories. Of the 15 students from each cohort, we invited 10 who matriculated and 5 who did not. I chose to interview more students who had matriculated because the focus of the study was to understand why students chose to matriculate.

Once sorted, 100 students were randomly selected from each cohort and were sent email invitations to participate in this study. The first 15 students from each cohort who replied and indicated that they would like to participate were selected for interviews. The next five students

from each cohort who replied were saved in a queue if a participant decided to withdraw from the study. We believe this approach provided the best way to avoid bias in the selection of participants.

After selecting students and interviews scheduled, I interviewed all 30 (n=30) students. Ten students from each cohort earned a certificate and matriculated to BYU-Idaho. Five students from each cohort chose to pause their studies after completing PC 103. Eight students from each cohort were from the 31+ age group and married. Eight participants from each cohort were female.

### **Data Collection**

Data collection was done through two different interview formats: individual interviews and focus group interviews. The purpose of the interviews was to better understand why students chose to continue their studies after completing the PathwayConnect program. All the interviews were conducted from November to December 2020 via Zoom calls (Version 5.6.5; Zoom Video Communications, Inc., 2020). Each interview session was recorded and transcribed. Individual interviews took 45 minutes on average, while group interviews were 90 minutes.

Each interview session began with introductions and an overview of the research that was being conducted. Everyone was required to participate by completing a short survey (see questions below) and subsequently by sharing additional information and clarification about their responses. To avoid groupthink and encourage original responses, the surveys were conducted individually, and responses were kept confidential. The researcher used the responses that were given to gather additional information by asking follow-up questions. This format was familiar to the participants as they were used to sharing thoughts and ideas in a group context in an online setting, as weekly PathwayConnect courses are conducted in a similar way.

In the interviews, all participants were asked questions following a semi-structured format. Four of the interviews were conducted in a group setting to accommodate scheduling conflicts and any concerns about meeting online alone. All participants in the group interviews had the opportunity to respond to each question. After many hours of interviews several common themes emerged, and the collected data seemed to reach a theoretical saturation. I recorded all interviews using the online Zoom feature on my computer. A third party transcribed the interview data and stored on my personal computer, which is password protected.

The basis for the interview questions came from examples of effective interview questions from Merriam (2009). Through open-ended questions, participants elaborated on their decision to earn a certificate and motivations for continuing their academic pursuits. Interview questions included:

1. Did you matriculate to BYU-Idaho after completing BYU-PW?
2. Prior to enrolling in BYU-PW, did you have an idea about what subjects or programs you wanted to study?
3. What professional certificates did you choose, and why?
4. Did earning a professional certificate influence your choice to pursue a degree? If so, how?

### **Data Analysis**

After the data were collected and transcribed, data were analyzed using a holistic and interpretive stance with an emphasis on key themes (Braun et al., 2019; Spradley, 1979; Stake, 2010; Yin, 2017). Based on the Stake (2010) coding method, data were sorted and classified by major categories related to the research question. In repeated analyses of the data, additional themes emerged from the categories. As themes emerged, they were sorted multiple times for

further understanding; through this process, topics and subtopics were identified and organized into key themes. The comprehensive analysis and the study discussion and findings resulted from further analysis and synthesis of all the interview data.

### **Trustworthiness**

This study relied on Guba and Lincoln's (1994) recommendations for trustworthiness for increased data analysis credibility. First, I interviewed a random sample from separate cohorts. This sample provided diversity for participant response data. Interview themes were reviewed and verified with data analysts and administrators from both BYU-Idaho and BYU-PW for meaning and clarity using verbal confirmation. This review ensured that the gathered and presented information was consistent with both institutions' overall organization and goals without introducing bias or influence into the research management, sponsor involvement, and motivations.

The findings and the participants' responses were also sent to the original participants to determine if they agreed with research interpretations. For peer debriefing, findings were reviewed and discussed with colleagues, employees at both institutions, and peer scholars. An academic colleague also reviewed and coded some of the interview data for comparison with researcher results. Based on the peer debriefing and coding outcomes, adjustments were made to the study analysis to bring unity to the overall assessment of responses.

For negative case analysis, interview responses were compared to existing BYU-Idaho and BYU-PW data, including prior survey data conducted by each institution, to identify potential differences in results. Findings and categories were evaluated in consideration of any contrary evidence. The researcher then provided the contrary evidence and overall findings to an additional person for external review.

## **Limitations**

While a random selection of students was interviewed for this study, additional interview data with different students will vary. With more than 1,416 students from both cohorts, many alternative student experiences, comments, and perspectives exist. Future research may yield different themes, motivations, and findings depending on additional demographic categories. Future research may also include students from other countries and economic backgrounds.

Another limitation of this study is that all students who participated belong to The Church of Jesus Christ of Latter-Day Saints and are likely to have a consistent perspective on various religious principles. Similar ideologies and beliefs may not apply to other online postsecondary education programs. The desire to obtain as much education as possible, a key belief among students from this religious background, may not be relatable in other educational environments.

