2021

Community College Student Success: The Effect Of Faculty Type On Course Completion

Lea Anne Crooks
Indiana State University

COMMUNITY COLLEGE STUDENT SUCCESS:

THE EFFECT OF FACULTY TYPE ON COURSE COMPLETION

A Dissertation

Presented to

The College of Graduate and Professional Studies

Department of Educational Leadership

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

---

by

Lea Anne Crooks

May 2021

Keywords: Adjunct faculty, full-time faculty, student success, community college

COMMITTEE MEMBERS

Committee Chair: C. Jack Maynard, Ph.D.

Professor, Director and Provost Emeritus

Department of Educational Leadership

Indiana State University

Committee Member: Brad Balch, Ph.D.

Professor of Educational Leadership and Dean Emeritus

Indiana State University

Committee Member: Christy Coleman Brown, Ph.D.

Instructor of Educational Psychology

Indiana State University

Committee Member: Kara Monroe, Ph.D.

Provost

Ivy Tech Community College

ACKNOWLEDGEMENTS

There are many people who traveled this journey with me, all of which played a critical role in getting me to the finish line. I knew selecting a strong committee would be important but did not realize how true that was until I was deep in the process. Dr. Christy Coleman Brown, your guidance, detailed edits, and conversation throughout the statistical portion of my research helped me glean all the information the data provided, and you always brought me back to the center when I veered left or right. Thank you, Dr. Kara Monroe, for providing the internal college support I needed and for continuing to remind me that finishing was the only option! Thank you, Dr. Balch, for your advice, edits, and support. And finally, Dr. Maynard for agreeing to chair my committee and advising me on the committee member selection. I could not have accomplished this without you. Thank you for challenging me to think bigger professionally and encouraging me to push through the dissertation process! I have truly enjoyed our many conversations during this journey.

Ivy Tech Community College, my work family, and my accountability partner provided great support. The college both allowed me to do the study and provided the required data without any delay. I am fortunate to work alongside a team that is the absolute best! Your support and encouragement always came at the time when I needed it most. During the first semester of the coursework, Trudy Weddle became my accountability partner. Your accountability emails, Sunday sessions, and many conversations always provided the push and motivation I needed. I am thankful for the friendship that was formed through this.

And finally, I am most thankful for my family. Adara and Brennan, you are the best gifts I ever received. Adara, your strength and big heart challenge me to be a better person. Brennan, your lightheartedness and humor remind me you can accomplish much and still be lighthearted and fun. Paige, you joined our family during this process, and I am thankful to have the best daughter-in-law. Most importantly, John, you have been my rock for the last 30 years, and you didn't waiver through this challenge. You gave me the space to focus and encouraged me when I would become frustrated. You have always been my biggest cheerleader, and I am forever grateful to have you in my life and excited for all of our days ahead.

ABSTRACT

Community colleges continually strive to improve the course completion rates for students. The quality of the instruction students receive is a primary area of focus for community college administrators. Many assumptions are often made in regard to the type of faculty (i.e., full-time faculty and adjunct faculty) who teach community college courses. Often colleges seek to reduce the number of adjunct faculty members assuming students are better served by full-time faculty. Using Ivy Tech Community College faculty and courses, this quantitative research focused on courses in both general education and technical education. The courses were used to examine the factors related to the faculty and the impact on the successful course completion rate of students. The results of the study found a significant difference between general education and technical education course completion rates. However, when the research focused on faculty type and other variables related to the faculty, including degree type and semesters of service, there was no support for the common assumption that students are more successful when taught by a full-time faculty member. While the results did not provide significant outcomes in many elements of the study, the knowledge gained from this study has implications for community college administrators, faculty, and students of community colleges. The results provide the need for additional study, including qualitative studies, to determine the underlying factors leading to successful course completion.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Community colleges are relatively young in higher education, with the first campus originating in Joliet, Illinois, in 1901 (Dougherty, 1994). Community colleges are flexible and change regularly, striving to meet the ever-changing demands of communities (Cohen et al., 2013). Because of this continual transition and need for flexibility, community college leaders must approach expenditure decisions with the same flexible mentality. Historically, the use of part-time faculty, often referred to as adjunct faculty members or more negatively contingent faculty, provided the needed fiscal flexibility (Caruth & Caruth, 2013).

Adjunct faculty individually provide a non-recurring expense as they are generally contracted by semester with no guarantee of employment beyond the semester of an assigned course (Bakley & Brodersen, 2018). Although collectively, adjunct faculty provide a recurring expense, it is an expense that can be much more controlled since there are no continuing contracts involved. The flexibility makes the use of adjunct faculty prevalent in community colleges, as cited by JBL Associates (2008). At the time of JBL Associates' article, nationally, adjunct faculty taught 58% of community college classes. The number of adjunct faculty continues to increase in community colleges nationally, with adjunct faculty representing 65% of all faculty in 2016 (American Association of University Professors [AAUP], 2018).

At the same time the use of adjunct faculty is increasing, a national focus on student retention and completion in community colleges is growing in intensity (Lloyd & Eckhardt, 2010). According to the National Student Clearinghouse (2018), students who started college in Fall 2016 at two-year public institutions persisted at a rate of 62.2%. That rate represents a decrease of 0.5% when compared to Fall 2015. The report shows potential long-term progress in the Fall 2016 data when compared to Fall 2009 with an increase in student retention of 1.2%. However, completions are still not timely. In fact, only 5% of students complete their associate degree within two years according to Complete College America (Complete College America [CCA], 2012).

The data show differentiations based on student type: full-time versus part-time. The persistence rate for students who entered the community college on a full-time basis was 70.6% compared to 55.6% for those who entered on a part-time basis (National Student Clearinghouse, 2018). The meager retention rates of students require analysis of the factors influencing their poor performance. One potential factor affecting student course completion, and thus retention, is the type of faculty member providing the instruction. The research highlights considerable differences between full-time faculty and adjunct faculty, which leads to the need for research and analysis of successful student course completions when taught by the different instructor types.

This study explores the effect adjunct faculty have on student course completion and attempts to fill the knowledge gap related to the topic. This chapter provides the background and significance of the problem, the purpose of the study, and the research questions. An overview of the theoretical framework is presented in the chapter, followed by the assumptions and limitations of the study. Subsequently, definitions of terms are provided.

Background of the Problem

From their inception, community colleges evolved in their focus, target audience, and sources of funding. Different than the university, which developed from the colonial college, community colleges are open access and designed to serve both the traditional aged and non-traditional aged students (Cohen et al., 2013). Comprehensive community colleges serve dual missions in higher education, with one focus on transfer to the four-year university and a second focus on career and technical education.

Within both focal areas of transfer and career education in the community college mission, the diverse student body ranges from students requiring developmental education to those entering with high aptitude. This dichotomy stretches the focus and the resources of community colleges (Eagan & Jaeger, 2008). The multiple student types also require the faculty teaching in the diverse classroom to be attentive to the students' varying needs and to be skilled at adapting instruction to the various student types. The faculty's ability to be adaptable and support the students varies for many reasons. One potential difference between faculty being successful or not could be the type of faculty status; full-time faculty or adjunct faculty (Mueller et al., 2013).

According to Thirolf and Wood (2018), community colleges rely heavily on adjunct faculty. This reliance has continued to grow during both economic downturns and enrollment growth explosions. While this dependence on adjunct faculty creates significant financial benefits for colleges, the research indicates adjunct faculty do not have the same significant financial or other benefits. The lack of significant benefits for adjunct faculty does not negate the appeal for the many who seek to teach the part-time role (Umbach, 2007).

Adjunct faculty members have been a part of higher education from its inception with heavy use in the community college sector with a trend toward increased usage. Although always present, the number of part-time faculty has grown substantially in the last 40 years, mainly in the community college system. A struggle for financial resources in the 1970s and 1980s led to an increase in the use of adjunct faculty (Beach, 2010). According to Schuster and Finkelstein (2010), the part-time faculty population increased by 422.1% between 1970 and 2003, while at the same time, full-time faculty only saw an increase of 70.7%. During the period from 1992 to 2003, there was a 29.2% increase in full-time faculty for all higher education, while at the same time, there was a 40.6% increase in part-time faculty (Landrum, 2009).

The increase in adjunct faculty is a real concern for leaders of community colleges who typically report the lowest completion rates within the higher education environment (Integrated Postsecondary Education Data System, n.d.). According to a report by Radford et al. (2010) filed through the National Center for Educational Statistics, the community college completion rates in 2010 were 46%. For their report, completion included students who obtained a certificate or degree, as well as students who transferred to a baccalaureate institution, which is a standard measurement for higher education completion.

Although research exists regarding the impact adjunct faculty, have on academic quality and student outcomes, each of the reported studies has limited emphasis (Dolinsky, 2013; Johnson, 2011; Mueller et al., 2013; Travers, 2016). In most instances, the studies are limited to one institution or one program of study. Even with these limitations, the results of the analysis provide valuable information when considering the impacts adjunct faculty have in the academic environment. Research with a more holistic approach found some instances where adjunct faculty had significant impact on undergraduate student outcomes particularly in relation to

student interaction. With much less student interaction than their full-time counterparts, adjunct faculty usage correlated to a less positive student outcome. (Umbach, 2007; Umbach & Wawrzynski, 2005).

Although numerous studies reveal the reasons colleges hire adjunct faculty and adjunct faculty's satisfaction with their role, the research is both limited and provides conflicting results regarding the impact faculty type has on student success (Bakley & Brodersen, 2018). This research study examined student course completion rates when taught by adjunct faculty versus full-time faculty. Because differences in achievement may vary between course types, introductory-level courses in general education and technical courses were included in the study.

The two different types of adjunct faculty populations, general education and technical education, and the reasons faculty have for teaching at the institution make it challenging to group adjunct faculty into one category when analyzing student success in the adjunct faculty members' classrooms. Administrators may fault adjunct faculty for the poor student outcomes in community colleges based on anecdotal information. Administrators must be educating themselves on the statistical data and analyze the outcome results within their institution. Only after the analysis, should they address any negative results revealed and at that point confront any adverse impact the increased use of adjunct faculty members has on student success.

Beyond any differences that might be identified by faculty type, additional criteria of degree level and semesters of service will also be included in the analysis. The intent of the study is to reveal the best use of adjunct faculty in specific classes where the data reflects the most successful course completions. Additionally, the results will aid in identifying the need to create programmatic and institutional support for adjunct faculty in specific areas.

Statement of Problem

The use of adjunct faculty members in community colleges is prevalent and continues to increase across the nation (Center for Community College Student Engagement, 2014). With this increase, it is essential to know if successful course completion is impacted when taught by an adjunct faculty member compared to full-time faculty. Many attributes affecting the success of students may distinguish adjunct faculty from full-time faculty. The problem for this study was to determine the influence the type of faculty has on students completing courses in different subject areas. Additional analyses were conducted to examine faculty characteristics and their impact on students completing courses.

As community colleges balance the dual mission of transfer and career and technical education, student retention is critical. With an expected large gap in a skilled workforce, community colleges have external factions demanding improvements in completions (Lumina Foundation, 2018). Hence, community colleges must analyze all factors leading to low retention rates. One such factor, the use of adjunct faculty and the critical role they play in student retention, has not been a large area of focus. Therefore, this study attempted to provide data around the usage of different faculty types within community college classrooms. The research is intended to provide knowledge leading to improvement in retention for community colleges.

Purpose of the Study

The purpose of this study was to fill a gap in knowledge regarding the impact full-time faculty and adjunct faculty have on successful course completion in community colleges. The eventual goal was to equip leaders within community colleges nationally with knowledge to make the best faculty hiring decisions for student success. The research provided a detailed analysis of student course completion in both general education and technical education taught

by full-time and adjunct faculty in a community college setting. The research further analyzed contributing factors, including teaching experience and faculty level of education within each course type, general education, or technical education.

Significance of the Study

Although several studies have focused on adjunct faculty, previous research primarily focused on the perceptions adjunct faculty have of their employment situation (Bakley & Brodersen, 2018; Dolan, 2011; Maynard & Joseph, 2008). Accordingly, there was a need to focus research on the differing impacts adjunct faculty have on student success compared to full-time faculty. The results of this study provide an information base for community college leaders to make informed faculty hiring decisions. By gaining an understanding if faculty type, educational background, or experience impact course completion rates in technical education or general education, administrators are equipped to make an appropriate decision. Having knowledge based on statistical analysis versus anecdotal information or past experiences is critical for student success.

Research Questions

The following research questions guided this study:

1. Is there a difference in the successful course completion between general and technical courses taught by full-time faculty versus adjunct faculty?
2. Does faculty type, degree type, or number of semesters of service for faculty predict successful course completion in general education courses?
3. Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in technical education courses?

Theoretical Framework

Two theoretical models are provided as foundational knowledge for this study regarding student success. The primary theoretical model used was Tinto's (1987) model of institutional departure, which is highly regarded in higher education as the premier resource for student retention theories and solutions (Tinto, 2012b). With the focus primarily on the first year of college, Tinto's (2012a) model focused on involvement and connection to the institution as key to student success. For community college students, the engagement and connection outside the classroom with adjunct faculty is less likely to occur, making the activity and connection inside the classroom even more critical (Donaldson et al., 2000; Tinto, 2012a). Tinto's theory used Spady's (1970) undergraduate dropout model as a foundation; therefore, elements of Spady's model are used as a framework as well.

Whereas theories on student development are extensive, faculty development theories are less documented. While student success is important in the research, the type of faculty is the primary component of this study, which made providing theoretical framework for faculty critical. According to McKeachie (1991), the movement for faculty development theories arose in the 1960s around the emergence of centers for faculty and instructional development. Within these centers, three faculty developmental theories emerged: behaviorism, sensitivity training movement, and principles of learning and individual differences. The literature review documents these important theories and the role they played in the transitional development of faculty, which translates to the classroom for students.

Assumptions and Limitations of the Study

The main assumption for the study is that full-time faculty are more connected to community college students due to required office hours and time on campus. That connection

creates the opportunity for stronger academic success for students. Faculty assignments are ultimately determined by the academic leaders at the college campuses. Therefore, a limitation for the study is connected to those assignments. Those decisions may place particular faculty in courses where success is likely, thus skewing the results. Additionally, limitations in the college data system prevented analyses of certain traits, including professional development completed by adjunct faculty.

Additional limitations are related to the student data. The college has open admission with no standardized admission requirement, such as SAT or ACT, thereby providing limited data on student education level before beginning coursework. Also, students were not differentiated by age, race, or other demographics for this study. The final limitation is the scope of the study being focused on the community college system in one state.

Definition of Terms

Completion: For this study, completion was defined as passing a course with a D or better. Students who received a W, F, or FW were considered to be unsuccessful and did not complete. A W is given to a student who withdraws during the allowable withdrawal period. An F is a failure, and an FW is given to a student who did not complete all the academic requirements of the course, typically the final assignments or exam, and did not officially withdraw.

Adjunct faculty: The term used for part-time faculty who do not have full-time contracts or benefits with an institution. Adjunct faculty members are also called contingent faculty, as their employment is contingent upon available courses needing to be taught.

Retention: The literature review contains material that uses different definitions for retention. For this research, retention refers to the successful completion of the course analyzed. Withdrawals

anytime during the course will be considered unsuccessful completion regardless of the grade achieved.

Full-time faculty: The term used for faculty who are benefits-eligible employees for the college. Full-time faculty are under contract for an academic year and follow the college's academic support and operations manual for course loading and student support hours.

Summary

Student retention and success are critical foci for community colleges. Many aspects of a student's time in college have been analyzed. One area with little analysis is the impact the type of faculty, full-time or adjunct, has on a student's persistence in specific courses. An understanding of community colleges and their role in higher education is critical to an understanding of the community college student. Also, of vital importance is an understanding of the community college's full-time and adjunct faculty members and the attributes that define them.

While the research is significant on both full-time faculty and adjunct faculty job satisfaction, there is less research on the role faculty member type has in the retention of a student. With a stronger focus on student retention by community colleges and external stakeholders, understanding the significance of the effects and contributing factors of faculty type is essential for community colleges. The next chapter further advances the importance of the study by providing a review of the literature relative to the topic and related research questions.

CHAPTER 2

LITERATURE REVIEW

The purpose of this study was to fill a gap in knowledge of how successful course completions are affected by adjunct faculty. Adjunct faculty members are prevalent in the community college setting in a range of subjects, which presents a need for context on the success of students in both general education and technical course topics. This chapter provides a review of relevant literature to validate the need for this study. This chapter provides a review of the literature connected to community colleges, full-time faculty, adjunct faculty, community college students, and student retention. The literature reviewed is a compilation of books, peer-reviewed journal articles, and online data resources related to community colleges, faculty, and student success.

The literature review begins with a historical perspective of the community college through the present day, including the mission and evolving funding structures. A review of literature related to both full-time faculty and adjunct faculty, particularly in the community college setting, follows. Subsequently, a narrative on student success and retention research, including Spady's undergraduate dropout process model and Tinto's model on institutional departure, is provided. The narrative concludes with an analysis of research on the effects adjunct faculty have on student success and initiatives for developing adjunct faculty with a focus on improvements in student retention.

