Influence of Student and Instructor Characteristics in Online Student Success

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The purpose of this non-experimental, quantitative case study was to compare the academic success of community college students over three academic years (2016-17 through 2018-19) before the onset of Coronavirus Disease (COVID-19) based on final grades and the influence of student factors, class size, and faculty characteristics using archival data from selected online and on-ground classes at a Middle Tennessee community college. Female students, part-time students, and non-traditional students were more likely to be successful. Successful students were generally more likely to be taught by full-time faculty and tenured faculty.

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Even though overall higher education enrollment is decreasing, online course demand has continued to increase in the past few years. According to Seaman and Seaman (2017), the consistent higher education enrollment increases that had been occurring for many years have stalled. From fall 2012 through fall 2015, total higher education enrollments decreased (Seaman & Seaman). Conversely, a higher percentage of students have registered for online courses during this same timeframe (Seaman & Seaman, 2017). Because of the increased attractiveness of online courses to students, institutions may need to place additional emphasis on the multiple factors that lead to successful online course completion. With the decline in enrollment, completion becomes even more vital to continue the pipeline of providing a credentialed workforce to employers.

Statement of the Problem

For 14 consecutive years, online course enrollment has been accelerating (Seaman, & Seaman, 2018). Online course demand continues to grow, especially in community colleges; by 2017, almost 31% of community college students register for a minimum of one online course as compared to 29% at public four-year higher education institutions (Lederman, 2018). Most students registering for at least one online course were also registered for at least one on-ground course (Seaman & Seaman, 2018). With many students making the choice to pursue courses online, administrators should address appropriate instructional quality and holistic online student support systems to meet retention goals.

Throughout the last decade, researchers have performed several studies analyzing factors contributing to online student success. Most of these focus on characteristics of online students and their subsequent course retention and attrition. Although these are important research questions to answer, administrators still face questions of how to reduce the significant gap between online and traditional student success while meeting the increased demand to offer more online courses (Allen & Seaman, 2015). This gap varies among courses. Student traits, demographics, and profiles are frequently studied to identify student characteristics more likely to be unsuccessful, yet faculty characteristics should also be assessed to determine the significance of the role faculty play in both the success and the lack of success of the online students. Faculty, as a variable, has been notably concealed or even absent in many previous studies (Hutto, 2013; Martin, 2017; Tinto, 2006). Logically, student involvement and engagement at the institution are largely attributed to student affairs personnel. Yet, most community college students hold jobs and generally do not live on campus; thus, faculty teaching in the classroom may be the only opportunity for student engagement and involvement (Tinto, 1999). Determining the factors responsible for student success and attrition rates will assist administrators when making decisions regarding competitive academic demands (Kane et al., 2015).

The purpose of this non-experimental quantitative case study was to compare student academic success over three academic years before the onset of Coronavirus Disease 2019 (COVID-19) based on final grades and the influence from student and faculty characteristics using archival data from selected online classes at a Middle Tennessee community college. Student factors reviewed include gender, full-time or part-time status, and age (traditional or non-traditional status). Instructor characteristics reviewed included full-time or part-time (adjunct) teaching status and tenure or non-tenure status of faculty.

The predictor variables were either a student or faculty characteristic. The criterion variable was student academic success; student academic success was generally defined as a final course grade of A, B, or C. A grade of D was unsuccessful in this study. Where individual letter grades

were reviewed, F, FA, and W grades were combined. At the participating institution, the difference in an F and an FA grade is attendance; students who fail due to not attending after two-thirds of the course is completed are automatically assigned an FA grade instead of an F. Either grade signifies the student failed the course; the difference lies in the reason for the failure. The selected classes were English, history, and the natural sciences; these disciplines were chosen because they are required by most degree-seeking students at the college, have been developed for online delivery by a full-time faculty member, and are then cloned to others teaching the class, and have the same student learning outcomes (SLOs) as the corresponding on-ground classes.