The participants were eager to share their perspectives and seemed to be in good spirits even though this study was conducted during the holiday season and in the middle of a global pandemic (COVID-19). While the students who participated in this study had decided to continue their studies prior to the COVID-19 pandemic, many may delay their studies due to the ongoing health crisis. This study only focused on understanding students' motivations for continuing their education before the current pandemic. Lastly, interviews were conducted during the holiday season, which may or may not affect the responses that were given.

## **Results**

This study examined the motivating factors that contributed to an increase in matriculation rates from BYU-PW to BYU-Idaho's online degree program between 2018 to 2019. Study results from student interviews confirm that a higher percentage of students from the 2019 cohort decided to continue their education and obtain a bachelor's degree. Based on the



results of the interview coding and analysis, it was apparent that students were more motivated to continue their education because they had more confidence and believed that if they kept going, they would be successful.

### **Student Personas**

From the study, three different personas emerged that reflect who these students were. The following personas for “Steve, Mary, and Gabrielle” are fictional and do not represent any specific person. They do however represent typical students enrolled in BYU-PW.

#### ***Persona 1***

Steve is a 20-year-old, single, white male who graduated from high school but spent a few years living on the streets and dealing with addiction issues. Now sober and living with a relative, he is trying to get his life on track and would like to pursue a career in counseling at-risk children. Because his SAT/ACT scores were low, he could not get accepted into any of the colleges near where he lives. He is working two paid-by-the-hour jobs to earn money for tuition and can't attend classes taught during the day. He likes the flexibility of online programs that allow him to attend live and recorded classes as his schedule permits. He completed the PathwayConnect program due to the amount of support and mentoring he received. Upon completion of the PathwayConnect program, he was able to earn a certificate that he included on his resume to obtain a higher-paying job. He is in the second semester of his online degree program and performing at a high academic level.

#### ***Persona 2***

Mary is a 32-year-old, divorced, white female with three kids aged 10, 8, and 5. To earn money, she teaches piano lessons from her home and works part-time as a music teacher at a local elementary school. She would like to earn a degree that will allow her to become a full-time

music teacher at the junior and high school levels. After graduating from high school, she spent 2.5 years in college taking General Education courses and some courses in music. She had relatively good grades and would like to transfer most, if not all, of the 43 credit hours she earned several years ago. Mary enjoyed PathwayConnect and was able to get through all three semesters with relative ease. She is now attending classes at BYU-Idaho as a junior and is 1.5 years away from graduation. BYU-PW helped her realize she could take classes online and become familiar with all the required technology. She also appreciated the ability to take care of her kids and teach piano from her home.

### ***Persona 3***

Gabrielle is 25 years old and met her American husband while he was a missionary in her native country. She has spent most of the past few years learning the English language and working for her father-in-law as a translator. She would like to become a paralegal and continue to work in international law. Learning English was a challenge, but she was able to pass the TOFEL exam and obtain a proficiency level of intermediate-high in both reading and writing. Completing the PathwayConnect program gave her the confidence she needed and the added experience in taking classes in English to apply for the BYU-Idaho online program. She is now in her third semester and doing very well.

### **Trends and Patterns**

This study sought to understand why these students completed PathwayConnect and finally enrolled in an online degree program. What changed their minds? What drove their desire to overcome past obstacles? After conducting hundreds of hours of interviews and analyzing the results, some common themes began to form that suggest possible reasons as to why these students' perspectives toward education had changed.

The purpose of this study was to understand the “why” behind this increased confidence and identify specific reasons or evidence for the perceived increase in persistence. Once analyzed, the collected data suggested five common themes (in highest priority order): (a) gaining confidence by overcoming familiar challenges and completing the program to earn a certificate, (b) using the certificate to seek and obtain better employment, (c) the development of new skills and abilities that helped participants in other aspects of life, (d) the influence of a strong support network, including instructors, mentors, advisors, classmates, and family, and finally, (e) how the program reduced traditional barriers in applying for and being accepted in a degree program.

### ***Theme 1: Increased Academic Confidence***

Most of the students in the study could be described as nontraditional students. All the participants shared that they had had negative experiences in education prior to participating in PathwayConnect. While most participants had completed high school, many admitted to dropping out or pausing postsecondary education in their past. All participants shared that they had started and stopped some form of an educational program after high school, such as community college or a degree program, multiple times. School was simply not a positive part of their lives and was a source of increased depression and anxiety. During a one-on-one interview, one student said,

You are told that to be successful, you need to go to school and get a degree. When I would interview for jobs, almost all of them I was interested in required a degree of some sort. So, I would muster up the courage to apply and enroll in classes. Then life would hit in some way, and it was easy just to quit and deal with things. After starting and stopping college many times, you just feel like a loser. You wonder how everyone else can keep

going. The most embarrassing thing is showing up to a class you've dropped out of, and the teacher says something like, 'Look who's back!' It's demoralizing.

Another student pointed out that,

I was able to enroll in college and do well for a year or two. Then fees and tuition would go up, and I wouldn't have enough money to continue. You can apply for student loans or borrow money from family but going into debt just seems to weigh me down, especially when you're taking classes that are required but aren't really things that will help me learn the skills I need to get a job. The last time I dropped out, I had a ton of debt and had taken a bunch of classes that were pretty much worthless to me. It's then that you get depressed and just don't want to keep going.