The History of the Community College

Community colleges are the youngest institutions within the higher education structure. "The first community college appeared in Joliet, Illinois in 1901, and the second in Fresno, California in 1910. From that point on, community colleges multiplied rapidly but unevenly" (Dougherty, 1994, p. 115). There was rapid growth in the 1960s; the pace slowed in the 1970s and growth halted in the 1980s.. Since 2007, the number of two-year public institutions eligible to award federal student aid, which is how the government categorizes community colleges in statistical reports, has declined by 265 to a total of 1,905 (Integrated Postsecondary Education Data System, n.d.).

Created initially as junior colleges with a transfer focus, a transformation to comprehensive community colleges occurred by the late 1970s (Beach, 2010). Vocational and technical colleges transitioned to comprehensive community colleges during the same time. During this period, a struggle for financial resources within higher education developed, which significantly impacted community colleges as the community college mission continued to evolve.

Community colleges offer certificates and degrees based on the number of credits completed. Technical certificates and Associate of Applied Science degrees are typically awarded in technical programs. Associate of Applied Science degrees are typically not transferable to universities (Cohen et al., 2013). Technical certificates usually are less than 30 credit hours, while the Associate of Applied Science degree generally is 60 credits. The Associate of Science degrees are also generally 60-credit two-year degrees, which often transfer as the first two years of a four-year degree to universities (Jepsen et al., 2014). The flexibility

and the multiple types of degrees provided have allowed community colleges to fulfill the demands placed on them at different times in history.

Community colleges gained national recognition at various times in the past, including in July 2009 when President Obama spoke at Macomb Community College in Michigan to announce a 12 billion dollar initiative for community colleges (Obama, 2013). At a critical time during the recession, this announcement was a statement for the essential role community colleges play in the economy (Jepsen et al., 2014). During the recession, between the years of 2009 and 2011, community colleges served the largest numbers of students (Integrated Postsecondary Education Data System, n.d.). According to the National Center for Education Statistics ([NCES] (2017), at the peak, community colleges' unduplicated headcount for the academic year ending in 2011 was 11,864,996. Reported enrollment has declined each year, with the last headcount census for the 2016 academic year at a low of 9,524,560.

With a 20% decline in enrollment over six years, community colleges have encountered budget shortfalls requiring substantial streamlining and reduction in faculty and staff (American Association of Community Colleges [AACC], 2014). Although the decrease in enrollment has encompassed all higher education, community colleges experienced a greater decline in their share of students in higher education. Community colleges educated 41% of those in higher education in 2011, with that number declining to 36% in 2016 (NCES, 2017).

While universities have a long historical lineage, which is heavily documented, community colleges are not steeped in rich history due to their short existence (Thelin, 2011). Because of the need to be nimble, they change frequently and continually develop new programs and delivery methods to meet the workforce demands of the communities they serve (Cohen et al., 2013). While this flexibility may appeal to the community, businesses, and economic leaders,

the continual demand for change brings challenges for community college leaders. These challenges include budget allocations, ensuring the appropriate balance of full-time faculty versus adjunct faculty, and maintaining accreditation during change (Charlier & Williams, 2011; Eagan & Jaeger, 2011; Shelton, 2010).

Like universities, community colleges are accredited by external, private non-profit organizations whose members develop academic standards for which institutions are evaluated (Kezar & Maxey, 2013). Accreditation visits by peers from member institutions are conducted to assess and measure the institution against the organization's set standards. Community college leaders must be diligent in their practices and policies, adhering to strict standards even while quickly beginning new programs or instituting massive changes required to address community needs (Shelton, 2010).

While external organizations often accredit individual programs, the overall institutional accreditation is the critical element to the college's existence (Shelton, 2010). The accrediting organizations are focused on ensuring academic requirements and other criteria are met. However, institutions have flexibility in the way they meet the standards set forth by the accrediting bodies. This flexibility is critical for community colleges which must frequently adjust and adapt to meet the needs of the students and community they serve (Caruth & Caruth, 2013). In the community college, just like the university, this accreditation is essential to the institution's existence due to the connection to federal financial aid funding (Kezar & Maxey, 2013). The institutional accreditation verifies the community college mission is being accomplished while meeting high standards. The comprehensive community college mission is described in the next section.

Community College Mission

From their inception, community colleges evolved in their focus, target audience, and sources of funding (Dougherty, 1994). Different than the university, which developed from the colonial college, community colleges are open access, designed to serve both the traditional aged and non-traditional aged students (Cohen et al., 2013). Community colleges serve a comprehensive mission in higher education with a dual focus on transfer to the university and career technical education (Dougherty, 1994). Within these two focal areas, the diverse student body ranges from those needing developmental education to those with high academic potential, creating a dichotomy that stretches the focus and the resources for community colleges (Eagan & Jaeger, 2008).

The community college was initially created for the sole purpose of preparing high school students for the university. From its inception, the community college mission evolved to respond to businesses, communities, and secondary education (Dougherty, 1994). By the 1980s, the mission of the community college had altered from entirely transfer-focused to primarily a vocational mission (Cohen et al., 2013). Toward the end of the 1980s, the mission was evolving again, creating a different and ambiguous environment for the community college (Beach, 2010).

By the 1990s, the mission shifted again with a focus on access to higher education for underrepresented populations, with the community college as an entry point to further education (Cohen et al., 2013). The community college became more of a hybrid with both a transfer mission and vocational education (Beach, 2010). The transfer mission created many critics for community colleges, who cited the poor transfer outcomes for students. In the 2000s the diverse mission continued, but critics of the transfer mission forced attention on retention of both vocational and transfer students. This new attention on retention steered the development of

policies and funding, encouraging changes toward student success (Lloyd & Eckhardt, 2010). Many changes and challenges have also been driven and controlled by funding which is discussed in the next section.

Community College Funding

As the community college mission continued to shift, the student body continued to change as well. The Great Recession, beginning in December 2007 and ending in June 2009, had a significant effect on the college student population. During that time, it was particularly prevalent for students to return to college after being in the labor market or otherwise out of school. The number of college students in this category grew by 30% from 2006 to 2010, but by 2015 the number of students had returned to a level that was not significantly different from the level of 2006 (United States Census Bureau, 2018).

With the large fluctuations in the student population, funding concerns and challenges followed the enrollment trend. The cost of higher education garnered national attention with tuition and fee increases surpassing healthcare, inflation, and personal income (The College Board, 2010). Many students enrolled during the recession but returned to the workforce without completing their degrees. The lack of student retention created significant attention and focused on the financial resources spent for students who did not complete a degree (Hillman et al., 2014). This trend caused a renewed focus on completions and performance funding for institutional accountability.

Coming out of the recession, enrollments were high, and budgets were robust. The shift to steep enrollment declines severely impacted community college budgets, requiring immediate adjustments (Rutherford & Rabovsky, 2014). Beyond enrollment declines and other external factors, further budget reductions for community colleges can be attributed to the change in state

funding allocations, which are now tied to performance funding (Ewell & Jenkins, 2008; Lillibridge, 2008; Radford et al., 2010). With a focus on reducing the cost of higher education, states began shifting to performance-based funding, forcing higher education institutions to focus on completions versus enrollment (Rutherford & Rabovsky, 2014). The goal of performance funding is to ensure student success with formulas tied to completions. Although there are variations in performance funding from one state to another, ultimately "performance funding connects state appropriations directly to a college's performance on outcomes such as student retention, graduation, transfer, and job placement" (Dougherty et al., 2014, p. 164).

As open-access institutions, community colleges have historically focused on enrollment, serving all those who entered their doors. However, with performance funding, the same institutions must remain open access while at the same time ensuring the students also complete (Tandberg & Hillman, 2014). The focus on helping a student complete is designed to create a positive focus within institutions, but often the benefits to the student get lost in the financial discussion around performance metrics when the budget shortfalls are captured in the media headlines. Because college graduation rates are astonishingly low and can be difficult for institutions to defend, colleges must change their focus and, in doing so, must evaluate all quality issues that might prevent students from completing (Rutherford & Rabovsky, 2014).

The balance between full-time faculty and adjunct faculty is a consideration for administrators in community colleges who are challenged with budget decisions (Bettinger & Long, 2010). With budgets tighter due to reductions from the implementation of performance funding, leaders are tempted to rely heavily on adjunct faculty, yet the quality concerns surrounding adjunct faculty create apprehension (Bettinger & Long, 2005). Adjunct faculty members both create a solution and present a quandary for administrators. Understanding how

student success is connected to adjunct faculty makes it possible to ensure students will perform adequately in order for institutions to meet funding measurements (Eagan et al., 2015). Faculty characteristics and the dynamics surrounding the different types of faculty are provided in the next section.

Community College Faculty

Faculty are critical to student success and play a part in the lives of students inside and outside the classroom. “The faculty members represent the authority figure, the mentor, and the role model that may not appear anywhere else in the student’s life” (McArthur, 2005, p. 2). While the crucial role of full-time faculty is recognized, the trend in higher education, and particularly in community colleges, is increased use of adjunct faculty (Townsend & Twombly, 2007). This group is known by many names, including adjunct faculty, part-time faculty, or contingent faculty. Although critical to the campus they serve, adjunct faculty have no guarantee of employment from the institution, and the institution has no obligation to them beyond the contracted course or courses for the specified term (Center for Community College Student Engagement, 2014). The various names attached to this group of faculty members are noteworthy with the academy unable to agree on appropriate titles, which is indicative of the lack of focus on a group that is so critical to student success (Bianco-Mathis & Chalofsky, 1996; Dolinsky, 2013).

The U.S. Bureau of Department Statistics (2017) defines contingent as “those who do not have an implicit or explicit contract for ongoing employment” (p. 1). According to the Center for Community College Student Engagement (2014), adjunct faculty comprise 77% of community college faculty and teach 58% of the classes on community college campuses. Although community colleges have full-time faculty who carry a significant portion of the critical

academic activities on the campuses, the adjunct faculty work alongside the full-time faculty without the benefits provided to full-time faculty.

College and university adjunct faculty are different than full-time faculty, and their responsibilities and recognition vary between institutions. The community college's adjunct faculty members are much different than their counterparts at universities. Regardless of the institution type, however, consistently, there is a considerable difference in pay, benefits, and other related recognition for the adjunct faculty (Bakley & Brodersen, 2018). Among the many benefits they do not receive, at most institutions, adjunct faculty generally do not have access to office space, computers, telephones, or clerical support (Toutkoushian & Bellas, 2003).

Adjunct faculty members have existed in higher education from its inception, with heavy use in the community college sector and a present-day trend toward increased usage (Caruth & Caruth, 2013). Although always present, numbers of part-time faculty have grown substantially in the last 40 years, mainly in the community college system. A struggle for financial resources in the 1970s and 1980s led to an increase in the use of adjunct faculty (Beach, 2010). According to Schuster and Finkelstein (2010), the population of community college students increased by 422.1% between 1970 and 2003, while at the same time, full-time faculty in the community college only saw an increase of 70.7%. Between 1992 and 2003, for all higher education, there was a 29.2% increase in full-time faculty, while at the same time, there was a 40.6% increase in part-time faculty (Landrum, 2009).

According to the NCES (2017), during the years between 1992 and 2003, two-year institutions increased full-time faculty by 15%, while part-time faculty increased by 47%. Between 2003 and 2017, the increases leveled with a 23% increase in full-time and a 25% increase in part-time. Even with the comparable rise in both categories, in 2017, full-time faculty

were 53%, while part-time faculty comprised the remaining 47% of faculty in the two-year institutions.

This growing disparity in the use of adjunct faculty members creates concern for the community college mission. The open-access mission attracts students to the community college who often need remedial education and more support to obtain their goals (Datray et al., 2014; Donaldson et al., 2000). Part-time students are particularly vulnerable, requiring external support beyond the instruction provided during class time (Thirolf & Wood, 2018). The community college full-time faculty typically offer more resources outside the classroom to these students than the adjunct faculty member can provide. The adjunct faculty, who often teach in the evenings when other campus support structures are not present, are regularly teaching the part-time student who is the most vulnerable. This further reduces opportunities for success (Cox et al., 2010; Thirolf & Wood, 2018).

Although budgetary reasons are often cited as the motive to use adjunct faculty, it is not the only rationale for the use of adjunct faculty. The financial goals can create a negative narrative around hiring adjunct faculty, but there are many positive aspects in the utilization of adjunct faculty beyond the budgets (Bettinger & Long, 2010). The usage of adjunct faculty in the community college setting is strategic in some instances, with a focus on providing students exposure to professional expertise. In other situations, although planned, it is required due to the need for efficiency, flexibility, and budgetary constraints (Bettinger & Long, 2010; Caruth & Caruth, 2013; Pons et al., 2017). The different mission of the community college often drives the need to hire adjunct faculty due to the creation of new programming areas or short-term training initiatives driven by workforce development demands. These initiatives create a critical

challenge for quickly finding faculty, forcing colleges to hire adjunct faculty to avoid the faculty search process, which can be lengthy (Charlier & Williams, 2011).

With adjunct faculty so prevalent in the community college, faculty quality and student retention are critical concerns. It would seem intensive emphasis would be focused on connecting the adjunct faculty to the campus they serve by equipping adjunct faculty with instructional techniques and integrating the adjunct faculty into the campus culture, but that is most often not the case (Eagan et al., 2015). Adjunct faculty members are often somewhat isolated from the campus community they serve, deficient in their knowledge of resources for students, and lack knowledge regarding the established goals and strategies of the institutions they serve (Eagan & Jaeger, 2008; Eney & Davidson, 2012). It is easily argued that to maintain institutional standards, administrators need an understanding of and a strategic focus on the adjunct population to ensure students are successful (Bakley & Brodersen, 2018; Bonet & Walters, 2016; Braxton & McClendon, 2001; Eagan & Jaeger, 2008; Green, 2007).

According to Bettinger and Long (2010), there are solid business reasons for the use of adjunct faculty, many of which are not isolated to higher education. Businesses and industries hire part-time workers during economic upturns, which provide them the flexibility to release the workers during a downturn. The practice helps companies to control costs and create critical flexibility. Much like their business and industry partners, the community college needs the same type of flexibility. The Center for Community College Student Engagement (2014) highlighted the necessity for hiring adjunct faculty as a flexible financial model to sustain community colleges. Adjunct faculty receive less pay, and most receive no other related economic benefits from the college. By the nature of their employment, they offer flexibility when enrollment increases or when additional course sections need to be added quickly. When enrollment

decreases, the college has no obligation to provide adjunct faculty with a contract, thus creating the ability to reduce the college budgetary expense immediately (Charlier & Williams, 2011).

While the flexibility of adjunct faculty members creates a funding model attractive to administrators, viewing the adjunct as a temporary solution creates a disconnection between adjunct faculty and the institution they serve (Bakley & Brodersen, 2018). There is no evidence administrators have embraced the need to involve adjunct faculty in conversations, strategic planning, or the needs surrounding student academic progress. Even if some institutions attempt to do so, the literature indicates this is a difficult task due to the nature of adjunct employment. The Center for Community College Student Engagement (2014) highlighted the paradox of this lack of inclusion: "Therefore, institutions' interactions with part-time faculty result in a profound incongruity: Colleges depend on part-time faculty to educate more than half of their students, yet they do not seem to fully embrace these faculty members" (p. 3). This lack of commitment the colleges have to the adjunct faculty and disconnect the adjunct faculty may have with the college impacts their satisfaction in the role. Their satisfaction and resulting motivations are shared in the next section.

Satisfaction and Motivation

Satisfaction and motivation for adjunct faculty often vary based on the type of course the adjunct is teaching (Bettinger & Long, 2005). Adjunct faculty typically fall into two different categories and the benefits of using adjunct faculty align with those two defined groups. The first type of adjunct faculty generally teachs liberal arts courses. They often desire to become full-time employees (Eagan, 2007). This type of adjunct is more likely to spend additional time on campus developing relationships both with students and faculty. The second type of adjunct faculty has rich technical expertise, which is a benefit to the institution and students in the

classroom. The technical adjunct faculty are often working in the field and brings real-world experiences into their instruction (Cohen et al., 2013; Eagan, 2007; Haeger, 1998).

The literature reveals the reasons both types of adjunct faculty members have for choosing to teach at the community college. While some adjunct faculty intend the role as an entrance into the institution to obtain future full-time positions, others are working professionals or career-enders who are using the opportunity to give back to the community (Gappa & Leslie, 1993). The adjunct faculty members who are aspiring to obtain a full-time faculty position may feel exploited with lower salaries, little support, and struggle with not being fully connected to the campus. Conversely, the adjunct faculty members who are focused on giving back enjoy the freedom of concentrating on class delivery, are not concerned about pay, and do not strive for office space, telephone access, or other connectivity related opportunities (Gappa & Leslie, 1993; Levin et al., 2006; Levin & Montero Hernandez, 2014).

Job satisfaction and motivation for adjunct faculty are components of multiple studies (Eagan et al., 2015; Pons et al., 2017). Eagan et al. (2015) identified significant differences in job satisfaction and motivation based on the department in which the adjunct faculty teach, indicating this difference should be considered when analyzing adjunct faculty's student success (Eagan & Jaeger, 2008). In a separate study designed to uncover the motivations for adjunct faculty at community colleges, Pons et al. (2017) found adjunct faculty members are motivated by "interest in working within a discipline, working with students, and achieving personal satisfaction" (p. 1).