The following research questions guided this case study:

- For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between female and male students at the participating community college?
- For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between full-time students (taking 12 or more credit hours) and part-time students (taking fewer than 12 credit hours) at the participating community college?
- For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between traditional aged students (age under 24) and non-traditional aged students (age 24 and over) at the participating community college?
- For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between the courses taught by tenured or non-tenured full-time instructors at the participating community college?
- For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between the courses taught by full-time and part-time (adjunct) instructors at the participating community college?

Theoretical Frameworks

Two theoretical frameworks helped form the research questions for this study. Building on several earlier retention theories, Bean and Metzner (1985) asserted that the sense of belonging was not as essential to non-traditional students. Bean and Metzner stated that environmental variables, academic variables, background variables, and psychological variables greatly impacted student attrition rates. Background variables such as gender, enrollment status, and age were pinpointed in their theory, among others. Tinto (2006) emphasized that faculty are the key players in student retention efforts. Tinto suggested most faculty believe retention is a product of student affairs efforts. Tinto purported that student retention is an outcome of robust student learning.

Literature Review

Prior to online instruction, a variety of distance education courses were offered. These included correspondence courses, radio courses, and television courses. The first attempt to provide a correspondence course was in 1728, when shorthand lessons were offered in England (Kentnor, 2015). Correspondence courses were also widely used in the 1920s; with these courses, the higher education student's only obligation was to have a mailbox (Caruth & Caruth, 2013). Class assignments were sent to students, and students subsequently returned completed assignments. Radio courses also started in the 1920s with lectures broadcast to students (Caruth & Caruth, 2013;

Casey, 2008; Kentnor, 2015). Television courses were offered in the 1930s, but they did not ever become a significant volume distance education medium (Kentnor, 2015). Online instruction is the current distance education medium that continues to experience growth.

Online instruction, a form of distance learning, could still be considered in its early stages in higher education institutions. Origins of online instruction were first available in the proprietary colleges (Thelin, 2011). In 1989, the University of Phoenix offered the first online higher education courses (Kentnor, 2015). Public higher education institutions started online programs in the mid-1990s (Casey, 2008; Kentnor, 2015). Online instruction's primary purpose in higher education is to provide greater student access. Access barriers that are dissolved through online instruction primarily include transportation, non-traditional work schedules that do not fit the traditional on-ground class schedules, and lack of childcare which precludes students' ability to attend on-ground classes.

Student Gender as a Predictor of Student Success

Gender researchers netted a wide variety of results. Some on-ground researchers had different results than the online researchers, and the same gender did not show significantly different for all researchers. For the on-ground delivery method, Huh et al. (2009) revealed that males tended to do better than females. In contrast, Gregory (2016) documented significant differences in final grades based on gender for on-ground classes; females proved statistically more likely than males to earn A or B grades in this research. Wladis et al. (2015) insists that females outperformed males on-ground in a community college STEM study.

While several researchers revealed gender as an indicator of online student success, this was not the case in all studies. Huh et al. (2009) indicated gender did not account for a significant difference in online and on-ground learners. Yukselturk and Bulut (2007) observed that gender did not have an effect in online class success in their single-year study of 80 student volunteers who were enrolled in an online computer science course. Krajewski (2015) reiterated that gender showed no significance in online class success in the study of a single biology course from a community college. Gregory's (2016) research at a single community college did not show any gender significance in online classes. While Wladis et al. (2015) found that females performed better on-ground than males, this difference was not present when courses were taken online.

Despite some researchers who did not find a significant difference in gender, other researchers did find females were significantly more likely to achieve online student success. Aragon and Johnson's (2008) research is an example of one such study which involved approximately 300 students from a single community college. Findings indicated significance in gender with females completing at a higher percentage than males; the results showed a low inverse correlation (Aragon & Johnson, 2008). James et al. (2016) repeated Aragon and Johnson's findings of slight gender significance in their study in which women were retained marginally more than men. Also interesting to note, James et al.'s study concluded that women registered for online classes at a higher percentage rate than men. Vella et al.'s (2016) research findings attest to gender significance in online class final grades. In this study, females showed both better final course grades and an increased likelihood of finishing the course. Vella et al.'s study was not only researching fully online classes, but also used data from blended classes. Cunningham (2015) discovered that female students generally exhibited greater course success than males in online courses; females showed a predictor of making a B rather than an F final grade. While this was a small case study using only a single class, the results substantiate several other findings

(Cunningham, 2015). Faidley (2018) also documented a gender difference in the public university study of two accounting courses. In this research, online outcomes resulted in a significant difference, with females ranking higher in this study with over 500 participating students (Faidley, 2018).