While these comments aren't unique, they underscore a common theme that nontraditional students face when trying to earn a degree. Basically, they needed to gain confidence in their ability to succeed.

The study found that 85% of the participants attributed their increased motivation and academic confidence to the fact that they had earned a professional certificate. While pressing participants to explain their responses, a prevailing theme emerged. Most participants' prior experience in education was one of frustration, and most had experienced negative outcomes. Many of the participant's comments confirmed that the PathwayConnect program was very challenging, and almost all of them shared that they had wanted to quit, as they had done in other programs, on more than one occasion.

The positive comments highlighted the feelings of pride and accomplishment that participants experienced because they had *earned* something of an academic nature. Many participants declared that this was the first time they had completed a postsecondary program of

any type, and the success caused them to want to do it again. Many others commented that the certificate was more than a *participation trophy* that everyone receives; it was a legitimate award that proved they had done something hard, something meaningful.

A participant from a one-on-one interview said:

The moment I received my certificate, I was able to share what I had done to earn it. It was not just something you get by showing up. I was able to share in a job interview the skills that I had obtained, such as writing and giving presentations.

Another participant from Interview 3 said:

This (certificate) was a legitimate sign that I had acquired new skills. The fact that BYU was listed on the certificate was impressive to my boss, and she encouraged me to keep going and to post it on LinkedIn as an achievement. Until that moment, I didn't really have anything past high school on LinkedIn. Once I posted my certificate, I immediately began receiving more messages about other schools and job opportunities. It was magic.

Many participants' comments were centered around the sentiment of being able to share their achievements with others. They also emphasized the moment when they realized that the certificate they earned would count toward additional certifications and degrees. One student from Interview 3 said:

The moment I realized that my certificate would count toward earning an associate degree was a game-changing moment for me. I realized that this was just the beginning and that by earning this certificate, I could basically do it again and again and end up with an associate degree. At that point, I realized I was well on my way to earning a bachelor's degree. Once I realized that, I didn't want to quit, I couldn't quit.

Another student from Interview 4 said,

When you first look at earning a bachelor's degree out of high school, all you see are tons of classes that aren't interesting and are still required. Then you start adding up credit hours and dividing them up by semester, and unless you take a lot of classes each semester, it looks like it would take years and years to complete. Most normal college students can take a lot of classes each semester, but with a job and family, I simply don't have the time. This is super discouraging, and in the past, I'd simply give up. Why bother. But when I did Pathway, they teach you that you can break these up into chunks. Not only are the chunks doable, but at the end of each, you have something [certificate] you can show your boss or friends and family. Then, when you realize if you can do this one, you can do another one. Breaking it up like that gave me hope, and that led to me re-enrolling for the next semester.

One student from Interview 2 said that,

Earning a certificate at Pathways emphasized the value of education and that higher learning was attainable. I had never earned something like this before, and I realized that if I could do this once, I could do this again. For whatever reason, it created a drive in me to do more. To earn more certifications or add to what I had already done.

A student from Interview 3 said, "BYU-PW showed me that I was actually smart enough to do college classes, that I had the ability to take college classes without failing". Another student from Interview 1 said, "I never wanted to pursue education before, but Pathway gave me the confidence to pursue education and gain my degree". A student from Interview 4 said, "BYU-Pathway set me up for success, gave me confidence in my abilities, and showed me I have what it takes, while also teaching me to rely on God in my educational process".

These comments show that when students realize they can do something positive in an academic setting, it creates a desire to keep going. Breaking up a degree program into smaller pieces like certificates builds academic confidence and gives students the desire to persist and build (or stack) additional credentials that count toward an advanced degree. Awarding students with credentials provides them an immediate return on investment that they can share with friends, family, bosses, and through social media applications like LinkedIn.

### ***Theme 2: Better Employment***

The results of the study revealed that 68% of the participants shared that they had used their professional certificates to obtain better employment. In many cases, the newly acquired certificate had introduced them to a new career field, but most said that it resulted in a salary increase. One student in Interview 2 said:

The day after I received my certificate in the mail, I took it and showed my boss and told him I wanted more money! I was amazed when he said, 'let me see what I can do.' After a few weeks, I received a bump in my hourly wage that had pretty much not changed for a year or so. I was amazed. That instantly made me want to get another one.

As one student from Interview 3 said:

Pathway got me interested in pursuing Life Coach training, which was a job I didn't even know about. But once I was able to share my story and the certificate I earned, with a friend I was able to get a job with a professional training company. The certificates make things move along in a way I can continue to build on.

Another student from Interview 1 said:

I completed the first certificate in the Marriage and Family Studies Degree last semester, and it gave me the confidence to apply for an intern job with a local company. While I

don't yet have a degree in Marriage and Family Studies, my boss was impressed that I was familiar with many of the terms and principles. I will be asking for a raise after I finish my next certificate, as I will also take on additional responsibilities at work.