Adjunct faculty job satisfaction varies significantly based on voluntary or involuntary employment in part-time status and based on the long-term employment goal of the adjunct faculty member (Maynard & Joseph, 2008). According to Eagan and Jaeger (2008), the number

of adjunct faculty who are part-time but desire to be full-time is significant, with 73% of respondents in the study indicating they were involuntarily part-time. Considering the adjunct faculty had spent, on average, 8.6 years at the institution in an involuntary state, this parameter significantly defines this group. The significant amount of time with the institution often defines the types of connection adjunct faculty members have with the institution. Some institutions provide office space and other non-financial benefits for long-term adjunct faculty and, in some cases, even list them in staff directories and on institution websites, assisting in creating a connection to the adjunct faculty (McLaughlin, 2005).

The community college adjunct faculty striving for full-time academic positions typically hold a traditional academic degree, generally in liberal arts education, and depend on the academy for employment with little opportunity outside academia (Gottschalk & McEachem, 2010). This population often works at multiple institutions, weaving together a schedule that provides minimal financial support and tends to be less respected among full-time colleagues (Mueller et al., 2013). The adjunct faculty in this category are typically less satisfied with their situation and cite a feeling they do not belong; they are unvalued and are taken for granted (Dolan, 2011). The lack of office space and resources is challenging, and compensation is a considerable concern. As they are seeking full-time employment, this group seeks collegiality and connection with those on campus. Often the need for collegiality is not reciprocated, leading to a feeling of marginalization (Levin et al., 2006).

According to Bakley and Brodersen (2018), the subgroup of adjunct faculty members striving for a full-time position tends to be frustrated that they are the end of the hierarchy in course assignments after full-time faculty loads have been fulfilled. The delay in course assignments can lead to adjunct faculty receiving their course load shortly before the semester

begins with no resources to assist them. While feeling devalued, they strive to show their commitment by seeking to exceed expectations to gain an advantage when a full-time position is available.

Mueller et al. (2013) found faculty members who do not desire to be full-time bring an entirely different focus to the position and are often a more sought-after group by community colleges. Typically coming from industry partners and possessing specialized technical expertise, the technical adjunct faculty members do not seek the affirmation of their knowledge from the college. Their self-worth is found through external full-time employment, where typically there is access to the resources needed to help in course preparation. Also included in this category are career-enders who view the adjunct faculty role solely as an opportunity to give back and tend to find fulfillment in the classroom.

Eagan and Jaeger (2008) provided additional differences in attitudes of university level adjunct faculty members based on demographics. Within both voluntary and involuntary adjunct faculty, there are significant differences in perceptions between those faculty identified as White and those classified as non-White, with non-White reporting significantly lower satisfaction than their White counterparts. The study also found adjunct faculty who taught students with few basic skills experienced lower satisfaction than those teaching academically prepared students. Although this research is focused on university faculty, the significant findings could be considered in the utilization of adjunct faculty within the community college system

According to McLaughlin's (2005) research, which also focused on university faculty, adjunct faculty who are involuntarily part-time have lower satisfaction than tenured faculty, while those who are voluntarily part-time have a job satisfaction rate equal to tenured faculty. The study also found differences when analyzing the part-time faculty's connection to

administration and perceived input they had at the institution. The involuntary adjunct faculty member felt less connected to administration than the adjunct faculty members who voluntarily held part-time status.

Levin and Montero Hernandez (2014) brought the community college and university adjunct faculty together in their study examining faculty identity and perceptions in their teaching environments. The researchers found significant differences in attitudes among all groups when they focused on faculty's satisfaction in the classroom and outside the classroom. In the classroom, the adjunct faculty found high satisfaction and self-worth and reported they provided significant value to their students. Conversely, outside the classroom, they reported feeling devalued due to the lack of institutional acknowledgment of their importance to the campus and student success. They reported knowing very little about the institutions they served and little connection to the full-time faculty. This lack of community connectedness was also found by Meixner et al. (2010). Simple items such as lack of office space, mailboxes, and adequate parking are factors beyond the classroom leading to significant differences in job satisfaction.

Toutkoushian and Bellas (2003) focused their study on the differences between male and female adjunct faculty. In their study, the researchers found adjunct faculty to be disproportionately female, which led to differences in the results. The research indicated women were 10% more likely than men to seek part-time employment, which could contribute to the high percentage of women adjunct faculty. Compensation and other financial benefits were significantly less than for full-time faculty, with the compensation differences even more substantial for women. The gender disparity expanded beyond adjunct faculty members, with the study finding full-time female faculty members received less compensation than their full-time

male counterparts. Even with this significant disparity in compensation, both female adjunct faculty and full-time female faculty were more likely than their male counterparts to be satisfied overall with their positions.

Geographic Variances

While all community colleges rely on adjunct faculty, the use is not consistent across all institutions, including geographic variances. Charlier and Williams (2011) found rural institutions to be the least likely to use adjunct faculty. Multiple reasons contribute to the lack of usage, including the lack of available qualified candidates across all disciplines in rural areas. Another cited reason is that full-time faculty on rural campuses tend to be more protective of their program and are more likely to assume a heavier load to avoid hiring adjunct faculty.

Charlier and Williams (2011) conversely found urban community colleges rely heavily on adjunct faculty and typically have a robust pool of candidates from which to hire the very best. Even with the large pool, the urban colleges reported an unmet need in high-demand career fields, including physical sciences, engineering, and health-related programs. In urban areas, there are many opportunities for these types of professionals to give back to their community or receive higher wages doing external work, making it necessary for the urban community college to target and recruit these specific individuals as adjunct faculty. No matter the type of community college, rural or urban, student retention is a primary concern. The issue of retention for students in community colleges is presented in the next section.

Community College Students and Retention

Lloyd and Eckhardt (2010) described the challenge community colleges face with recruitment and retention.Unlike universities with selective processes, community colleges are typically open-access institutions accepting almost every student who passes through the door.

Upon receiving them into the institution, faculty and staff are then held accountable for their success. The community college students often present with one or more barriers to successful completion (Goldrick-Rab, 2010). Because completion accountability is most generally connected to timelines, using an extended timeline for completions is viewed as a failure, creating a narrative of the community college's inability to be successful (Lloyd & Eckhardt, 2010).

The community college students are both traditional age and non-traditional age, which also contributes to different issues for completion (Lloyd & Eckhardt, 2010). Traditional age students entering community college are often first-generation and lower-income, while the non-traditional aged adults have even more obstacles. "Adults [non-traditional aged] interested in pursuing training, certificate, or degree programs often confront a variety of barriers such as lack of academic preparation, lack of finances, social issues, cultural issues, and overwhelming family responsibilities" (Spellman, 2007, p. 63). Working with these students is a challenge, and completions are often an impossible task for those who work with and teach the students.

Student Retention Challenge

"The U.S. economy has grown by more than 11.5 million jobs since 2011 for workers with education beyond high school. At the same time, only 80,000 jobs were created for people with a high school diploma or less" (Lumina Foundation, 2018, p. 1). Because of this expected gap in a skilled workforce, pressure is being placed on community colleges across the United States to increase the educational attainment of citizens to meet employment demands (AACC, 2014). While institutions increase recruiting efforts, administrators are turning attention to tactics focusing on retaining current students. The change in focus is a shift for institutions who

frequently focused many resources on student recruiters and other expenses related to recruiting, including events and travel budgets (Fike & Fike, 2008).

The student completion challenge is a concern for leaders of community colleges, who typically report the lowest completion rates within the higher education environment (Witherspoon, 2014). According to Radford et al. (2010), in their report filed through the NCES, the completion rates at that time were 46%. NCES defined completion as students who obtained a certificate or degree, as well as students who transferred to a baccalaureate institution. Equipped with this knowledge of poor performance for community colleges, the AACC established a new strategic plan to address the critical issue of completion. AACC is comprised of 1,100 community colleges across the United States. As the primary advocacy group for community colleges, it is the organization most equipped to develop and drive the strategies necessary for change with community colleges across the United States (AACC, 2014).

As AACC rolled out the new strategic plan documents, statements were included declaring community colleges are incorrectly focused, and the governing body acknowledged that drastic changes are needed. AACC called on community college leaders to rethink and reshape all facets of their institutions, stating the primary goal is no longer a focus on enrollment but instead to equip college students with the tools and resources to complete what they started (AACC, 2014). With this new focus, much study is being done on the challenges and barriers to student success.

One such study was done by Mertes and Jankoviak (2016), who conducted a study at a Midwestern community college to identify the reasons students leave before they complete. The issues surrounding the lack of student completion are complex. The challenge of determining the holistic problem for community colleges is somewhat unique in higher education. With a

relatively young history and a mission to serve communities, the community college continues to evolve. With the diverse population the colleges serve, the dynamic is fluid, but the study solidified that the community college student differs from a baccalaureate student. The cost of college, motivation, work schedules, family obligations, classes at the right time, expectations versus reality, procedures, and dependent care issues were all cited as factors impacting their attendance.

Life factors, along with the mindset of students, highlight the many issues the community college students experience. These studies indicate that many times, stopping out of school for community college students has nothing to do with academic ability or factors controllable by the college (Han et al., 2017; Mertes & Jankoviak, 2016).

To make the changes, AACC (2014) developed seven recommendations for community college improvement. Much of the focus is on completion, but it is important to note the importance of quality and alignment with industry is also included in the guidance. The recommendations are:

> (1) Increase completion rates by 50% by 2020, (2) dramatically improve college readiness, (3) close the American skills gap, (4) refocus the community college mission and redefine institutional roles, (5) invest in collaborative support structures, (6) target public and private investments strategically, and (7) implement policies and practices that promote rigor and accountability. (AACC, 2014, p. 6)

Although all the recommendations are essential, the first recommendation, to increase completion rates by 50% by the year 2020, has garnered substantial attention. In AACC's support for community colleges, a roadmap was provided for community colleges to accomplish each one of the outlined strategies. For the 50% completion strategy, AACC focused on ways in

which each institution should achieve its part of the goal and thus collectively meet the national metric. Guidance for increased completion rates includes the following six strategies:

> (1) Publicly commit to explicit goals for college completion, (2) create pathways, (3) expand prior-learning assessments, (4) devise completion strategies on both ends of the college experience, (5) establish guarantees for seamless transfer, and (6) implement automatic graduation and reverse transfer programs. (AACC, 2014, p. 8)

With AACC as the advocacy group driving the issue and creating a public focus, other entities, including philanthropic organizations, quickly became attentive to the change. With the data and need well defined, the natural next step was to connect charitable dollars to the metrics. "With an endowment of nearly $1.2 billion, Lumina is the largest philanthropy in the United States focused solely on increasing the proportion of Americans with learning beyond high school" (Lumina Foundation, 2018, p. 1). Using their financial strength, Lumina attached funding to initiatives focused on retention changes for community colleges. As Lumina took the lead, other granting agencies began to follow. This helped community colleges focus on the AACC recommendation by developing plans to target public and private investments strategically.

While AACC was rolling out the overall community college strategic plan, the Lumina Foundation (2018) was also implementing a strategic plan. The elements built into Lumina's strategic plan show the power outside groups play in driving the focus within higher education institutions. There are five priorities outlined in Lumina's plan, which fundamentally changed the direction of national dialogue about completions for colleges in the United States. The priorities are both expansive, with a national structured layout, but also focused on specific

institution implementations, including curriculum restructuring and targeted completions. Lumina's priorities are:

> (1) A system for learning beyond high school that assures equitable access to affordable pathways that lead to quality credentials, (2) a new, national system of transparent, quality credentials beyond high school, (3) a national expansion of competency-based learning, (4) pathways to workforce certificates, industry certifications and other initial credentials for adults, and an integrated quality assurance system for learning beyond high school. (Lumina Foundation, 2018, p. 1)

Advocacy groups and nonprofit groups are not the only drivers of the change. State legislatures have adjusted to the same focus. The emphasis in the legislative chambers is now on performance funding (Tandberg & Hillman, 2014). With the external dialogue in the media, the legislative bodies have the external support to limit educational funding, which in the past was more difficult. This shift has been represented in Indiana beginning in 2013, as presented in the Indiana Commission for Higher Education report on performance funding. Each year a portion of higher education funding is connected to performance metrics, which weight overall completions and specific degree completions high in the model (Indiana Commission for Higher Education, 2018).

Theories on Student Success and Faculty Development

While performance funding is increasing the focus and narrative on student retention and completion, it is not a new concept in higher education. According to Tinto (1987), even in the 1980s, his research showed only 50% of students in community colleges persisted through their entire first year. In addition to the alarming first-year statistics, he further determined only one-third of community college students ever obtained a certificate or degree. To further explore the

retention issues, both Tinto and Spady's theories related to retention are provided in the next section.

Spady's Undergraduate Dropout Process Model

William G. Spady's (1970) undergraduate dropout process model was the first on persistence in higher education. The model concluded institutions played a significant role in student persistence. According to Spady, social integration increased satisfaction and determined if students would be committed to the institution. The lack of integration into the higher education environment is what causes students to drop out. Although Spady acknowledged academic potential plays a role in persistence, he was the first to infer the members of the institution also have a role in student persistence. With the inference of institutional members influencing student success, this theory provides a strong foundation for the need to understand the role faculty type plays in student success.

Tinto's Model of Institutional Departure

Tinto used Spady's model as a foundation for his research. Tinto's research has spanned 20 years, and throughout that time, he increasingly developed his model on institutional departure (Tinto, 2012a). Tinto's model of institutional departure is highly regarded in higher education as the premier resource for student retention theories and solutions. Tinto's (2012b) first model was presented in 1975, with modifications and expansions occurring in subsequent publications. With the focus primarily on the first year of college, Tinto's (2012a) newest model places institutional experience at the center of student retention.

Tinto's theory cites involvement and connections as the pinnacle to student success. Tinto analyzed student interaction with peers and faculty and measured student success on those factors (Tinto, 2012b). Students who had strong relationships with peers and faculty were more

likely to persist (Tinto, 1987). For community college students, involvement and connection outside the classroom are less likely to occur, making the activity and connection inside the classroom even more critical (Donaldson et al., 2000; Tinto, 2012a).

Tinto's (2012b) statistics relate very closely to the statistics cited by the Lumina Foundation (2018) and AACC (2014), indicating little progress has been made in student retention in the past 20 years, even while extensive dialogue has occurred and improvements have been implemented. Acknowledging this lack of progress in student retention, the Lumina Foundation suggested the following implementation strategies to drive change: "Clear, coherent academic/career pathways, stackable credentials based on clearly defined competencies, alignment of learning across education sectors, within community colleges, and with labor-market demands, and transparency and accountability" (Lumina Foundation, 2018, p. 6). Because of Lumina's reputation and funding potential, they have the capacity and the ability to force the needed changes in student retention among all higher education.

Faculty Development Theories

Spady and Tinto's theories closely relate to the foundation of the research on student success. Their theories focus on the interactions and connections students have with faculty. Beyond those theories, additional theories on faculty development are critical to student success. Faculty development theories were not prevalent until the 1960s, when faculty and instructional development centers emerged at universities (McKeachie, 1991). Through those centers, three faculty developmental theories materialized.

The first theory is behaviorism, which is based on structured goals with small learning phases, and students are protected from making mistakes (McKeachie, 1991). Following closely behind the behaviorism was the sensitivity training movement focused on faculty developing a

better climate for student learning. Those two theories were at either end of the spectrum for students: controlled environment versus a free learning environment. The final faculty development theory is the application of principles of learning and individual differences. Through additional focus on the way students learn, faculty can design instruction to meet the students' needs.

Faculty Impact on Student Retention

Both Spady (1970) and Tinto (2012a) acknowledged that interaction between faculty and students plays a critical role in student success. More recent research builds on their models to identify specific areas of influence faculty, and more specifically, adjunct faculty, have on student retention. Umbach (2007) conducted a study to determine the effect adjunct faculty have on undergraduate student outcomes. While the researchers found that certain attributes lead to significant differences between adjunct faculty and full-time faculty, there were also areas with few differences.

Umbach (2007) argued that the differences are not related to skill and knowledge inside the classroom but instead attributed them to the connection when class is over. Adjunct faculty and full-time faculty both used collaborative teaching methods, provided the same level of academic challenge, and spent the same amount of time on course preparation. The most significant difference between the two types of faculty members was in the interaction between faculty and students. This absence of student interaction by adjunct faculty was apparent both in the classroom and outside the classroom.

A qualitative study conducted by Cotten and Wilson (2006) was designed to determine the importance of student interaction with faculty. The study focused only on full-time faculty but is still relevant in assessing the significance of the need for interaction. In the student

interviews conducted, students cited very little interaction with faculty but indicated that it was mostly by choice. The students showed an understanding of the importance communicating with faculty had on their potential success but cited many reasons they did not communicate more, including lack of time, the desire to blend in during class, and a desire not to appear to be a "suck-up." This study highlighted that faculty, and student interaction requires work on the part of both entities. A full-time faculty member who has time on campus with established office hours is more equipped to make this additional effort, while an adjunct faculty is not.