Student Full-Time or Part-Time Status as a Predictor of Student Success

Interaction of student course load with GPA is another critical area that needs further research (Shea & Bidjerano, 2019). Research, using data from 30 community colleges in New York, did not yield the typical expectations. Incorporating a sample of over 45,000 students, Shea and Bidjerano's (2019) data showed that part-time students with lower GPAs had an increased likelihood of completing degree requirements over corresponding full-time students with lower GPAs. An important fact to note is that this study examined the student's total online course load (Shea & Bidjerano, 2019). Vella et al. (2016) corroborated these findings in their one-semester study which included hybrid courses. Part-time students in this university study of over 2,000 students proved to do better than their full-time student counterparts (Vella et al., 2016). In Gregory's (2016) study, full-time students showed significantly more C and F grades.

Colorado and Eberle (2010) contradicted the previous findings in their study of university online graduate students. Researchers concluded full-time or part-time status did not influence academic performance (Colorado & Eberle, 2010). Wojciechowski and Palmer (2005) also affirmed this conclusion in their research of community college business students. Reviewing almost 200 students over three years, the researchers detected no significant difference in full-time or part-time status (Wojciechowski & Palmer, 2005). Some researchers had different results than any of the aforementioned conclusions. Krajewski's (2015) study of approximately 700 students' data from a single community college biology course discovered that full-time students were much more likely to complete the course than part-time students. In fact, the data indicated that part-time students were 2.1 times less likely to complete (Krajewski, 2015).

Student Age (Traditional or Non-Traditional) Status as a Predictor of Student Success

Most research studies reviewed indicated that a student's age did project a clear indication of online course success. The more advanced aged students typically had higher online course outcomes. Yukselturk and Bulut (2007) noted that age did not factor into student success in their study of online computer programming students from a university in Turkey. Some interesting facts about this study were that it involved 80 student volunteers from a single semester (Yukselturk & Bulut, 2007). More longitudinal data with a larger sample size may be needed to support this thesis. This is in contrast to several other studies notably Cunningham (2015), Faidley (2018), Gregory (2016), Vella et al. (2016), James et al. (2016), and Wojciechowski and Palmer (2005).

Disputing these studies, online business students in Wojciechowski and Palmer's (2005) research reflected that students generally received higher grades by age. Put another way, the older students, typically called non-traditional, generally received the higher grades. Approximately 200 students at a community college participated in this study (Wojciechowski & Palmer, 2005). Although this research only included a small sample from a single course at one institution, findings exhibited corresponded to several other studies. Faidley (2018) concluded significant differences in traditional and non-traditional students. In fact, non-traditional students proved to

have higher rates of student success (Faidley, 2018). Using over 500 students, Faidley's research was conducted over a three-year period but only used data from two introductory university accounting courses.

Vella et al. (2016) maintained that age did affect grades and success in the online course. In this research, older students (non-traditional) displayed better grades than the younger students. This one-semester study included over 2,000 university students taking both fully online and hybrid courses (Vella et al., 2016). Gregory's (2016) research identified non-traditional students as being less likely to fail a class than their traditional student counterparts. Subsequently, non-traditional students generally made more A grades (Gregory, 2016). Parallel to Gregory's study, Cunningham (2015) contended that online non-traditional students were slightly more prone to receive a course grade of A or B than traditional students. Research initiated from one community college using a single course with over 1,100 students participating in the study (Cunningham, 2015).