Another student from the same interview group followed up with a similar comment:

That's exactly what I did! I saw a job that I was interested in that sounded like it required experience in things I had done in Pathway. Normally, I would not have applied because I didn't have something tangible that I could post on my resume. Being able to post my achievement from BYU Pathway was like bringing my instructor with me to the interview! I felt like I had someone else saying, 'Yes, she can do that! I've seen her do it in our class.' That thought gave me the confidence and courage to apply. And I got the job! Not only that, but now I'm managing a couple of people and encouraging them to do Pathway like I did.

A participant from a one-on-one interview shared another aspect of earning certificates that was also confirmed in several group interviews. He said:

What's cool about earning multiple certificates is that you can list each one of them on your resume. So, visually it makes it look like you've done a ton of school—which I have—but in the past, you can't exactly list out all the GE credit classes I took. It was cool to list those on a job application and to talk about each in interviews and show how one led to another. The guy I interviewed with, now my boss [pplause from other participants], basically just asked me about what the certificates were and how they were connected. It was pretty cool.



### *Theme 3: New Skills*

BYU-PW provides opportunities for students to develop academic skills, such as how to study, write effectively, and prepare for tests. One student from Interview 1 said:

Pathway prepared me with the basics that most students learn in high school, like how to study and take tests. Even though I'm late to the game, Pathway taught me that I could still learn those skills even after not being in school for 20 years.

A student from Interview 2 said, "I have been able to utilize my new skills and knowledge, and I have helped my friend set up a social media account for her business".

Many students shared that being able to study and write effectively gave them a new sense of confidence in non-academic settings. One student from Interview 3 said:

There was a week or two of lessons that focused on how to study. At first, I was like, 'I already know how to study—I just don't do it.' Was I ever wrong! Starting with how to organize your schedule and block off time to study and identify the topics you study and to put it in a calendar really helped. The other thing I learned was to remove distractions like my phone and TV so that I could focus. Dumb little things like that really helped. And they're things I still do today!

The ability to write effectively was mentioned by many participants. Specifically, they discussed how writing had improved their ability to communicate in social and professional settings. A participant from Interview 1 said:

We had an assignment where we had to learn how to write an effective email. I was pretty skeptical at first, thinking that I already knew how to write an email since I've been doing it for 20 years. A few seconds into the lesson, they were talking about how to effectively give an email a title and a structure for how to communicate in fewer words. It

was profound. I began using this at work and my boss had me teach the rest of our team what I had learned. It was a cool moment!

#### ***Theme 4: Support Structure***

In addition to building academic confidence, a lot of students talked about their increased confidence in their support structure (including instructors, service missionaries, mentors, and academic advisors). Through the course of the interviews, it became apparent that many of the participants had experienced negative interactions in the past when they had questions or needed help and guidance. One student said:

One nice thing about the Pathway program is that you can ask a lot of dumb questions, and people will still help you. From the beginning of the program, you have to figure out what you're going to major in and what certificates you are going to earn to prepare.

Because all the staff are aware of these assignments and that most students have no clue how to choose, they were able to help me figure out what I wanted to do after Pathway.

One student suggested that:

BYU-Pathway set me up for success, gave me confidence in my abilities, and showed me I have what it takes, while also teaching me to rely on God in my educational process. I learned how to ask for help and not be too embarrassed for doing so. I was able to ask our missionaries for help as I was doing homework assignments. Mentors helped me not to give up when I was ready to quit.

Another student from Interview 2 said, "PW (Pathway) is amazing! Even though I haven't completed a degree as of yet, the missionaries [support volunteers] and support staff were so amazing. Even if I wanted to quit, they wouldn't let me, and it got to the point that I didn't want to let them down." A student from Interview 1 said,:

Great structure, guidance, and opportunities set me up for success through Pathways.

Pathway is like a ride at Disneyland—once you get on the boat, you really don't want to get out. If you just sit back and do what they tell you to do, you'll get to the end. It's a fascinating support structure that I wish I had earlier in my education.

### ***Theme 5: Reduced Barriers***

Many students commented that their confidence and motivation were increased because BYU-PW and BYU-Idaho minimized traditional barriers that college students face by keeping tuition costs affordable, improving access to classes, and providing convenient class times. One student from Interview 4 said, "I was able to earn a certificate because Pathway made things that were hard about school easy. First, the lower cost for tuition. Second, all [the classes] are online and mostly doable on my own schedule". Another student from Interview 2 said:

Why did I continue school? Well, the price of the tuition and the support of getting ready through [PathwayConnect] encouraged me. My experience...matriculating to BYU Idaho has caused me to almost stop pursuing through them. They [BYU-Idaho] just don't quite have the same support structure as Pathway. At Pathway, you pretty much just need to show up and do the work, and if you get stuck, there is always someone there to help. Getting dumped at BYU-Idaho, you feel like you are alone. I won't give up because Pathway gave me a positive mindset and showed me if I keep working hard, that I am smart enough to continue. But, if the tuition cost goes up, I may not be able to continue. Another student in Interview 2 said:

It was affordable and easy. I did 1.5 years at ASU, and it was the most expensive, time-consuming, difficult thing of my life, and it didn't need to be that way. As a young single

[adult], then [as a] married adult, this was WAY too much and became more of a burden than a joy. BYU-PW offered me something that fit my needs in more ways than one.