Although the negative impact of the lack of faculty interaction for students is consistent in research, there is limited research showing the positive impact faculty members have on student outcomes. In a study conducted by Bettinger and Long (2010) utilizing 43,000 students at a public, four-year college in Ohio, data were analyzed to determine the likelihood students would move to the next course in a program when taught by an adjunct faculty versus a full-time faculty member. Even though this study, too, cited the effect of the adjunct faculty member being less engaged, there were positive findings on student outcomes.

Although there re limitations to the study, including the students self-selecting the course based on the instructor, the study found that students who had adjunct faculty were more persistent and selected the course area as their academic major following the session (Bettinger & Long, 2010). One area of note in this study is the significant focus on programmatic, or non-general education, adjunct faculty. As presented earlier, the two types of faculty have different reasons for teaching, and their motivation impacts the students (Caruth & Caruth, 2013). This study did not control for the two types of adjunct faculty. Still, it did focus on technical coursework, leading the reader to assume the kind of adjunct faculty member referenced in the study is the type who is not seeking full-time employment. The research found that exposure to

adjunct faculty with expertise creates a productive learning environment and solidifies career decisions for students (Bettinger & Long, 2010).

Kirk and Spector's (2009) research focused specifically on students in the field of business accounting to determine student success rates. For the study, success was measured based on performance in the second business accounting course. The researchers then tied the progress in the second course back to the instructor type in the first course. The researchers found students taught by full-time faculty members in the first course performed significantly higher in their next accounting classes versus those who had an adjunct faculty. The researchers also found students who were taught by an adjunct faculty were less likely to choose accounting as their major after the first course. Kirk and Spector'sresearch differed from Bettinger and Long (2010), who found technical adjunct faculty had a positive impact on students.

When student grades are compared between classes, there is always the potential for the discussion around grade inflation to occur. While the Kirk and Spector (2009) study found evidence of grade inflation by adjunct faculty, other studies have shown this not to be the case. In a study conducted by Landrum (2009), adjunct faculty had similar results as full-time faculty in their grading allocations. The study evaluated 361 courses taught in eight different departments at one institution. These two studies with mixed results indicated the importance of assessing campus-level data for significance when determining the impact adjunct faculty have on students at an institution. Finally, Schutz et al. (2015) studied the perceptions surrounding grade inflation, highlighting that perceptions may drive action on college campuses even though realities proven by facts may be different.

Eagan and Jaeger (2008) furthered the research on student completion, focusing explicitly on the transfer mission of the community college. The researchers determined that with the

diverse mission of the community college, it was critical to analyze the transfer-focused student group's success. The student group who plan to transfer is typically enrolled in general education courses at the community college. The adjunct faculty teaching transfer courses are often a group striving for full-time employment (McLaughlin, 2005). The Bettinger and Long (2010) study found a significant inversed correlation between exposure to adjunct faculty and rate of student transfers. This finding is alarming, particularly when considering community college students are characteristically from a lower socioeconomic background, and exposure to adjunct faculty appears to hinder a further already disadvantaged population.

Jacoby (2006) completed a study of graduation rates of students taught by adjunct faculty. Using data from the Integrated Postsecondary Education Data System (IPEDS), the research was conducted on completion rates from all 1,209 public two-year colleges in all 50 states for 2001. The significant finding showed a decrease in graduation rates as the proportion of adjunct faculty increased. The study further analyzed the graduation rates of minoritized students when taught by an adjunct faculty. Their completion rates were significantly lower than others taught by adjunct faculty. Because there were significant differences between states which had large community college enrollment and those states that did not, there are limitations to the application and data comparisons for individual colleges.

Contradictory to much of the research indicating full-time faculty lead to stronger student success, The Community College of Vermont (CCV; 2019) is an anomaly in their approach. With 608 instructional staff who are considered adjunct faculty, the community college has taken a different path to instruction. The college's 159 full-time employees are primarily in management, the student services areas, and academic-administrative oversight. At CCV, the first to second-year retention rates for first-time degree-seeking undergraduates in Fall 2017 was

60% for full-time students and 51% for part-time students. The 2017 information is not yet available for all two-year institutions. Still, in comparison, the retention rate for this category in 2016 was 62.6% for full-time students and 44.7% for part-time students (Integrated Postsecondary Education Data System, n.d.).

In the study conducted by Jaeger and Eagan (2009), the role of adjunct faculty on associate degree completion in the California Community College system was analyzed. “The results suggest that an increase of 10% in the 1st-year proportion of credits earned in courses, taught by part-time faculty members, resulted in students becoming 1% less likely to earn an associate’s degree” (p. 175). With further analysis, the researchers determined students in the California Community College system were exposed to adjunct faculty for 50% of their coursework. Due to the excessive exposure to adjuncts, it was estimated over time, students were 5% less likely to achieve an associate’s degree than if full-time faculty had instructed all courses, assuming all other variables were held constant. The variables controlled in this study included demographic characteristics, financial need, part-time to full-time status, and declared majors. The study took a holistic degree completion approach and did not focus on an individual course completion analysis.

Jaeger and Eagan (2009) continued their research on retention-related exposure to part-time faculty with a focus on student transfer. Their work is vital for community colleges as previous research was primarily focused on 4-year institutions. The study was once again focused on the California Community College system and examined the outcome of transfer without course level consideration. The study found a 1% decrease in the probability of transfer when art, humanities, social sciences, computing and information technology, and undeclared

students were exposed to a 10% increase in adjunct faculty. Students in the trades experienced a 0.5% decrease in transfer when exposed to a 10% increase in adjunct faculty instruction.

Although the percentages seem small, the researchers discovered that 3.5% of the student sample spent 95% of their time with part-time faculty. The researchers suggested the higher exposure to adjunct faculty intensifies the impact (Jaeger & Eagan, 2011). “A student with at least 95% of credits with part-time faculty would be anywhere from 9.5 to 13.3 percentage points less likely to transfer compared to their peers without any exposure to part-time faculty” (Jaeger & Eagan, 2011, p. 1520). In this study, other variables, including academic achievement, enrollment status, and GPA, had a significant effect on the transfer outcome. The researchers found the likelihood of student transfer to a 4-year institution varied significantly across the colleges within the California system. Of significant note, the study found the effect of exposure to part-time faculty did not vary based on program, which contradicts prior research (Levin et al., 2006).

A study by Figlio et al. (2015) cited the differences found between faculty types in effect on student success. In the study, first-term students at Northwestern University performed better when taught by contingent faculty than when taught by tenure track or tenured faculty. This study points to the need for Jaeger and Eagan’s (2009) work and the need for research explicitly focused on community college students. Contingent faculty at Northwestern University often hold full-time, long-term contracts but are not on a tenure track, making them a much different type of faculty than community college adjunct faculty. The researchers also acknowledged students at Northwestern University typically enter the university with high academic achievement, which is very different than the typical community college student.

In Romsa et al.'s (2017) research on millennial college students pointed to the changing needs of students. Millennial students desire different types of interactions with faculty than previous generations. This change speaks to the need for controlling variables, such as age, in studies related to student success. The variable of age is just one of many that should be considered in research on retention. According to Reason (2009), high school grade point average, college entrance exam scores, socioeconomic status, race/ethnicity, and gender should all be considered and reveal the merit index score as a predictor in retention. This score quantifies the college entrance exam result in relation to all students taking the exam at the same high school. The new score creates a level environment for students from disadvantaged societies. With the focus on retention and the literature focusing on the need for faculty connection to students, strategies for successful interventions are created. Those strategies revealed in the literature are provided in the next section.

Strategies for Student Retention Related to Adjunct Faculty

Because of the responsibility of operating in the open-access environment, community colleges are faced daily with the challenge of developing strategies for on-time completion (Cohen et al., 2013). As stated previously, the performance funding metrics create urgency around on-time completion strategies (Dougherty et al., 2014). Knowing this is not an easy situation to overcome, community colleges are developing many different programs and initiatives to address the issue at multiple levels. These changes are not just driven by the administration but also by faculty and staff who know the importance and identify solutions they can impact (Lloyd & Eckhardt, 2010). Although the literature cites many colleges focused on improving retention, a critical group, adjunct faculty members, appear to be missing in the dialogue.

Lloyd and Eckhardt (2010) used their experience within the community college system in New York to identify tools to increase retention in their science programs. With a focus on improving instruction in the classroom, an immersion program was created that reduced the standard 16-week coursework to 6 weeks. By making courses shorter, students took fewer courses at a time, allowing students to focus more intently on the topic. The results were promising, showing students who regularly drop one or more of their classes a semester did not do so in the new format.

This condensed format is beginning to gain momentum within community colleges. Odessa Community College in Texas was recently recognized by the Aspen Institute with a rising star award for their work in this area. They converted over 80% of their 16-week courses to 8-week courses, thus substantially increasing student retention by 10% in one year. Odessa now conducts workshops for other community colleges that desire to move to this format. The research, however, does not indicate the magnitude of these types of changes have on adjunct faculty. The Texas Higher Education Coordinating Board also recognized Odessa's efforts as having an impact on Texas' economic development efforts as the increase in completions increased the number of skilled workers available in the state (*OC-Star Award Finalist*, 2017).

Professional Development and Support for Adjunct faculty

When a large portion of the faculty who interact with students regularly are not connected to the students beyond the course they are teaching, the retention of the students is even more at risk. Hope (2016) cited the importance of creating intentionality around integrating the adjunct faculty into the institution to boost student retention. Although they may not be there consistently beyond the course they are teaching, it is essential to build upon the benefits the adjunct faculty bring to the campus.

Hope (2016) explored Montgomery College's efforts to improve retention rates with students taught by adjunct faculty. Montgomery College, like most community colleges, created comprehensive programs to support adjunct faculty. Institutions must work to develop stronger connections between the institutions and the adjunct workforce. Onboarding and orientation of adjunct faculty members are essential pieces to integrating this group into the campus culture. Strong orientations go beyond the policies and processes they must follow and include tools for instruction. The focus on instructional techniques is critical because adjunct faculty tend to have expertise in their profession but little teaching technique experience (Biles & Tuckman, 1986).

As colleges realize the importance of adjunct connection to the campus and critical retention initiatives, colleges are creating strategic initiatives surrounding the development of adjunct faculty. In Ivy Tech Community College's (2018) strategic plan, "Our Communities, Your College," a specific strategy was identified to build a world-class adjunct faculty model. The college is creating an Adjunct Faculty Certification Institute with the intent to improve the effectiveness and retention of adjunct faculty and provide full-time faculty with opportunities to engage adjunct faculty and improve student retention and success.

Adjunct faculty can also provide pivotal connections to other adjunct faculty, and institutions are using them to provide peer support for those adjunct faculty who cannot spend the additional time on campus (Hope, 2016). According to Lyons (2007), it is important that adjunct faculty technical expertise also be leveraged. The adjunct who brings daily work experiences to the classroom can provide a real example of what successful completion will mean to a student. Instead of viewing an adjunct as not connected, many colleges have learned to embrace the adjunct's connections to businesses and industries, giving students exposure to career opportunities, which leads to stronger completion. "Adjunct faculty provide expertise in

critical courses that perhaps no full-time member on staff possesses" and "their passion for sharing their expertise enables our students to achieve real-world perspectives" (Lyons, 2007, p. 1).

Summary

In this chapter, literature was presented to provide a foundational framework for the research on the history and evolution of the community college related to student retention when taught by adjunct faculty or full-time faculty. The chapter began with a review of the topics surrounding the issues facing community colleges beginning with the community college mission and funding. Attributes of community college faculty, including adjunct faculty's satisfaction and motivation, were explored. Differences in the type of courses taught, geographic locations, and the amount of professional development provided to adjunct faculty were included in this portion of the literature review.

The review continued with an analysis of community college students and retention, including the theories of Spady (1970) and Tinto (1987), indicating the issues surrounding student retention are not a new phenomenon. The final section of the literature review combined the previous topics and explored literature regarding the impact adjunct faculty have on student retention. This review expands to include retention strategies and professional development programming community colleges are implementing to improve the impact of adjunct faculty. With a foundational understanding of the available literature, the study was created to analyze the research questions. The next chapter defines the study and methodology used for the analysis.

CHAPTER 3

METHODOLOGY

As presented in Chapter 1, the purpose of this study was to fill a gap in knowledge regarding the impact full-time faculty and adjunct faculty have on successful course completions in community colleges. This chapter provides the structure for the quantitative research conducted. The research method, design, and research questions are presented. The sample of community college faculty participants in the study is described, and the dependent and independent variables are further defined. This chapter concludes with the data collection procedures along with the bias and confounds for purpose of ensuring the potential to replicate the study.

Institution Studied

This quantitative study was conducted at Ivy Tech Community College, a comprehensive community college system in Indiana. Serving over 100,000 students at 19 campuses, over 50% of courses are taught by adjunct faculty (Ivy Tech Community College, 2018). The significant number of adjunct faculty members within Ivy Tech Community College makes the knowledge gained in the research critical to faculty assignments within the statewide system with the goal of improving student success and retention.

Originally founded as Indiana Vocational Technical College in 1963, the college has grown to be the largest singly accredited statewide community college in the United States and

the largest post-secondary institution in Indiana (Ivy Tech Community College, 2019). The college is a statewide system with 19 campuses of varying sizes and demographics. Ivy Tech Community College was first accredited by the Higher Learning Commission (HLC) as a single institution on February 24, 1995, and most recently received a ten-year re-accreditation.

Ivy Tech Community College enrolled 75,486 students in fall 2017, with 28% of the students recorded as attending full-time (Integrated Postsecondary Education Data System, n.d.). With graduates removed from the data, 50% of full-time and 41% of part-time students who began in Fall 2016 returned in the Fall 2017 (National Student Clearinghouse, 2018). For this study, student and faculty data from multiple campuses were used. The college provided permission for the use of data for the study (See Appendix A).

The College

The college is divided into 19 individual campuses that are categorized as a C1, C2, or C3. The designations for the campuses within Ivy Tech Community College are based on data points both external and internal to the college. The external measures for the classification include the number of 18- to 64-year-old citizens for the area served, the number of job openings requiring a bachelor's degree or less, and additional counties with more than 10% of commuters in the workforce based on United States census data. The primary internal measure for the classification is revenue-generating headcount. The three campus designations have varying levels of governance and services. Each of the campus designation categories is provided in Tables 1, 2, and 3.

Table 1

C1 Campus Designation

Criteria	Description
Classification	Flagship Campus with comprehensive offerings
Leadership	Chancellor & Cabinet
Required Cabinet (additional members at discretion of Chancellor)	Executive Director of Development, VCSS (Vice Chancellor of Student Success), VCES (Vice Chancellor of Enrollment Services), VCAA (Vice Chancellor of Academic Affairs), Workforce Development Consultant
Available Services	All student and employee comprehensive services are available at that location
Campus level advisory council	Campus Board of Trustees
Program Offerings	Comprehensive range of programs in workforce and transfer areas. Can support all needs of service area and develops programs for emerging needs. Has appropriate credentialed full-time faculty to support offered programs.
Program Labs	Appropriate labs on site or available through formal MOU to support all program areas
Centers of Excellence	Multiple
Academic Support Services	Appropriate to support all program offerings; most offered on site during normal operating hours at all locations; extended hours at primary campus.

Table 2

C2 Campus Designation

Criteria	Description
Classification	Campus with comprehensive offerings
Leadership	Chancellor & Cabinet
Required Cabinet (additional members at discretion of Chancellor)	ED Development, VCES, VCSS, VCAA, Workforce Development Consultant
Available Services	Student and employee services provided on campus
Campus level advisory council	Campus Board of Trustees
Program Offerings	Comprehensive range of programs in workforce and transfer areas. Can support majority of needs of service area. Has appropriate credentialed full-time faculty to support offered programs.
Program Labs	Appropriate labs on site or available through formal MOU to support all program areas
Centers of Excellence	At least one
Academic Support Services	Appropriate to support all program offerings; most offered on site during normal operating hours.

Table 3

C3 Campus Designation

Criteria	Description
Classification	Students complete between 50-100% of courses leading to a degree
Leadership	Chancellor & Cabinet
Required Cabinet (additional members at discretion of Chancellor)	Director of Development (FT, PT, or shared), VCESSS (Combined Vice Chancellor of Student Success and Vice Chancellor of Enrollment Services), VCAA, Workforce Development Consultant
Available Services	Typically, does not have a full range of services
Campus level advisory council	Campus Board of Trustees
Program Offerings	Offers appropriate range of programs in workforce and transfer areas to support majority service area needs. Has appropriate credentialed full-time faculty to support offered programs.
Program Labs	Appropriate labs on site or available through formal MOU to support all offered programs.
Centers of Excellence	N/A
Academic Support Services	Appropriate to support all program offerings; most offered on site during normal operating hours at primary campus with some support at any sites.

By nature of the data points, the C1 campuses are urban, the C2 campuses are smaller urban and rural, and the C3 are the smallest and are all rural campuses except for one.

Sample

Courses at Ivy Tech Community College, Indiana's community college, were utilized for the study. While not all courses for the college were included in the study, courses from each of the campus designations were included. Faculty from six of the 19 campuses were randomly

selected for the study. The following two types of courses were included in the study: general education, which included English 111, and technical courses, which included Welding 100 (Introduction to Welding) and INDT 113 (Basic Electricity). Course descriptions are shown in Appendix C. The general education course, English 111, was selected due to the large number of courses. It was necessary to utilize two technical courses, Welding 100 and Electrical 113, due to the small number of course offerings.

The welding and electrical courses are considered similar introductory courses, with both having components of hand-on instruction. However, it was necessary to confirm that those two courses were similar enough to be combined into one course for the study. To validate combining welding and electrical courses into a combined technical course category, a one-way ANOVA was conducted to ascertain the difference in successful course completion between welding and electrical courses. The results allowed for the combining of courses for the purposes of the study.

A random sample of 30 English 111 courses was selected. For the technical course, 19 Welding 100 courses and 11 Electrical 113 courses were randomly selected to total 30 in the technical combined category. In each category, general and combined technical, 15 courses were chosen taught by full-time faculty, and 15 courses were chosen taught by adjunct faculty. All courses used the same face-to-face instruction modality. The consistent modality was chosen to limit any variance that might be introduced through different learning formats. Each course was taught by a different faculty member. If a faculty member taught multiple sections of the same course, only one section taught by that faculty member was randomly included in the study. There were 660 students enrolled in the 60 courses in the study.

Data from the Fall 2018 semester were used in the analysis to provide a review from a

representative semester. The 2018 semester was not during a recession or directly following a recession when community colleges typically encounter large enrollment swings. The fall sessions offer the highest enrollment at the community college, leading to a larger sample for the study of at least 30 sections per course type. The semester was selected to provide a comprehensive and recent perspective on the data. The sample allocation for the research is presented in Table 4.

Table 4

Number of Sections per Course Type & Faculty Type

Course Type	Faculty Type	
	Full-Time	Part-Time (Adjunct)
English	30	30
Welding	10	9
Electrical	5	6

Degree type for each faculty was divided by Certificate or Certification (12%), Associate Degree (15%), Bachelor's Degree (18%), Master's Degree (47%), and Doctorate (8%). The data detail is provided in Table 5. Semesters of teaching experience ranged from 1 semester to 88 semesters (M = 11.60, SD = 15.04). The number of semesters taught was used for measuring teaching experience. Semesters were used versus years of service since adjunct faculty may teach one semester in a year and not return until the following year or later.

Table 5

Faculty Degree Type Detail

	Full Time		Part-Time (Adjunct)	
	General	Technical	General	Technical
Certification or Certificate		4		3
Associate Degree		4		5
Bachelor's Degree		3	3	5
Master's Degree	12	4	10	2
Doctorate	3		2	

Methods and Research Design

Ivy Tech Community College's internal student data warehouse, NewT, housed in the business intelligence division in the college's systems office, was used to collect comprehensive course-level data for the analysis. Retrieving data at the system level provided access to course data for multiple campuses.

The college's employee data system of record is Banner. The Banner system was utilized to collect degree level and semesters of service data for all faculty. Data from the Banner system for faculty were collected by the Human Resource department and cross-referenced to the course level data. The data were provided in an Excel document, which was imported into SPSS for analysis.

The use of data from the Ivy Tech Community College system was approved both by Indiana State University's IRB and the administration at Ivy Tech Community College. Ivy Tech Community College's approval is shown in Appendix A.

A quantitative method was chosen for the research with the intent of the study to determine differences and relationships among presented variables. The variables studied are provided in the data analysis.

Data Analysis

The following research questions guided this study:

1. Is there a difference in the successful course completion between general and technical courses taught by full-time faculty versus adjunct faculty?
2. Do faculty type, degree type, and number of semesters of service for faculty predict successful course completion in general education courses?
3. Do faculty type, degree type, and number of semesters of service for faculty predict successful course completion in technical education courses?

SPSS was used for the analysis of the research questions with alpha set at 0.05.

Research Question 1 was analyzed using a factorial ANOVA. This statistical procedure allowed comparison of the dependent variable of successful course completion based on the independent variables of faculty type (adjunct faculty or full-time faculty) and course type (general or technical) and their interaction. Research Question 2 used multiple regression analysis. For the multiple regression analysis, this research question focused only on a general education course (English 111). The predictor variables included faculty type, degree type, and number of semesters of service. The criterion variable was the percentage of successful completions for the specified general education course. Research Question 3 used multiple regression analysis in the same way as Research Question 2. Here the focus was on the combined technical courses (Welding 100 and INDT 113).

Variables

Successful course completion. In all statistical analyses in the study, the dependent variable was the percentage of successful course completion. Students who finished the course and received a D or better were regarded as completers for this study. The total number of

students completing a D or better was divided by the total number of students initially enrolled in the course. Students who withdrew before the allowed withdrawing period (W) or withdrew after the drop period (FW) and who received an F were considered as unsuccessful course completions. A student receiving an FW completed the course but did not fulfill all academic requirements for the course, such as the final exam. That number of unsuccessful students was then divided by the total number of students enrolled in the course to get the unsuccessful percentage. Although the debate on faculty expectations and grading differences must be acknowledged, the study's retention focus made this an appropriate measure for study. To analyze the impact faculty type had on a student, the research was focused on course level data.

Instructor type. Instructor type had two levels: full-time faculty member and adjunct faculty member.

Instructor Degree type. Degree type had five levels: Certification, Associate, Bachelor's, Master's, and Doctorate.

Number of prior semesters taught. The actual number of prior semesters taught was a continuous variable with the range beginning at 0.

Controls for Bias, Confounds, and Other Potential Errors

Potential confounds exist in the data that will be unknown to the researcher. The data will be limited to the parameters in the institution's data system. Factors including student life issues outside the classroom may affect student behavior and were not analyzed in the study. The analysis was limited to completion of the course and did not consider a learner's preferred learning style. The analysis also did not include the instructor teaching style or other individual differences not defined in the research parameters.

The researcher is a member of the institution studied. To limit bias in the research, the

data were provided by the business intelligence and human resources department at the system's office. In addition, the institution is part of a statewide structure with 19 campuses. The researcher's campus was not used in the data analysis to control for any bias. In addition, students and faculty for varying campus sizes and geographic areas were used. These variables increase generalizations, which can be inferred for other campuses in the system.

Summary

This chapter presented the research methods and design used in the study. The research questions were provided, followed by the data collection process and analysis procedures conducted. Potential bias and confounds by the researcher were declared. The next chapter will present the findings and analysis of the study.

CHAPTER 4

ANALYSIS OF THE DATA

This study was a quantitative analysis in a community college setting to determine if a relationship exists between faculty type and successful course completion. Data for this study came from Ivy Tech Community College, Indiana's community college system. A cross-section of six diverse campuses within the Ivy Tech Community College system was chosen for the study. To provide a diverse population, the six campuses represented various sizes and geographic areas with both urban and rural campuses included. The College uses three different categories to identify the campus sizes; C1, C2, C3. Two from each campus category were chosen. The sample used in the data set consisted of a subset of faculty teaching specific general education and technical courses in Fall 2018. This chapter presents the research questions studied and the findings related to each of the questions.

The research questions were as follows:

1. Is there a difference in the successful course completion between general and technical courses taught by full-time faculty versus adjunct faculty?
2. Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in general education courses?
3. Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in technical education courses?

Variable Specifications

Dependent Variable

The percentage of successful course completion was the dependent variable for all research questions in the study. Students who finished a course and received a D or better were regarded as successful completers for this study. The total number of students completing with a D or better was divided by the total number of students enrolled in the course on the first day of the semester. While a range of success is included between an A letter grade and a D letter grade, it does mark a difference with those who are not successful, as described below.

Conversely, students not included in the successful completion number were those who withdrew during the approved withdrawal period. Per the College policy, the approved withdrawal period is from the end of the second week to the end of the week marking the completion of 75% of the course. Students receive a grade of W if they withdraw during that period. Also, students were not included in the successful completion number if they received an F or FW for the course. An FW is given to students who do not complete the withdraw during the allowed period but do not complete all academic components for the course, such as the final exam.

Course Type Variable

The course type variable required additional study. A large number of the English general education courses used in the study was available to provide a representative sample. The number of general education courses was reduced to a sample of 30, 15 taught by full-time faculty and 15 taught by adjunct faculty. However, the number of technical courses offered at the

six campuses was significantly smaller. This small sample created a need to combine two different technical courses, one in welding and one in electrical, into one combined technical course for the study. The two courses were selected based on the similarity of the introductory level work and hands-on activities included in the curriculum for both courses. Once combined, there was a total of 30 courses included, with 15 being taught by full-time faculty and 15 taught by adjunct faculty.

To validate combining the entry-level welding and entry-level electrical courses into a combined technical course category, a one-way ANOVA was conducted to ascertain the difference in successful course completion between the welding and electrical courses. No statistically significant difference in successful course completion was found between the identified welding and electrical courses, $F(1, 28) = 1.68$, $p = .206$. With this confirmation, the welding and electrical courses were combined into one group titled "combined technical course" for the remainder of the study. With this validation in place, the analysis began with research question 1.

Research Questions and Results

Research Question 1

RQ# 1: Is there a difference in successful course completion between general and technical courses taught by full-time faculty versus adjunct faculty?

The first research question analyzed the difference in successful course completion for general and technical courses taught by full-time faculty versus adjunct faculty. A broad look to determine differences between the faculty type on the course successful completion in either of the course types was conducted. It was important to understand the impact at this level prior to

adding the additional variables, which might further contribute to differences in course completion success if a significant difference was found between faculty types within either type.

A factorial ANOVA was conducted with faculty type and course type as the independent variables and successful course completion as the dependent variable. Faculty type had two levels of full-time faculty or adjunct faculty. The second independent variable of course type also had two levels of general education or technical education. The descriptive statistics are shown in Table 6.

Table 6

Descriptive Statistics (N = 60)

	Full-Time			Part-Time		
	M	*SD*	*n*	*M*	*SD*	*n*
General Education	62.31	12.91	15	64.26	22.11	15
Technical	83.32	14.34	15	87.70	10.14	15

The assumptions underlying factorial ANOVA were examined. The assumption of normality was conducted to ensure the sample means were normally distributed with few outliers. Skewness and Kurtosis were studied to determine the even distribution of data. The assumption of normality was met within an acceptable range for all groups, as shown in Table 7.

Table 7

Assumption of Normality

	General Education		Technical Education	
	Full-Time	Adjunct	Full-Time	Adjunct
Skewness	-0.31	0.01	-0.36	-0.47
Kurtosis	-1.41	-0.17	-1.03	-0.22

The assumption of homogeneity of variance was assessed through Levene's test, and the assumption was met, indicating the variances within the cells were equal $F(3,56)=2.64$, $p=.058$.

Although the sample sizes were equal which negated the concern of the data not meeting the normality assumption, the test was still conducted for confirmation and normality was met. The sample consisted of 15 courses for each category, including full-time faculty teaching the general education course, full-time faculty teaching the combined technical course, adjunct faculty teaching the general education course, and adjunct faculty teaching the combined technical course.

The final assumption is the assumption of independence. To ensure the assumption of independence, the sample only included one course per faculty member. If a faculty member instructed more than one section of the same course, only one course for that faculty member was randomly included in the study.

The main effect of course type was statistically significant, such that there was a statistically significant difference between class types on successful course completion, $F(1, 56) = 30.73$, $p < .001$, $\eta^2 = 0.35$, (Table 8). Technical education courses ($M = 85.51$, $SD = 12.40$) had significantly higher successful course completion than general education courses ($M = 63.29$, $SD = 17.82$). Within factorial ANOVA, examining the main effect of course type allows for only the course type to be examined without consideration given to the type of faculty teaching the course. Additional study through the remaining research questions will assist in determining if the variables related to faculty led to this significant difference.

The main effect of faculty type was not statistically significant, $F(1, 56) = 0.62$, $p = .433$. Hence, successful course completion was not significantly different between full-time faculty ($M = 72.81$, $SD = 17.14$) and adjunct faculty ($M = 75.98$, $SD = 20.68$). Also, the interaction between class type and faculty type was not statistically significant, $F(1, 56) = 0.09$, $p = .763$. The

ANOVA allowed for the interaction of the two variables to be examined, and the finding showed no significant interaction found.

In conclusion, research question 1 found when the independent variables were examined separately as the main effects in the analysis; only the course type showed a significant difference with technical courses having a higher course completion rate. When the independent variable of faculty type was examined, there was no significant difference. The two independent variables were analyzed together to determine if the interaction was significant. There was no significant interaction indicating the faculty type of full-time and adjunct faculty was not significantly dependent upon general education or technical education courses to impact successful course completion. The remaining research questions included additional variables for further analysis.

Table 8

ANOVA Summary Table

Source	*SS*	*df*	*MS*	*F*	η^2
Class Type	7406.37	1	7406.37	30.73*	0.35
Faculty Type	150.23	1	150.23	0.62	
Class Type x Faculty Type	22.18	1	22.18	0.09	
Error	13497.52	56	241.03		
Total	21076.30	59			

*$p < .05$

Research Question 2

RQ #2: Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in general education courses?

While research question 1 found no significant differences in successful course completion based on faculty type, the second research question delved deeper into variables

related only to the identified introductory English general education course. The second research question examined successful course completion in the English course based on three potential predictors.

A multiple regression analysis was conducted to ascertain if the three predictor variables of faculty type, degree type, and number of faculty semesters of service predicted successful course completion in the specified general education course. As previously stated, degree type had six options: Certification, Technical Certificate, Associate Degree, Bachelor Degree, Master Degree or Doctorate. Semesters of service ranged from 1 semester to 88 semesters of service. Therefore, the sample had a wide range of experience both in academic preparation and the amount of teaching experience within Ivy Tech Community College. Previous teaching experience prior to employment with Ivy Tech Community College was not included. Table 9 shows descriptive statistics and correlations among the research variables.

The correlation between faculty type and number of semesters of service was statistically significant, $r = .50$, $p = .006$, being the only correlation in the data indicating that as the faculty type increased from 0 to 1, so did the semesters of service increase and vice versa. The assumptions of normality, linearity, no auto-correlations, no multicollinearity, and homoscedasticity were examined and met. With these assumptions met, the sample's data were normally distributed with few outliers. The few outliers that did exist were in semesters of service with a small number of very long-term faculty at 88 semesters.

The predictive model was not statistically significant, $R^2 = .07$, $F(3, 26) = .69$, $p = .565$. Hence, the linear combination of faculty type, degree type, and number of faculty semesters of service did not predict successful course completion. Therefore, the three variables would not be

valuable attributes to use when determining faculty course assignments if the focus is on placements that would impact successful course completion.

Partial correlation and semi-partial correlation were examined to determine if any predictor variables were correlated with successful course completion when the other predictor variables were factored out. Table 10 shows low partial and semi-partial correlations between each predictor variable and successful course completion. These results for three correlations showed: (1) faculty type was not correlated with successful course completion while controlling for degree type and semesters of service, (2) degree type was not correlated with successful course completion while controlling for faculty type and semesters of service, and (3) semesters of service was not significantly correlated with successful course completion while controlling for faculty type and degree type. Even when the other predictor variables were controlled to examine the correlation between the predictor and criterion variables, the correlations were still low, indicating no significant relationships were being hidden in the overall correlation analysis.

The partial correlation between faculty type and successful course completion is .21, which is the correlation between faculty type and course completion after partialing out degree type and semesters of service from both faculty type and course completion. The semi-partial correlation between faculty type and successful course completion was .21, which showed the relationship between faculty type and course completion after partialing out degree type and semesters of service from faculty type.

Table 9

Descriptive Statistics and Correlations (N=60)

	Completion	Faculty Type	Degree Type	Semesters of Service
Faculty Type	.06			
Degree Type	.05	-.26		
Semester of Service	.15	-.50*	-.23	
M	63.29	1.50	4.07	14.77
SD	17.82	0.51	0.52	13.06

*$p < .05$

Table 10

Regression Coefficients

Variable	*b*	S_b	*Beta*	*t*	*sig*	Partial Correlation	Semi-Partial Correlation
Faculty Type	9.41	8.48	.27	1.11	.278	.21	.21
Degree Type	6.59	7.38	.19	0.89	.380	.17	.17
Semesters of Service	0.45	0.33	.33	1.37	.183	.26	.26
Constant	15.78	40.36		0.39	.699		

Note: $R^2 = .07$, $F = (3, 26) = .69$, $p = .565$

Research Question 3

RQ #3: Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in technical education courses?

The third research question was similar to research question two, with course type being the one exception. The question examined successful course completion in the combined technical education courses based on the same three predictors used in research question 2: faculty type, degree type, and semesters of service.

A multiple regression analysis was conducted for this question as well to ascertain if faculty type, degree type, and faculty semesters of service predicted successful course

completion in the specific combined technical education course. Table 11 shows descriptive statistics and correlations among the research variables. Unlike research question two that found a correlation between faculty type and semesters of service, none of the correlations among the variables were statistically significant for research question three.