These findings strongly suggest that students who earn a certificate experience increased confidence and motivation, which leads to an increase in persistence, which then increases matriculation rates. While earning a certificate and acquiring new skills seem to be the highest contributing factors, they are not the only factors. This study also revealed that strong support structures and reduced barriers also play an integral role in bolstering confidence and motivation.

### **Negative Case Analysis**

Included in these interviews were seven students who had completed all three BYU-PW semesters, earned a Pathway certificate, applied for the BYU-Idaho online degree program, and had been accepted into the program, but who had chosen to pause or drop out of the program. While seven participants are a low sample size, each of them shared why they had made the decision not to continue with the online degree program by identifying one of the following three reasons: (a) life situation, (b) finances, and (c) health. One participant in Interview 1 said:

Things were going really well until my wife was diagnosed with cancer. I'm a pretty strong person, but that just took too much energy out of me each day to continue. She's doing really well with treatments, and I will be returning this fall.

Other reasons that were given included three participants who had lost their job, two who did not have the money and were unwilling to borrow from family or take out a loan, and one who was dealing with anxiety and depression. Interestingly, all but one of the participants expressed a desire to return at a future time. That one individual was a church leader and current federal judge who was curious about how the BYU-PW process worked. He did all the work to complete the Pathway courses and apply for an online degree because he wanted to be able to

provide encouragement and motivation to his congregation but felt he couldn't give authentic counsel for something he hadn't experienced first-hand.

### **Discussion and Conclusions**

The purpose of this research was to better understand and explain changes in retention and persistence for individuals completing professional certificates through the -PW program. BYU-PW made a strategic policy shift in 2019 to focus primarily on offering students' certificate-first programs, rather than emphasizing preparation and enrollment in traditional degrees. In addition to the shift in strategy, the organization also released a new version of the online curriculum, PathwayConnect, to support the focus on earning a certificate.

While the new curriculum's learning outcomes and content did not fundamentally change from one version to another, the emphasis was on assignments and learning activities that encouraged students to identify certificates that they would like to earn. The support structure at BYU-PW also changed to provide more mentoring and advising that focused on students achieving short-term success by earning a certificate. This emphasis proved to be a significant contributing factor to increased student motivation and confidence for the participants of this study. This is especially true for nontraditional students who feel like education has left them behind. This study has highlighted implications for education and the value of earning certificates and nontraditional credentials.

The aim of this study was (a) to better understand the effect that earning a certificate has on student confidence and persistence and (b) to determine if that effect motivates a student to continue their education and earn a college degree. To this end, this study sought to answer the following research questions:

1. How has shifting the curriculum emphasis from earning degrees to earning professional certificates changed student confidence, persistence, and retention between two separate student cohorts?
2. To what can we attribute any change in student confidence, persistence, and retention?

The purpose of this study was to understand the why behind this increased confidence and identify specific reasons or evidence for the perceived increase in persistence. Once analyzed, the collected data suggested five common themes (in highest priority order): (a) student persisted because they had gained confidence in their ability by overcoming familiar challenges, completing the program, and earning several professional certificates, (b) their persistence was bolstered when they found they could use the certificate they earned to seek and obtain better employment, (c) they were encouraged as they developed new skills and abilities that helped them in various aspects of life, (d) they were invigorated by a strong support network, including instructors, mentors, advisors, classmates, and family, and finally, and (e) they were encouraged by how the program reduced traditional barriers in applying for and being accepted in a degree program.

### **Implications for Education**

This certificate-first emphasis in the new curriculum allowed students to identify and earn credentials that count toward future online degrees. If the student pauses their studies rather than matriculating to an online program, then at least the student still has the benefit of earning an interim credential that they can use to seek new or better employment. This claim was supported in this study, as numerous students highlighted the utility of their certificates on resumes and in job interviews.

Kirp (2019) suggested that one of the most powerful predictors of increased academic confidence and success was the students' perception of their school's support for their academic, personal, and social needs. This study confirms Kirp's assertion and provides additional evidence to its efficacy, but it also sheds light on the importance of nontraditional students obtaining short-term academic success.

### **Implications for Nontraditional Credentials**

The results of this BYU-PW study provide a model for how to help nontraditional students. It is evident that institutions cannot rely exclusively on existing high school, community, and familial support systems to help nontraditional students complete their degrees. Higher education must consider additional programs to assist these students with the complex and challenging process of transitioning into degree initiatives by providing them with more opportunities to earn nontraditional credentials like certificates and digital badges (Jirgensons & Kapenieks, 2018).

This research also confirms that educational institutions could provide better opportunities to help students transition into college by utilizing certificate programs as the bridge to degree programs (Cabrera et al., 2005). This approach may help prepare each student for a successful life after completing their schooling and may greatly benefit our society by giving students a credential certifying that they have a specific competency or skill (Bailey & Belfield, 2017). Future research should examine credentialing programs' potential to help high school students transition into and complete traditional university programs.

The traditional approach of graduating from high school and continuing to college is being replaced by an online curriculum that inspires lifelong learning, credentials, and certificates (Devedžić & Jovanović, 2015). This approach provides students with flexible

learning modules that fit in an increasingly nonlinear education and training system. The lifelong value of certificates is evident in the age distribution of certificate earners. While 66% of certificate holders earn their certificates before age 30, 18% are in their thirties, and 16% are 40 or older (Carnevale et al., 2013).

### **Suggestions for Future Research**

This study only focused on domestic students (those living in the United States), and it only used information from two cohorts. Future studies could include international students where alternative credentials or certificates may have greater significance or value with employers. Additional studies may also focus on international certificates or areas that have greater relevance in different countries. Lastly, future research may focus on students who transition from high school directly to trade schools or community colleges, as this study's scope focused primarily on students seeking bachelor's degrees.

Since this study took place, students worldwide have faced a global pandemic. This factor and subsequent economic impacts may introduce additional factors that affect student motivation and confidence. While this study focused on students who had access to in-person learning, future research may focus on the impact of virtual learning environments that lack in-person interactions between students and other support sources.

BYU-PW and BYU-Idaho provide significant support systems for their online students. These include highly trained instructors, mentors, advisors, support missionaries, and a myriad of communication tools, knowledge base articles, and counseling services. As one participant stated, "...there is no way they (BYU-PW) would let you quit". What happens in other programs where this level of dedication and support is not available? Future research into this question



would be valuable, as would research into the value of having in-person support vs. virtual support (as is the case with BYU-PW and their support missionaries and mentors).

Finally, what implications does this research have for practitioners? How does this research impact different aspects of curriculum design, instruction, and support? Can a traditional institution make meaningful changes to accommodate a certificate-first approach as BYU-PW did in 2019? To accommodate the 2020 pandemic, almost all institutions have had to change aspects of how education is provided in terms of online instruction, mentoring, and advising services, and counseling. Do institutions have the appetite to make additional changes to emphasize certificates and require faculty to update learning outcomes? In some respect, making necessary changes to implement certificate-first sooner rather than later might be an important modification to consider.

## References

- Adams, J., & Corbett, A. (2010). Experiences of traditional and non-traditional college students. *Perspectives*, 2(1), Article 2. Retrieved from <https://scholars.unh.edu/perspectives/vol2/iss1/2/>
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. U.S. Department of Education.
- Astin, A. W. (1998). The changing American college student: Thirty-year trends, 1966-1996. *The Review of Higher Education*, 21(2), 115-135.
- Bailey, T. R., & Belfield, C. (2017). *Stackable credentials: Do they have labor market value?* (CCRC Working Paper No. 97). Community College Research Center, Teachers College, Columbia University.
- Bank, B. J. (1995). Gendered accounts: Undergraduates explain why they seek their bachelor's degree. *Sex Roles*, 32(7-8), 527-544.
- Baum, S., Kurose, C., & McPherson, M. (2013). An Overview of American Higher Education. *Future of Children*, 23(1), 17-39.
- Becker, W. E. (1992). Why go to college? The value of an investment in higher education. In W. E. Becker & D. R. Lewis (Eds.), *The economics of American higher education* (pp. 91-120). Springer, Dordrecht. [https://doi.org/10.1007/978-94-011-2950-3\\_4](https://doi.org/10.1007/978-94-011-2950-3_4)
- Bowl, M. (2001). Experiencing the barriers: Non-traditional students entering higher education. *Research Papers in Education*, 16(2), 141-160.
- Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic analysis. In C. Willig & W. S. Rogers (Eds.), *The SAGE handbook of qualitative research in psychology* (pp. 843-860). Sage Publications.

- Cabrera, A. F., Burkum, K. R., La Nasa, S. M., & Bibo, E. W. (2005). Pathways to a four-year degree. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 155-209). ACE/Praeger series on Higher Education.
- Cantwell, R., Archer, J., & Bourke, S. (2001). A comparison of the academic experiences and achievements of university students entering by traditional and non-traditional means. *Assessment & Evaluation in Higher Education*, 26(3), 221-234.
- Carnevale, A. P., Rose, S. J., & Hanson, A. R. (2013). *Certificates: Gateway to gainful employment and college degrees*. Georgetown University Digital Repository. Retrieved from <https://repository.library.georgetown.edu/handle/10822/559297>.
- Chester, T. D. (2018). *Factors affecting employee persistence in an online management development certificate program* [Doctoral dissertation, Walden University]. Walden University ScholarWorks. Retrieved from <https://scholarworks.waldenu.edu/dissertations/5063/>
- Clery, S., & Achieving the Dream, Inc. (2010). Attendance and completion patterns. Data notes (ED521315). *Achieving the Dream*, 5(2), March/April 2010. ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearchive.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED521315&site=ehost-live&scope=site>
- Deming, D., Goldin, C., & Katz, L. (2013). For-profit colleges. *The Future of Children*, 23(1), 137-163. Retrieved from [http://scholar.harvard.edu/files/ddeming/files/deming\\_foc\\_final.pdf](http://scholar.harvard.edu/files/ddeming/files/deming_foc_final.pdf)
- Devedžić, V., & Jovanović, J. (2015). Developing open badges: A comprehensive approach. *Educational Technology Research and Development*, 63(4), 603-620.