The assumptions of normality, linearity, no auto-correlations, no multicollinearity, and homoscedasticity were examined and met. Again, the minimal outliers were related to the semesters of service, with some faculty having as little as one semester and a few faculty members being long-term at 88 semesters of service.

The model was not statistically significant $R^2 = .04$, $F(3, 26) = .38$, $p = .770$ indicating the three variables together were not useful as predictors of successful course completion. Again, as with RQ #2, partial correlations and semi-partial correlations were examined to determine if any of the predictor variables were related to successful course completion when other variables were factored out. Table 12 shows low partial and semi-partial correlations. Both the partial and semi-partial correlations were low, hence factoring out other variables showed no correlations being hidden in the overall correlation.

Table 11

Descriptive Statistics and Correlations

	Completion	Faculty Type	Degree Type	Semesters of Service
Faculty Type	.18			
Degree Type	.09	-.32		
Semester of Service	-.05	-.27	-.10	
M	85.51	1.50	2.43	8.30
SD	12.40	0.51	1.07	16.02

*p < .05

Table 12

Regression Coefficients

Variable	*b*	S_b	*Beta*	*t*	*sig*	Partial Correlation	Semi-Partial Correlation
Faculty Type	4.39	9.68	.18	0.90	.374	.18	.17
Degree Type	1.13	4.86	.10	0.51	.616	.10	.10
Semesters of Service	-0.08	2.23	.01	-0.51	.959	.01	.01
Constant	76.23	9.68		7.87	.000		

R^2=.04, $F(3,26) = .38$, $p = .770$

Summary

This chapter presented the research findings for all three research questions. The research questions were provided, followed by the results for each question. For each question, the variables were defined. The data were analyzed with factorial ANOVA to examine differences in successful course completion based on course type and faculty type and two different multiple regressions with the intent of identifying the variables that predict successful course completion. Significant findings, as well as the findings found not to be significant, were presented.

Because the majority of the findings were not significant, additional tests were presented to confirm the accuracy of the analysis. While many of the results showed no significance, the

results provided a knowledge base for community colleges to consider when hiring faculty and placing them in specific courses. There was a significant difference in successful course completion between course types. This difference showed technical courses had a higher successful completion rate. These conclusions, as well as potential future research, are examined in the next chapter.

CHAPTER 5

DISCUSSION

The current study focused on faculty teaching at community college campuses within the Ivy Tech Community College statewide system. Data analysis determined successful course completion was not predicted based on a course being taught by an adjunct faculty member or full-time faculty member. The study included two course types to study the impact in both general education and technical education courses. This chapter summarizes the study, reviews the findings, provides considerations, relates the findings to past research and theories, includes limitations discovered in the study, provides recommendations for future research, and offers the researcher's conclusions.

Study Summary

The problem and purpose of the study remained consistent from the beginning of the study development and are presented below. The study provided few significant findings, but the key findings are presented with recommendations for consideration. Even though significant findings related to the research questions were not found, knowledge was gained that will provide community college administrators with data and analysis for decision-making related to the balance of full-time faculty and adjunct faculty in both general education and technical education classrooms.

Statement of the Problem

The use of adjunct faculty members in community colleges is prevalent and continues to increase across the nation (Center for Community College Student Engagement, 2014). With this increase, it is essential to know if successful course completion is impacted when taught by an adjunct faculty member compared to full-time faculty. Many attributes affecting the success of students may distinguish adjunct faculty from full-time faculty. The problem for this study was to determine the influence the type of faculty has on students completing courses in different subject areas: general education versus technical education. Additional analyses were conducted to examine faculty characteristics and their impact on students completing the same designated courses.

As community colleges balance the dual mission of transfer and career and technical education, student retention is critical. With an expected large gap in a skilled workforce, community colleges have external factions demanding improvements in completions (Lumina Foundation, 2018). Hence, community colleges must analyze all factors leading to low retention rates. One such factor, the use of adjunct faculty and the critical role they play in student retention, has not been a large area of focus. Therefore, this study attempted to provide data around the usage of different faculty types within community colleges classrooms. The research is intended to provide knowledge for administrators to make data-based decisions that will have the most impact on retention for community colleges.

Purpose of the Study

The purpose of this study was to fill a gap in knowledge regarding the impact full-time faculty and adjunct faculty have on successful course completion in community colleges. The eventual goal was to equip leaders within both Ivy Tech Community College and community

colleges nationally with the knowledge to make the best faculty hiring decisions for student success. The research provided a detailed analysis of student course completion in both general education and technical education taught by full-time and adjunct faculty. The research further analyzed contributing factors, including teaching experience and faculty level of education, within both the general education and technical education course type.

Theories and Research Drivers

The study was motivated by the research of Spady (1970) and Tinto (1987), who inferred that the members of an institution play a significant role in student persistence. Tinto (2012a) has continued his research throughout his career with confirmation that the institutional experience is pivotal in student success. These theories, along with research such as Jacoby's (2006), indicate student graduation rates will decrease as their exposure to adjunct faculty members increased. This information created a need to determine drivers at the course level leading to the decreased persistence and graduation rates. With the research revealing community college's continual increase in the number of adjunct faculty members (Center for Community College Student Engagement, 2014), the problem statement was created with a focus on successful course completion based on faculty type of full-time or adjunct.

Identifying the Sample for the Study

Institution. The study focused on six campuses within the statewide Ivy Tech Community College system, which is accredited as one community college. The six campuses represent both rural and urban geographic areas. The campuses also range in scope representing the three size designations the college uses as internal identifiers.

Sample. Faculty were the primary emphasis of the study. Included were 60 faculty members split equally between full-time and adjunct faculty. There were 30 faculty teaching an identified general education course and 30 teaching in two different technical courses.

Courses. Prior to analyzing the three research questions, it was necessary to determine if the two technical courses, welding and electrical, could be consolidated into one combined technical course for the study. Because the study was focused on six campuses, even though there was a large sample for the English general education course, the technical courses were limited in the designated technical programs offered. Therefore, it was necessary to utilize two different introductory technical courses, which provided a sufficient number of faculty for the study. A one-way ANOVA was used to confirm there was no significant difference in successful course completion between an introductory welding course and an introductory electrical course. With that confirmation, the two technical courses were combined for the three research questions.

Findings and Considerations

Research Question #1

RQ# 1: Is there a difference in successful course completion between general and technical courses taught by full-time faculty versus adjunct faculty?

Findings: The data analysis found no significant differences in successful course completion taught by full-time faculty versus adjunct faculty. There was a significant difference in course completion success based on course type. The combined technical course had a significantly higher success rate than the general education course. This significant difference supported the need for further analysis with the additional research questions.

Considerations: Several factors may have contributed to the significant difference in course type result; all of which would require additional study, including qualitative analysis. General education courses have a wide range of students from all programs, including those who intend to transfer and those who are seeking other degrees, including various technical majors. Those students seeking a degree in hands-on technical programs may not have the desire to focus on courses they view as unrelated to their program particularly if they are a student who learns better through applied learning. While the same student may be successful in a technical program, they may struggle with the general education course.

The educational degree structure at Ivy Tech Community College provides students the opportunity to earn a Technical Certificate, consisting primarily of the technical hands-on courses in their degree. Students seeking an Associate Degree in a technical field must also enroll in the general education courses. Because a Technical Certificate does not require as many general education courses, some students may begin working toward the associate degree but struggle with the general education courses. When they encounter this difficulty, they may withdraw and switch to a Technical Certificate path. Students choosing to withdraw during the semester would receive an FW. This hypothesis requires additional study, including qualitative interviews with students to understand their reasoning for withdrawal.

For those students who wish to obtain an Associate Degree in one of the technical programs, they may find themselves struggling in the general education courses to the point of receiving a grade of F. While these students may choose to retake the course, the successful course completion remains part of the data used for this study. This hypothesis would require future study, including an analysis of students who later took the course and succeeded.

Additional research related to this study might include an analysis of the faculty person teaching the student with the unsuccessful completion versus the student with a successful completion.

Some students enter the community college with an undetermined goal. For these students, they are trying to decide which major or career path to choose. When this is the case, they are often enrolled in many general education courses that would apply to multiple degrees. The English course in this study is one such course in which they would be enrolled. These students may be the least dedicated students for completion. Because they are trying to find a goal rather than entering college with a goal, they may be less likely to complete it when they encounter barriers. Whereas the technical degree-seeking students often have a goal in sight and understand the benefits that will come with the degree. They may be more likely to push through any barriers in order to complete. Again, this hypothesis would require additional study, including qualitative elements, to understand the various factors that go into the students' decision to withdraw.

Research Question #2

RQ #2: Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in general education courses?

Findings: Although RQ #1 found no significant difference based on faculty type, additional analysis occurred with the two course types separated. RQ #2 focused on the English general education course. The multiple regression analysis was not significant, such that successful course completion was not predicted by faculty type, degree type, or number of semesters of service for faculty for the introductory English general education course.

Considerations: The credentialing requirement for faculty teaching general education courses often requires an advanced degree with either a Master's degree or Doctorate degree

being the typical degree held by faculty teaching the English course studied. This requirement may have led to the not significant result for the degree type on course completion in this research because of the limited variability. This degree requirement is in place for both full-time faculty and adjunct faculty.

The lack of relationship between faculty type (full-time faculty and adjunct faculty) within the general education course and successful course completion may be representative of the support full-time faculty provide to students regardless of the course section they are enrolled. Robust support services are required for student success in community colleges. The results of this study may show that the services transcend the parameters of the course, including the variables included in this study. This hypothesis would require additional study, including an analysis of the support services provided to students who were successful completers, as well as those who did not complete. This study shows that the drivers of success in this particular general education course go beyond the faculty type, degree type, or the semesters of service for the faculty member.

The type of student was not included in the variables of this study. As the research found, part-time students are particularly vulnerable, requiring external support beyond the instruction provided during class time (Thirolf & Wood, 2018). Without the student parameter included or separated in the study, it is not possible to determine if this might be an underlying factor in this study. Future research should be conducted to determine if the faculty type has an impact on different student types.

The lack of relationship between faculty type (full-time faculty and adjunct faculty) within the general education course and successful course completion might also be representative of the support the college and the full-time faculty provide to adjunct faculty.

Helping students be successful in a class goes beyond teaching methods. Both Spady (1970) and Tinto (2012a) developed the theories used in this research, which acknowledge that the interaction between faculty and students plays a critical role in student success. The assumption that adjunct faculty in the community college do not have the same interaction with students as full-time faculty may be a false assumption. That is perhaps one explanation for the results of this study. Many adjunct faculty members are extremely dedicated to their students, and while their compensation may not support their extra effort in assisting students outside the classroom, the culture at Ivy Tech Community College may create the environment and expectation for this additional support.

Adjunct faculty members who are made to feel a part of the institution with support and professional development may perform at the same level as full-time faculty members. This study neither identified the support and professional development given to adjunct faculty nor the difference in support and professional development compared to full-time faculty within the Ivy Tech Community College system. Previous research found that regardless of the institution type, there are considerable differences in pay, access to office space, benefits, and other related recognition for the adjunct faculty (Bakley & Brodersen, 2018; Toutkoushian & Bellas, 2003). With the results of this research showing that adjunct faculty are performing at the same level in the classroom with regard to successful completion, it would suggest the continued use of adjuncts should be considere. However, even though the results do not support the need to provide additional attention and assistance to adjunct faculty it seems it would be beneficial to help feel more connected to the institution and the students they teach. Future research should focus on the support and professional development given to adjunct faculty with a focus on the differences in course success based on those parameters.

This study was focused on Ivy Tech Community College, which is part of a robust system focused on student success. This structure and focus could be drivers for the results. Future research would need to be conducted to determine if Ivy Tech Community College's full-time faculty and adjunct faculty are an anomaly in their similar performance in teaching this English course as compared to other community colleges. This design would be beneficial to ensure important decisions at other community colleges are not made erroneously. Within the Ivy Tech Community College system, however, this is valuable information for this particular English course when assigning faculty members.

Research Question #3

RQ #3: Does faculty type, degree type, and number of semesters of service for faculty predict successful course completion in technical education courses?

Findings: As with research question 2, research question 3 used a multiple regression analysis but with the focus on the combined technical courses. Again, successful course completion was not significantly related to faculty type, degree type, or number of semesters of service for faculty. With RQ #1 showing the combined technical course had a significantly higher success rate than the general education course, the desire to determine the cause of this made it even more important to study this course separate from the general education course.

Considerations: Due to the general education course being a transfer course, the degree requirement for faculty is typically a Master's Degree or higher, whereas faculty for the technical courses have a much wider range of educational preparation extending from a certification to a Doctorate degree. Higher education values degree attainment; however, when technical courses are involved, the type of degree may be less important than the technical expertise and background of the faculty member. This research supports this assumption. Within the technical

course, the type of degree, even with the wide range of degree attainment, did not have any significant impact on course completion success.

Technical course faculty typically have considerable “real world” experience they translate into the classroom. This experience may supersede any of the variables studied. While they may not have a degree or have not taught long-term, their professional experience may lead to a rich learning environment. Students in technical courses may find this experience critical to their understanding, leading to their successful completion of the course. An additional variable of external experience may be a valuable parameter to include in the study and should be considered in the future to understand the success in the combined technical course with more field experienced faculty.

Technical programs within the Ivy Tech Community College system often have smaller enrollments. Programs tend to be small, and there is a dedicated program chair who connects with the students in the program and also the adjunct faculty and full-time faculty in the program on a regular basis. This may be an element impacting a higher success rate. The students being connected to a full-time faculty member outside of the actual class taught by an adjunct faculty they are taking may be the connection they need to the college. If so, this potentially makes the faculty type in the classroom a non-issue. A future qualitative study investigating these parameters may find the connections beyond the course faculty member to be a significant factor.

Additional Considerations

Selected courses: All three research questions were based on introductory-level courses. These courses were chosen because the courses typically have a balanced mixture of full-time and adjunct faculty members teaching the courses. Higher-level courses within the program or

capstone courses may yield different results. However, the differences in faculty may be less significant as students become more committed as they advance in their program. Further research on those courses could use the same variables to determine if the model used in this study is not significant in those courses as well.

Individual campus-level focus. The sample used in the study crossed six different campuses within the Ivy Tech Community College system. Because of this, a limited number of courses were in the sample from each of the six campuses. Differences in success occurring at each campus may not have been identifiable due to the small number. Additional study at Ivy Tech Community College could occur at each campus using the variables in this study. Because the campuses cover the entire State of Indiana, the geographic variances between rural and urban campuses might produce different results. If differences are found between campuses, additional study could occur identifying other variables to study. If differences among campuses are found, it might further support the hypothesis that efforts beyond these variables are more critical to successful course completion. Therefore, this might lead to a mixed methods study to expose those factors attributing to the differences in successful course completion.

Focus on the student. Additional consideration should be given to the students. This study focused on the faculty teaching and related faculty attributes. However, a substantial component of students successfully completing a course is connected to the students themselves. No consideration was given in the study to the students' ability to succeed. Their GPA prior to the course, their age, external barriers they face, and their previous college experience are just a few of the variables that impact students beyond what occurs in the classroom. Future studies might first replicate the model in this research with a larger course sample, with follow-up research questions focused on the students and the variables surrounding the students.

Supportive literature and theories. The literature is rich with the assumption the extensive and increasing use of adjunct faculty in community colleges is creating great harm to students; however, this study gives pause to that assumption. The research highlighted the concern of low community college completion rates. Radford et al. (2010) cited a completion rate of 46% in 2010. With this concern, community colleges continuously work to identify the drivers behind the issue, often placing blame or attributing to factors that may not be thoroughly researched.

While research, such as Kirk and Spector's (2009), cited examples of student performance being impacted by faculty type, many of the studies to date have been limited to specific programs or colleges. It is acknowledged the research in this study was also limited in scope. However, it does provide additional support to the research by Bettinger and Long (2010). They examined the likelihood students would move to the next course in a program when taught by an adjunct versus a full-time faculty member. Similar to RQ #1, Bettinger and Long focused on a programmatic course versus a general education course. The research in this study, coupled with Bettinger and Long, provides evidence that community colleges must delve deeper into factors leading to successful course completion beyond faculty type.

With the results of this study indicating the variables of faculty type, degree type, and semesters of service do not impact successful course completion, administrators at community colleges must look deeper. Perhaps this is what led to the faculty development theories in the 1960s. As the research indicated, the movement for faculty development theories arose in the 1960s around the emergence of centers for faculty and instructional development. Within these centers, three faculty developmental theories emerged: behaviorism, sensitivity training movement, and principles of learning and individual differences (McKeachie, 1991). These

development theories pointed to the recognition that a strong faculty person goes beyond individual identifiers. A well-rounded faculty person can be either a full-time faculty member or adjunct faculty member who is supported by the college in which they serve. They are individuals with life experiences and bring their own individual attributes to the classroom leading to the success a faculty member may have, leading students to successful course completion.

Limitations

While conducting the study, additional limitations were discovered which may impact the results. The following limitations should be considered when evaluating the results or replicating this study. Many of these limitations have been highlighted throughout the results; however, it is important to acknowledge the limitations as they may impact the results and usage of the knowledge gained from this study.