- Engle, J. (2007). Postsecondary access and success for first-generation college students. *American Academic*, 3(1), 25-48.
- Engle, J., & Tinto, V. (2008). *Moving beyond access: College success for low-income, first-generation students* (ED504448). The Pell Institute. ERIC. <https://files.eric.ed.gov/fulltext/ED504448.pdf>
- Evans, K., & Heinz, W. R. (1994). *Becoming adults in England and Germany*. Bournemouth English Book Centre, 15 Albion Close, Parkstone, Poole, Dorset BH12 3LL, England, United Kingdom (18 British pounds).
- Gibson, D., Ostashewski, N., Flintoff, K., Grant, S., & Knight, E. (2015). Digital badges in education. *Education and Information Technologies*, 20(2), 403-410.
- Girves, J. E., & Wemmerus, V. (1988). Developing models of graduate student degree progress. *The Journal of Higher Education*, 59(2), 163-189.
- Grodsky, E., & Riegle-Crumb, C. (2010). Those who choose and those who don't: Social background and college orientation. *The ANNALS of the American Academy of Political and Social Science*, 627(1), 14-35.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Sage Publications.
- Hilliard, T., Bushway, D., Krauss, S., Anderson, N., & Jobs for the Future. (2018). *Solving the four big problems facing CBE for underprepared college learners. Next-generation CBE. Jobs for the future* (ED588451). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remoteauth.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED588451&site=ehost-live&scope=site>

- Jirgensons, M., & Kapenieks, J. (2018). Blockchain and the future of digital learning credential assessment and management. *Journal of Teacher Education for Sustainability*, 20(1), 145-156.
- King, J. E. (1996). *The decision to go to college: Attitudes and experiences associated with college attendance among low-income students* (ED398775). ERIC.  
<https://eric.ed.gov/?id=ED398775>
- Kirp, D. (2019). *The college dropout scandal*. Oxford University Press.
- Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis*, 31(1), 30-53.
- Mah, D. K. (2016). Learning analytics and digital badges: Potential impact on student retention in higher education. *Technology, Knowledge and Learning*, 21(3), 285-305.
- Mattern, K., & Wyatt, J. N. (2009). Student choice of college: How far do students go for an education? *Journal of College Admission*, 203, 18-29.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (3rd ed.). Jossey-Bass.
- Perlmann, J., & Waldinger, R. (1997). Second-generation decline? Children of immigrants, past and present—a reconsideration. *International Migration Review*, 31(4), 893-922.
- Raish, V., & Rimland, E. (2016). Employer perceptions of critical information literacy skills and digital badges. *College & Research Libraries*, 77(1), 87-113.
- Sander, P., & Sanders, L. (2006). Understanding academic confidence. *Psychology Teaching Review*, 12(1), 29-42.
- Spradley, J. P. (1979). *The ethnographic interview*. Holt, Reinhardt, & Winston.
- Stake, R. E. (2010). *Qualitative research: Studying how things work*. Guilford Press.

- Tomlinson, M. (2008). 'The degree is not enough': Students' perceptions of the role of higher education credentials for graduate work and employability. *British Journal of Sociology of Education*, 29(1), 49-61.
- Vila, L. E. (2000). The non-monetary benefits of education. *European Journal of Education*, 35(1), 21-32.
- Walch, T. (2019, August 20). *A private college degree for less than \$9,000: How a 10-year-old school is disrupting higher education*. Deseret News. Retrieved June 18, 2020, from <https://www.deseret.com/indepth/2019/8/19/20812530/byu-pathway-worldwide-disrupt-higher-education>
- Yin, R. K. (2017). *Case study research and applications: Design and methods*. Sage Publications.

## DISSERTATION CONCLUSION

The purpose of this dissertation was to investigate changes in retention and persistence rates for individuals completing professional certificates through the BYU-Pathway Worldwide (BYU-PW) program. In 2018, BYU-PW modified its curriculum to focus on offering students' certificate-first programs, rather than solely emphasizing preparation and enrollment in traditional degrees. This "certificate-first" emphasis in the new curriculum requires students to identify and earn credentials that count toward future online degrees if they choose to continue their academic pursuits. The aim of our research was to use matriculation data from two separate BYU-PW cohorts and (a) understand the effect that earning a certificate has on student confidence and persistence and (b) determine if that effect motivates a student to continue their education and earn a college degree.

In a similar study (Patterson et al., 2010), credentialing programs were studied to explore if providing alternatives to degree-only programs may be an effective way for universities to not only recruit more students but to also support them until graduation. This study suggests that there may be a positive relationship between students earning alternative credentials and observed increases in matriculation rates. Kirp (2019) suggests that increased academic confidence and success are predicted when a student perceives that their school supports their academic, personal, and social needs. In an additional study where an emphasis was placed on encouraging first year students to earn a professional certificate, there appeared to be an increase not only in student confidence, but also persistence rates in matriculation compared to more traditional online degree programs (Walch, 2019).