One limiting factor was the number of courses included. Only three courses were included in the study; an introductory English course and the combined welding and electrical technical courses. An additional limitation is the level of each of the courses. All courses were at the introductory level. Advanced courses or capstone courses may have provided a different result.

Even though the sample included 660 students, the study examined course-level success. Therefore, the sample was only 60 identified courses, which is relatively small. Hence, the power of the statistical analysis may be low. The students and their backgrounds were not considered in the study as it was limited to only a study of the faculty type (full-time versus adjunct). The courses were also limited to one institution, Ivy Tech Community College. While diversity

within that system was achieved by utilizing six different campuses, only one college system was used in the study.

The final limitation is in regard to the faculty. Only a small selected number of variables for the faculty were included in the study. Other factors, including experience outside the classroom, support from the college, support from their peers, and education beyond the designated degrees, were not considered in the research.

Future Research

Throughout the analysis of each research question, there were suggestions for future research. There is a substantial opportunity to analyze the topic further. Since the identified variables did not identify the issues leading to students not successfully completing courses, it is important to continue to research related variables. The research available on the topic is sparse, and most studies are limited in scope. While this study did fill a gap in the related research, there is still a significant amount of research on the topic that could and should occur. Additional research is suggested for many variables.

Student-level motivations were not considered in the study. Some technical students may determine a Technical Certificate will be a sufficient degree so they can avoid general education courses. They may withdraw from the course upon determining they will no longer seek an Associate Degree. Future research should analyze the students' motivation and other student parameters that may impact course completion.

Some students who do not successfully complete the course may choose to retake the course. While these students may ultimately succeed, the successful course completion remains as a part of the data used for this study. Future research should analyze the results with retakes included in the data.

The technical degree-seeking students may have different motivations and desires to complete a technical course. They may be more likely to push through any barriers in order to complete. A qualitative study would identify the factors that lead to the withdrawal decision for students. Additionally, this study was limited in scope related to the chosen variables. Additional variables, including professional development and support provided to faculty, should be included in future research.

With the focus on faculty and the successful course completion in the courses they taught, the lack of focus on students provides additional study opportunities. All students were one collective group. Community colleges have a large population that is part-time. Categorizing students by type in future studies may find the results differ for part-time versus full-time students.

Finally, the variables around students successfully completing may not be available in documented institutional data. These factors may not be discoverable with a quantitative study. The motive for lack of success may be factors measured more appropriately by qualitative studies. A qualitative study with interviews of faculty and students could uncover drivers for course completion success.

Conclusions

The research leading to the development of this study clearly stated the concern of successful course completion. The concern is broad; beyond the individual course level success, the overall student retention in community colleges is very low. This study focused the analyses at the course level with an emphasis on faculty. The study did not support the hypothesis that faculty attributes lead to the student completing a course successfully or unsuccessfully.

Administrators cannot stop with this research. The problem still exists and needs attention. This research should be a call to action for additional research. Often decisions are made based on assumptions. However, this research does not support the common assumption that students are likely to complete more successfully when taught by a full-time faculty member. Additional research beyond faculty type is critical to identifying the factors leading to student success.

Recognizing much more goes into a good faculty member than just the variables in this study is important. Providing professional development and support to faculty in an effort to create a well-rounded faculty may be more critical than ensuring faculty have the right degrees and semesters of teaching experience. Understanding the needs of students and providing faculty with the tools to address those needs are critical.

As the researcher, I was not surprised by the significant differences found in course types. As previously stated, many technical students enjoy the hands-on aspects of the coursework, while at the same time find it difficult to succeed in their general education courses. The research supported this assumption, with the general education courses having a lower successful course completion. However, I thought I would find more significant results. I believed the success would improve with higher degrees, assuming the faculty would have more knowledge about different instructional methods and tools for student success. Perhaps that knowledge and those skills are gained from professional development not measured in this study. With the technical courses showing a higher success rate, the research could point to the importance of experience outside the classroom, either for the student or the faculty, which is the critical component of successful course completion that community college administrators should focus more intently.

This study added to the knowledge base on student success but did not find the ultimate solution to successful course completion. This study confirmed student-level data must also be included in the analysis as the faculty attributes included were not contributing factors. However, until students are more successful in community colleges, the research must continue with solutions identified. Recognizing the attributing factors is critical to community college success andthe success of the economies in the states the colleges serve. Students deserve the answers to be found and the solutions to be implemented.

REFERENCES

American Association of Community Colleges (AACC). (2014). Empowering community colleges to build the nation's future: An implementation guide. http://www.aacc21stcentureycenter.org/wpcontent/uploads/2014/04/Empoweringcommunitycolleges_final.pdf

American Association of University Professors. (2018). Data snapshot: Contingent faculty in US higher ed. AAUP.

Bakley, A. L., & Brodersen, L. A. (2018). Waiting to become: Adjunct faculty experiences at multi-campus community colleges. Community College Journal of Research and Practices, 42(2), 129-145. https://doi.org/10.1080/10668926.2017.1279090

Beach, J. M. (2010). Gateway to Opportunity. Stylus Publishing.

Bettinger, E., & Long, B. (2005). Help or hinder? Adjunct professors and student outcomes. https://www.researchgate.net/publication/254201966_Help_or_Hinder_Adjunct_Professors_and_Student_Outcomes

Bettinger, E., & Long, B. (2010). Does cheaper mean better? The impact of using adjunct instructors on student outcomes. The Review of Economics and Statistics, 92(3), 598-613. https://scholar.harvard.edu/files/btl/files/bettinger_long_2010_does_cheaper_mean_better_-_impact_of_using_adjuncts_-_restat.pdf

Bianco-Mathis, V., & Chalofsky, N. (1996). The adjunct faculty. Sage Publishing.

Biles, G. E., & Tuckman, H. P. (1986). Part-time faculty personnel management policies. Macmillan Publishing Company.

Bonet, G., & Walters, B. R. (2016). High impact practices: Student engagement and retention. The College Student, 50(2), 224-235. https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1101&context=kb_pubs

Braxton, J. M., & McClendon, S. A. (2001). The fostering of social integration and retention through institutional practice. Journal of College Student Retention, 3(1), 57-71. https://doi.org/10.2190/RGXJ-U08C-06VB-JK7D

Caruth, G. D., & Caruth, D. L. (2013). Adjunct faculty: Who are these unsung heroes of academe? Current Issues in Education, 16(3), 1-11. https://www.cft.org/sites/main/files/file-attachments/who_are_these_unsung_heroes_of_academe.pdf

Center for Community College Student Engagement. (2014). Contingent commitments: Bringing part-time faculty into focus. (ED561121). ERIC. https://files.eric.ed.gov/fulltext/ED561121.pdf

Charlier, H. D., & Williams, M. R. (2011). The reliance on and demand for adjunct faculty members in America's rural, suburban and urban community colleges. Community College Review, 39(2), 160-180. https://doi.org/10.1177/0091552111405839

Cohen, A. M., Brawer, F. B., & Kisker, C. B. (2013). The American community college. Jossey-Bass.

Complete College America (CCA). (2012). American dreams are powered by college completion.https://completecollege.org/

Cotten, S. R., & Wilson, B. (2006). Student-faculty interactions: Dynamics and determinants. Higher Education, 51(4), 487-519. https://doi.org/10.1007/s10734-004-1705-4

Cox, B. E., McIntosh, K. L., Terenzini, P. T., Reason, R. D., & Lutovsky Quaye, B. R. (2010). Pedagogical signals of faculty approachability: Factors shaping faculty-student interaction outside the classroom. Research in Higher Education, 51(8), 767-788. https://www.jstor.org/stable/40927279

Datray, J. L., Saxon, D. P., & Martirosyan, N. M. (2014). Adjunct faculty in developmental education: Best practices, challenges, and recommendations. The Community College Enterprise, 20(1), 36-49.

Dolan, V. (2011). The isolation of online adjunct faculty and its impact on their performance. International Review of Research in Open and Distance Learning, 12(2), 63-77. https://doi.org/10.19173/irrodl.v12i2.793

Dolinsky, R. (2013). The effects of contingency on student success and professoriate. Peer Review, 15(3), 13-16. https://www.cft.org/sites/main/files/file-attachments/peer_review___summer_2013_the_effects_of_contingency_on_student_success_and_the_professoriate.pdf

Donaldson, J. F., Graham, S. W., Martindill, W., & Bradley, S. (2000). Adult undergraduate students: How do they define their experiences and their success. Journal of Continuing Higher Education, 48(2), 2-11. https://doi.org/10.1080/07377366.2000.10400400

Dougherty, K. J. (1994). The contradictory college: The conflicting origins, impacts and futures of the community college. State University of New York Press.

Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., & Reddy, V. (2014). Performance funding for higher education: Forms, origins, impacts and futures. American Academy of Political and Social Science, 655(1), 163-184. https://doi.org/10.1177/0027162451042

Eagan, M. K. (2007). A national picture of part-time community college faculty: Changing trends in demographics and employment characteristics. New Directions for Community Colleges, 2007(140), 5-14. https://doi.org/10.1002/cc.299

Eagan, M. K., & Jaeger, A. J. (2008). Effects of exposure to part-time faculty on community college transfer. Research in Higher Education, 50(2), 168-188. https://doi.org/10.1007/s11162-008-9113-8

Eagan, M. K., & Jaeger, A. J. (2011). Examining retention and contingent faculty use in a state system of public higher education. The Journal of Educational Policy, 25, 7-21. https://doi.org/10.1177/0895904810361723

Eagan, M. K., Jaeger, A. J., & Grantham, A. (2015). Supporting the academic majority: Policies and practices related to part-time faculty's job satisfaction. The Journal of Higher Education, 86(3), 448-483. https://doi.org/10.1080/00221546.2015.11777371

Eney, P. R., & Davidson, E. (2012). Improving supervision of part-time instructors. Journal of Developmental Education, 36(2), 28-39. https://ncde.appstate.edu/sites/ncde.appstate.edu/files/Outstanding_JDE_V30-1.pdf

Ewell, P., & Jenkins, D. (2008). Using state student unit record data to increase community college success. New Directions for Community Colleges, 2008(143) 71-81. https://doi.org/10.1002/cc.337

Figlio, D. N., Schapiro, M. O., & Soter, K. B. (2015). Are tenure track professors better teachers? The Review of Economics and Statistics, 97(4), 715-724. https://doi.org/10.1162/REST_a_00529

Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community college. Community College Review, 36(2), 68-88. https://doi.org/10.1177/0091552108320222

Gappa, J. M., & Leslie, D. W. (1993). The invisible faculty: Improving the status of part-timers in higher education. Jossey-Bass.

Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. Review of Educational Research, 80(3), 437-469. https://doi.org/10.3102/0034654310370163

Gottschalk, L., & McEachem, S. (2010). The frustrated career: Casual employment in higher education. Australian Universities' Review, 52(1), 37-50 (EJ877046). ERIC. https://files.eric.ed.gov/fulltext/.pdf

Green, D. W. (2007). Adjunct faculty and the continuing quest for quality. New Directions for Community Colleges, 2007(140), 29-39. https://doi.org/10.1002/cc.302

Haeger, J. D. (1998). Part-time faculty, quality programs, and economic realities. New Directions for Higher Education, 1998(104), 81-88. https://doi.org/10.1002/he.10408

Han, C., Farruggia, S. P., & Moss, T. P. (2017). Effects of academic mindsets on college students' achievement and retention. Journal of College Student Development, 58(8), 1119-1134. https://doi.org/10.1353/csd.2017.0089

Hillman, N. W., Tandberg, D. A., & Gross, J. P. (2014). Performance funding in higher education: Do financial incentives impact college completions? The Journal of HIgher Education, 85(6), 826-858. https://doi.org/10.1080/00221546.2014.11777349

Hope, J. (2016). Support part-time faculty to boost student retention, completion rates. Dean & Provost, 17(10), 6-7. https://doi.org/10.1002/dap

Indiana Commission for Higher Education. (2018). Evolution of performance funding. https://www.in.gov/che/files/2018_PF_Evolution_Notes_5_31_18_wnotes.pdf

Integrated postsecondary education data system. (n.d.). National Center for Education Statistics. https://nces.ed.gov/ipeds/

Ivy Tech Community College. (2018). Our communities. Your college. https://strategicplan.ivytech.edu/

Ivy Tech Community College. (2019). About Ivy Tech Community College. https://www.ivytech.edu/about/

Jacoby, D. (2006). Effects of part-time faculty employment on community college graudation rates. The Journal of Higher Education, 77(6), 1081-1103. https://doi.org/10.1080/00221546.2006.11778957

Jaeger, A. J., & Eagan, M. K. (2009). Examining the effect of part-time faculty members on associate's degree completion. Community College Review, 36(3), 167-194. https://doi.org/10.1177/0091552108327070

Jaeger, A. J., & Eagan, M. K. (2011). Navigating the transfer process: Analyzing the effects of part-time faculty exposure by academic program. American Behavioral Scientist, 55(11), 1510-1532. https://doi.org10.1177/0002764211409383

JBL Associates. (2008). Reversing course: The troubled state of academic staffing and a path forward. The American Federation of Teachers. https://www.aft.org/sites/default/files/reversingcourse1008.pdf

Jepsen, C., Troske, K., & Coomes, P. (2014). The labor-market returns to community college degrees, diplomas and certificates. Journal of Labor Economics, 32(1), 95-121. https://doi.org/10.1086/671809

Johnson, I. Y. (2011). Contingent instructors and student outcomes: An artifact or a fact? Research in Higher Education, 52(8), 761-785. https://www.jstor.org/stable/41483817

Kezar, A., & Maxey, D. (2013). An examination of the changing faculty: Ensuring instittutional quality and achieving desired student learning outcomes. Council for Higher Education Accreditation. https://www.ewa.org/sites/main/files/file-attachments/chea_examination_changing_faculty_2013.pdf

Kirk, F. R., & Spector, C. A. (2009). A comparison of the achievement of students taught by full-time versus adjunct faculty in business courses. Academy of Educational Leadership Journal, 13(2), 73-81. https://www.abacademies.org/articles/aeljvol13no22009.pdf

Landrum, R. E. (2009). Are there instructional differences between full-time and part-time faculty? College Teaching, 57(1), 23-26. https://doi.org/10.3200/CTCH.57.1.23-26

Levin, J. S., & Montero Hernandez, V. (2014). Divided identity: Part-time faculty in public colleges and universities. The Review of Higher Education, 37(4), 531-557. https://.doi.org/10.1353/rhe.2014.0033

Levin, J. S., Kater, S., & Wagoner, R. L. (2006). Community college faculty: At work in the new economy. Palgrave Macmillan.

Lillibridge, F. (2008). Retention tracking using institutional data. New Directions for Community Colleges, 2008(143), 19-30. https://doi.org/10.1002/cc.332

Lloyd, P. M., & Eckhardt, R. A. (2010). Strategies for improving retention of community college students in sciences. Science Educator, 19(1), 33-41. https://files.eric.ed.gov/fulltext/EJ874152.pdf

Lumina Foundation. (2018). Who we are and what we do. https://www.luminafoundation.org/wp-content/uploads/2018/11/lumina-fact-sheet-2021.pdfLyons, R. E. (2007). Best practices for supporting adjunct faculty. Anker Publishing Company.

Maynard, D. C., & Joseph, T. A. (2008). Are all part-time faculty underemployed? The influence of faculty status preference on satisfaction and commitment. The International Journal of Higher Education and Educational Planning, 55(2), 139-154. https://doi.org/10.1007/s10734-006-9039-z

McArthur, R. C. (2005). Faculty-based advising: An important factor in community college retention. Community College Review, 32(4), 1-18. https://doi.org/10.1.1.182.2429

McKeachie, W. J. (1991). What theories underlie the practice of faculty development? https://doi.org/10.1.1.182.2429

McLaughlin, F. (2005). Adjunct faculty at the community college: Second-class professionals? Teaching English in Two Year Colleges, 33(2), 185-193. https://library.ncte.org/journals/tetyc/issues/v33-2/4643

Meixner, C., Kruck, S. E., & Madden, L. T. (2010). Inclusion of part-time faculty for the benefit of faculty and students. College Teaching, 58(4), 141-147. https://doi.org/10.1080/87567555.2010.484032

Mertes, S. J., & Jankoviak, M. W. (2016). Creating a college-wide retention program. Community College Enterprise, 22(1), 15-27. https://www.schoolcraft.edu/cce/22.1.9-27.pdf

Mueller, B., Mandernach, B. J., & Sanderson, K. (2013). Adjunct versus full-time faculty: Comparison of student outcomes in the online classroom. MERLOT Journal of Online Learning and Teaching, 9(3), 341-352. Retrieved March 11, 2021, from https://jolt.merlot.org/vol9no3/mueller_0913.htm

National Center for Education Statistics. (2017). Trend Generator. https://nces.ed.gov/ipeds/TrendGenerator/app/answer/2/2?f=1%3D4

National Student Clearinghouse. (2019, June 10). https://nscresearchcenter.org/snapshotreport35-first-year-persistence-and-retention/

Obama, B. (2013, July 14). Remarks by the President on the American graduation initiative, Macomb Community College. Office of the Press Secretary. http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-the-American-Graduation-Initiative-in-Warren-MI

OC-Star Award Finalist. (2017, September 17). Odessa College. https://www.odessa.edu/announcements/StarAwardFinalist.html

Pons, P. E., Burnett, D. D., Williams, M. R., & Paredes, T. M. (2017). Why do they do it? A case study of factors influencing part-time faculty to seek employment at a community college. Community College Enterprise, 23(1), 43-59. https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1034&context=efl_fac_pubs

Radford, A. W., Berkner, L., Wheeless, S. C., & Shepard, B. (2010). Persistence and attainment of 2003-04 beginning postsecondary students: After 6 years. US Department of

Education, National Center for Education Statistics. https://nces.ed.gov/pubs2011/2011151.pdf

Reason, R. D. (2009). Student variables that predict retention: Recent research and new developments. NASPA Journal, 46(3), 482-501. https://www.uky.edu/ie/sites/www.uky.edu.ie/files/uploads/RM_Student%20Variables%20that%20Predict%20Retention%20Recent%20Research%20and%20New%20Developments.pdf

Romsa, K., Lindstrom Bremer, K., & Lewis, J. (2017). The evolution of student-faculty interactions: What matters to millennial college students? College of Student Affairs Journal, 35(2), 85-99. https://doi.org/10.1353/csj.2017.0015

Rutherford, A., & Rabovsky, T. (2014). Evaluating impacts of performance funding policies on student outcomes in higher education. The Annals of the American Academy of Political and Social Science, 655(1), 185-208. https://doi.org10.1177/0002716214541048

Schuster, J. H., & Finkelstein, M. J. (2010). The American faculty: The restructuring of academic work and careers. John Hopkins University Press.

Schutz, K. R., Drake, B. M., Lessner, J., & Hughes, G. F. (2015). A comparison of community college full-time and adjunct faculties' perceptions of factors associated with grade inflation. The Journal of Continuing Higher Education, 63(3), 180-192. https://doi.org/10.1080/07377363.2015.1085951

Shelton, K. (2010). Community college advantages: The roles of accreditation with financial aid. Community & Junior College Libraries, 16(3), 197-208. https://doi.org/10.1080/02763915.2010.497690

Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. Interchange, 19(1), 64-85. https://doi.org/10.1007/BF02214313

Spellman, N. (2007). Enrollment and retention barriers adult students encounter. The Community College Enterprise, 13(1), 63-79. https://www.schoolcraft.edu/pdfs/cce/13.1.63-79.pdf

Tandberg, D. A., & Hillman, N. W. (2014). State higher education peformance funding: Data, outcomes, and policy implications. The Journal of Education Finance, 39(3), 222-243. https://www.jstor.org/stable/23597610

The College Board. (2010). Trends in college pricing. https://www.collegeboard.org/

The Community College of Vermont. (2019). Community college of Vermont. https://ccv.edu/

Thelin, J. R. (2011). A history of American higher education. John Hopkins University Press.

Thirolf, K. Q., & Wood, R. S. (2018). Contingent faculty at community colleges: The too-often overlooked and under-engaged faculty majority. New Directions for Institutional Research, 2017(176), 55-66. doi:10.1002/ir.20244

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition (2nd ed.). University of Chicago Press.

Tinto, V. (2012a). Completing college: Rethinking institutional action. University of Chicago Press.

Tinto, V. (2012b). Leaving college: Rethinking the causes and cures of student retention (2nd ed.). University of Chicago Press.

Toutkoushian, R. K., & Bellas, M. L. (2003). The effects of part-time employment and gender on faculty earnings and satisfaction: Evidence from the NSOPF: 93. The Journal of Higher Education, 74(2), 172-195. https://doi.org/10.1080/00221546.2003.11777195

Townsend, B. K., & Twombly, S. B. (2007). Community college faculty: Overlooked and undervalued. ASHE Higher Education Report, 32(6), 11-31. https://doi.org/10.1002/aehe.3206

Travers, S. (2016). Supporting online student retention in community college: What data is most relevant? The Quarterly Review of Distance Education, 17(4), 49-61. https://link.gale.com/apps/doc/A493448342/PPNU?u=indianastateuniv&sid=PPNU&xid=82787327

Umbach, P. D. (2007). How effective are they? Exploring the impact of contingent faculty on undergraduate education. The Review of High Education, 30(2), 91-123. https://doi.org/10.1353/rhe.2006.0080

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. Research in Higher Education, 46(2), 153-184. https://www.jstor.org/stable/40197351

United States Census Bureau. (2018). Postsecondary enrollment before, during and after the great recession. https://www.census.gov/newsroom/press-releases/2018/postsecondary.html

Witherspoon, J. (2014). Get students to complete. Community College Journal, 84(6), 20-21. https://www.ccjournal-digital.com/ccjournal/20140607?pm=2&pg=22#pg22

APPENDIX A: USE OF DATA AGREEMENT

IVY TECH COMMUNITY COLLEGE OF INDIANA

DATA SHARING AGREEMENT

This Data Sharing Agreement (Agreement) is entered into by and between Ivy Tech Community College of Indiana having a place of business at 50 W. Fall Creek Parkway N. Drive, Indianapolis, Indiana 46208 ("Ivy Tech") and Lea Anne Crooks, an Ivy Tech employee requesting dissertation permission to use Ivy Tech data ("Contractor"), to establish the content, use, and protection of data needed by Contractor to support the dissertation, whether such data is provided by Ivy Tech or collected by Contractor on behalf of Ivy Tech. This Agreement and Appendix B is hereby attached to and incorporated within all prior and subsequent Contract Agreements with Contractor executed by the parties, this 1st day of November 2019. The terms of this Data Sharing Agreement supersede any conflicting terms with other agreements.

Definitions

Personal Identifiable Information (PII). For purposes of this Agreement, "Personal Identifiable Information" (PII) is any and all data (regardless of format) that (1) identifies or that can be used to identify, contact, or locate a natural person, or (2) pertains in any way to an identified natural person. Personal Information includes (without limitation) a person's name, date of birth, address, telephone number, fax number, email address, social security number, driver's license number, passport number, or other government-issued identifiers, student or employee identification number, payment card information, financial, medical and educational records, and any records of transactions with Ivy Tech.

College Data is any data, records, or information owned by College that Contractor creates, obtains, accesses (via records, systems, or otherwise), receives (from College or on behalf of the College), or uses in the course of its performance of the contract which includes, but not be limited to social security numbers; credit card numbers; any data protected or made confidential or sensitive by the Family Educational Rights and Privacy Act, as set forth in 20 U.S.C. §1232g ("FERPA"), the Health Insurance Portability and Accountability Act of 1996 and the federal regulations adopted to implement that Act (45 CFR Parts 160 & 164 "the HIPAA Privacy Rule"), collectively referred to as HIPAA, the Gramm-Leach-Bliley Act, Public Law No: 106-102, or the Release of Social Security Number Indiana Code 4-1-10.

College Data also include all information, including personally identifiable information, derived from other College records.

Contractor. For the purposes of this Agreement, "Contractor" is a person or business which provides goods or services to Ivy Tech under terms specified in a contract agreement. This includes organizations referred to as "Affiliates" that share a common management interest and/or common use of facilities, equipment, and employees with Ivy Tech.

1. Constraints on Use of Data. College Data supplied by Ivy Tech to Contractor or collected by Contractor on behalf of Ivy Tech's students, prospective students, employees or alumni is the property of Ivy Tech and shall not be shared with third parties without the written permission of Ivy Tech. College Data shall not be sold or used, internally or externally, for any purpose not directly related to the scope of work defined in the contract agreement without the written permission of Ivy Tech.

In addition to complying with other provisions of the contract agreement requiring the protection of College Data, the Contractor shall:

a. implement and maintain appropriate security measures for College Data;

b. not use, and not allow the use of, College Data except as necessary for the performance of services for Ivy Tech;

c. limit access to College Data to Contractor's employees and subcontractors who have a specific need for such access in order to perform Contractor's services for Ivy Tech (each, a "Permitted Person"), provided that Contractor shall not transfer or give access to College Data to any subcontractor without Ivy Tech's prior written approval;

d. not at any time during or after the term of the Agreement disclose College Data to any person, other than Permitted Persons under clause (1.c) and Ivy Tech personnel in connection with performance of the services, except with Ivy Tech's prior written consent (or except as required by law, in which case Contractor shall, unless prohibited by law, notify Ivy Tech prior to such disclosure);

e. obtain written approval from Ivy Tech prior to implementation by Contractor of any remote (including Internet) access to College Data by anyone (including any Ivy Tech personnel or students) not a Permitted Person;

f. certify no felony convictions through background checks on Contractor's employees and subcontractors with access to College Data;

g. cause all College Data to be encrypted when transmitted by Contractor or Permitted Persons via the Internet or any other public network, or wirelessly;

h. segregate server computers hosting College Data from Ivy Tech on Contractor's internal data network, and require such server segregation by any subcontractor who receives College Data from Contractor, and ensure that any such servers are not directly accessible from the Internet, and ensures all College Data is stored in

the United States;

i. ensure that no PII is stored by Contractor or Permitted Persons in any portable device, for example, laptops, PDAs, smartphones or similar devices, or in any portable media, for example, DVDs, and ensure that appropriate protections are in place for other College Data stored in such devices or media;

j. use measures to protect the security of paper records containing College Data that are reasonable in the circumstances, provided that paper records containing PII shall be stored in securely locked facilities;

k. notify Ivy Tech within forty-eight (48) hours of learning of any event that creates a risk of unauthorized acquisition or use of College Data or of other harm to any person whose data is involved in the event;

l. either provide to Ivy Tech on request the results of any SSAE 16 SOC 1 (Type I or Type II) or SOC 2 audit of Contractor's services and system (but Contractor is not obliged hereby to conduct such an audit) or permit an agent of Ivy Tech to conduct such an audit, not more often than annually and at Ivy Tech's expense; and either provide to Ivy Tech on request the results of any vulnerability assessment of Contractor's system or permit Ivy Tech or an agent of Ivy Tech to conduct such tests from time to time, at Ivy Tech's expense;

m. comply expeditiously with such additional protections as Ivy Tech shall reasonably request from time to time; and

n. at any time at Ivy Tech's request and in any case upon termination of the services, return College Data to Ivy Tech, at no cost, and cause all copies of College Data in any formats or media, whether held by Contractor or by a Permitted Person or other person who received College Data from Contractor, to be deleted or destroyed,

provided that in every case College Data shall be disposed of in such a manner that thereafter it cannot practicably be read or reconstructed from any records of any kind held by Contractor or such Permitted Person or other person. Contractor shall certify in writing within ten business days that all copies of the College Data, in all forms, have been permanently erased or destroyed.

2. **Compliance with Applicable Laws and Regulations.** Contractor shall comply with all current and future federal, state, local laws, rules, regulations or ordinances, and industry specific requirements. Contractor shall be responsible for compliance by all its Permitted Persons with this Agreement. Contractor shall comply with all applicable federal laws and regulations protecting the privacy of individuals including the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act (HIPAA). Where applicable, Contractor shall also comply with all provisions of the Financial Services Modernization Act (the "Gramm-Leach-Bliley Act").

With respect to Education Records which Contractor or its Permitted Persons will receive or have access to in connection with Contractor's services, Contractor acknowledges that Ivy Tech has a statutory duty to maintain the privacy of such records and that as a Contractor to whom Ivy Tech has outsourced institutional services:

a. Contractor is performing an institutional service for which Ivy Tech would otherwise use Ivy Tech employees;
b. Contractor is under the direct control of Ivy Tech with respect to Data from Education Records; and
c. Contractor will comply with all applicable FERPA requirements governing the use and redisclosure of PII including without limitation the requirements of 34

CFR 99.33(a).

3. **Public Information.** Any provisions of the Agreement that exclude from confidential treatment information that is publicly available to Contractor shall be inapplicable to College Data.

4. **Notification of Security Breaches.** As a state institution, Ivy Tech is subject to the requirements of the State of Indiana's Release of Social Security Number Law (IC 4-1-10). Many states, as well as international countries, have notification laws which too must be followed. Contractor agrees that in the event of any breach or compromise of the security, confidentiality, or integrity of data where personal information of an Ivy Tech student, prospective student, employee, alumnus or other College-affiliated person or entity was, or is reasonably believed to have been, acquired and/or accessed by an unauthorized person, Contractor shall notify Ivy Tech of the breach of the security system containing such data within 48 hours, comply with all notification actions, and/or assist Ivy Tech with all notification actions required by applicable law, and bear all associated costs.

5. **Survival.** The provisions of this Agreement shall survive the termination of any other Agreement.

SIGNATURE BLOCKS ON NEXT PAGE

By the signatures of their duly authorized representatives below, intending to be legally bound, agree to all of the provisions of this Data Sharing Agreement.

Contractor

By: Lea Anne Crooks

Printed Name: Lea Anne Crooks

Title: Chancellor, Terre Haute

Date: November 16, 2019

Ivy Tech Community College

By: Matthew Etchison (Nov 6, 2019)

Printed Name: Matthew Etchison

Title: Chief Information Officer

By: Thomas Riebe (Nov 6, 2019)

Printed Name: Thomas Riebe

Title: Chief Technology Officer

Date: 11/06/2019

APPENDIX B: DATA SHARING AGREEMENT

This appendix documents the contracted service and the utilization of data.

Ivy Tech Project Owner: Lea Anne Crooks

Description of contracted service, data collection process, how data is used, where data is stored, etc.:

My dissertation is an analysis of student successful completion of courses when taught by a full-time faculty versus a part-time faculty person.

I also hope to cross reference to HR information to include years or semesters of service and degree type for the faculty (FT/PT).

Data elements shared with Contractor:

Course number

Campus codes

Instructor status (FT/PT)

Student grade for the course Instructor years of service

Instructor degree type (FT/PT)

Data Elements returned from Contractor:

None

APPENDIX C: DEFINITION OF COURSES IN THE STUDY

The following courses were included in the research:

ENGL 111 English Composition
3 Credits
Prerequisites: Demonstrated competency through appropriate assessment or earning a grade of "C" or better in: ENGL 093 and ENGL 083 or ENGL 095 or FOUN 071.
Corequisites: Demonstrated competency through appropriate assessment or earning a grade of "C" or better in: ENGL 063 or ENGL 073 or ENGL 075.
English Composition is designed to develop students' abilities to think, organize, and express their ideas clearly and effectively in writing. This course incorporates reading, research, and critical thinking. Emphasis is placed on the various forms of expository writing such as process, description, narration, comparison, analysis, persuasion, and argumentation. A research paper is required. Numerous in-class writing activities are required in addition to extended essays written outside of class.

WELD 100 Welding Fundamentals
3 Credits
Prerequisites/Corequisites: Demonstrated competency through appropriate assessment or earning a grade of "C" or better in FOUN 071.
This course provides a basic study and application of commonly utilized welding processes as well as additional topics such as welding blue print reading, OSHA 10 hour and welding safety, weld joint design, welding terminology, and welding quality control. Students will prepare for their welding education, as well as their welding career, through exposure to the welding lab environment and classroom. Students will also train with the latest in Virtual Welding Simulation. In addition, this course will prepare students to take nationally recognized certification exam(s).

INDT 113 Basic Electricity
3 Credits Prerequisites/Corequisites: None.
The study of electrical laws and principles pertaining to DC and AC circuits is the focus of the course. Includes current, voltage, resistance, power, inductance, capacitance, and transformers. Stresses use of standard electrical tests, electrical equipment, and troubleshooting procedures. Safety procedures and practices are emphasized.

APPENDIX D: INDIANA STATE UNIVERSITY IRB EXEMPT LETTER

Institutional Review Board

Terre Haute, Indiana 47809 812-237-3088

Fax 812-237-3092

DATE:	April 24, 2020
TO:	Lea Anne Crooks, BS, MS
FROM:	Indiana State University Institutional Review Board
STUDY TITLE:	[1577093-1] Community College Student Success: The Effect of Faculty Type on Course Completion
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	April 24, 2020
REVIEW CATEGORY:	Exemption category # 4

Thank you for your submission of New Project materials for this research study. The Indiana State University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations (45 CFR 46). You do not need to submit continuation requests or a completion report. Should you need to make modifications to your protocol or informed consent forms that do not fall within the exempt categories, you will have to reapply to the IRB for review of your modified study.

Internet Research: If you are using an internet platform to collect data on human subjects, although your study is exempt from IRB review, ISU has specific policies about internet research that you should follow to the best of your ability and capability. Please review Section L. on Internet Research in the IRB Policy Manual.

Informed Consent: All ISU faculty, staff, and students conducting human subjects research within the "exempt" category are still ethically bound to follow the basic ethical principles of the Belmont Report:

1) respect for persons; 2) beneficence; and 3) justice. These three principles are best reflected in the practice of obtaining informed consent.

If you have any questions, please contact Anne Foster within IRBNet by clicking on the study title on the "My Projects" screen and the "Send Project Mail" button on the left side of the "New Project Message" screen. I wish you well in completing your study.