This dissertation is structured as a series of related journal articles using a mixed-method research approach. The first research article is an extended literature review that explores the

relationship between student persistence and motivation and how they may affect matriculation rates. The latest research around alternative credentials, including certificates, are examined, as well as how they might motivate nontraditional students to pursue a bachelor's degree.

The second research article, *Impact of Certificate-First Programs on Matriculation Rates*, is a quantitative analysis of data gathered from and about online students. This quantitative study and analysis suggest a strong relationship between BYU-PW's certificate-first curriculum change and an increase in matriculation rates between the 2018 and 2019 cohorts. These findings are important as they may support prior studies' assertions (Kirp, 2019; Walch, 2019) that earning a certificate increases student confidence and persistence, respectively. To date, no prior analysis has been conducted on matriculation rates between cohorts where curriculum serves as an independent variable. Additional analysis was conducted on matriculation rates in terms of demographic information.

The third research article, *Understanding Improved Matriculation Rates Found in a Certificate-First Program*, was designed as an explanatory qualitative study. By conducting interviews with students from both cohorts, this study offers potential contributing factors that lead to the increase in matriculation rates. The study and analysis revealed key contributing factors that increase student motivation and confidence. Using an interview protocol involving 40 (n=40) students (twenty from each cohort), we attempted to understand how and why nontraditional students' motivation increases when they earn a certificate before pursuing a bachelor's degree.

Based on the research gathered, the data suggests that earning credentials in the short term provides students a more immediate benefit and build hope and confidence that they can achieve a more long-term goal of a bachelor's degree. It was found that this new approach



offered the immediate benefit of having a professional certificate in hand --something most nontraditional students valued. Additional analysis suggests that students may develop more confidence and motivation to persist in school because of five key factors: (a) earning a certificate was a significant achievement and encouraged them to earn more, (b) the certificate allowed participants to obtain better employment, (c) satisfaction in acquiring new skills that benefited other aspects of their life, (d) the positive impact of a strong support network, and (e) elimination of traditional barriers to matriculation.

In summary, this research strongly suggests that a degree preparation program for nontraditional students that emphasizes and rewards students for earning a professional certificate increases student confidence and motivation, thus increasing persistence and matriculation rates. While our research provides some additional insight into this topic, more research is needed to fully appreciate the impact of certificate-first programs' ability to motivate students as they work to achieve their academic goals.

## DISSERTATION REFERENCES

- Kirp, D. (2019). *The college dropout scandal*. Oxford University Press.
- Patterson, M. B., Zhang, J., Song, W., Guison-Dowdy, A., & American Council on Education, GED Testing Service. (2010). *Crossing the bridge: GED credentials and postsecondary educational outcomes. Year One Report* (ED509888). ERIC. Retrieved from <https://www.lib.byu.edu/cgi-bin/remotearch.pl?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED509888&site=ehost-live&scope=site>
- Walch, T. (2019, August 20). *A private college degree for less than \$9,000: How a 10-year-old school is disrupting higher education*. Deseret News. Retrieved June 18, 2020, from <https://www.deseret.com/indepth/2019/8/19/20812530/byu-pathway-worldwide-disrupt-higher-education>

## APPENDIX

**Institutional Review Board Approval Letter**

Memorandum

To: Randy Davies  
Department: BYU - EDUC - Instructional Psychology & Technology  
From: Sandee Aina, MPA, HRPP Associate Director  
Wayne Larsen, MAcc, IRB Administrator

Date: October 06, 2020

IRB#: IRB2020-405

Title: Understanding the Impact of 'Certificate First' Programs on the Matriculation Rates of Online Degree-Seeking Students

Brigham Young University's IRB has approved the research study referenced in the subject heading as exempt level, Category 2.

This study does not require an annual continuing review. Each year near the anniversary of the approval date, you will receive an email reminding you of your obligations as a researcher and to check on the status of the study. You will receive this email each year until you close the study. The study is approved as of 10/06/2020. Please reference your assigned IRB identification number in any correspondence with the IRB. Continued approval is conditional upon your compliance with the following requirements:

1. A copy of the approved informed consent statement can be found in iris. No other consent statements should be used. Each research subject must be provided with a copy or a way to access the consent statement.
2. Any modifications to the approved protocol must be submitted, reviewed, and approved by the IRB before modifications are incorporated in the study.
3. All recruiting tools must be submitted and approved by the IRB prior to use.
4. Instructions to access approved documents, submit modifications, report adverse events, can be found on the IRB website, IRIS guide: <https://irb.byu.edu/iris-training-resources>
5. All non-serious unanticipated problems should be reported to the IRB within 2 weeks of the first awareness of the problem by the PI. Prompt reporting is important, as unanticipated problems often require some modification of study procedures, protocols, and/or informed consent processes. Such modifications require the review and approval of the IRB. Please refer to the IRB website for more information.