Wladis et al. (2015) observed similar findings in a study of 3,600 community college students from science, technology, engineering, and math (STEM) majors. Grades of C- and higher labeled the students as successfully completing the course. Corresponding courses, instructors, and semesters were compared to determine online and on-ground outcomes. According to Wladis et al.'s research, non-traditional aged students did better online than on-ground. Comparably, James et al. (2016) declared non-traditional aged students were more likely to be retained than traditional students in their five-state community college study with over 9,000 participants. Krajewski (2015) concurred with the aforementioned findings. Processing six semesters of community college data from a single biology course, Krajewski found significance for age. This researcher, with almost 700 participants, postulated every year of age produces a 1.1 times larger chance of online course completion (Krajewski, 2015).

Faculty Full-Time or Part-Time Status as a Predictor of Student Success

Magda et al. (2015) reported fall 2013 data from the U.S. Department of Education showing adjunct faculty taught approximately 31% of online courses at both two-year and four-year institutions. Subsequently in 2015, 56% of institutions disclosed growth in the percentages of adjuncts teaching online with 25% reporting a growth rate of at least 5%. Adjuncts are teaching in many different disciplines; however, business boasts the largest overall percentage of online adjunct instructors. Combined with the increase in online instruction demand, institutions must find and use best practices for aiding adjunct faculty in successful online instruction (Magda et al., 2015).

In reviewing adjunct faculty online instruction regarding attrition rates, several researchers compared adjunct and full-time faculty course outcomes. Fewer studies specifically revealed the difference in adjunct and full-time faculty for only online classes. As a result, some of the research mentioned below are not specifically studies of adjuncts teaching online courses; some are the results of studies in which researchers compared on-ground instruction outcomes between adjuncts and full-time instructors. These studies from a different delivery method are included to demonstrate the impact adjunct teaching in general has on student attrition rates. While the delivery method does account for some differences in attrition rates, the same is true for the student attrition rates when the course is taught using a different delivery method by full-time faculty.

Several researchers have provided historical data on the difference in student outcomes based on the course being taught by an adjunct faculty or a full-time faculty member. Hutto (2017)

addressed the connection between course retention and faculty status for general education classes at a Florida community college during a single semester. According to this researcher, one of the reasons for increased student retention rates has been linked to adjunct faculty (Hutto, 2017). Hutto's short-term study results confirmed the researcher's hypothesis of a correlation between full-time and adjunct faculty on student attrition; this study revealed that adjunct faculty showed a slight increase in course retention over full-time faculty. Hutto's study compared on-ground course results.

Some other researchers did not find significant differences in student success. Flaherty (2013) compared adjunct and full-time instruction's influence on student success. Findings chronicle no significant differences in adjunct and full-time instruction at community colleges. Institutional data were derived from the Integrated Postsecondary Education Data System (IPEDS), making this research a national-level study as opposed to others which are generally only done at a local or regional level. Xu concedes that a weakness in this study is that students were not matched to full-time or part-time instructors to consider the percentage of time spent with each group (as cited in Flaherty). This study was not limited to any particular delivery method (Flaherty, 2013). Landrum (2009) addressed the increased use of adjunct faculty by studying full-time and part-time university faculty to determine if significant variances in demographics, student evaluations, and grade distributions were found. According to the research, significant variances did not exist. An important note on this study is that it reviewed overall instruction; this study was not confined to reviewing exclusively online classes (Landrum, 2009). Salley and Shaw's (2015) findings expressed interchangeable results. Data from a Midwest community college from one semester advanced the idea that full-time and adjunct faculty do not have significant differences in final online student course grades or attrition. These data were taken from 189 full-time and adjunct faculty members (Salley & Shaw, 2015).

Other researchers also revealed full-time faculty yielding greater student success than adjuncts. Mueller et al. (2013) studied adjunct and full-time faculty online student success rates. Results showed higher course grades from the online course sections taught by the full-time faculty members. It is important to note this was not a longitudinal study at multiple institutions in a variety of courses; this study only used a single course with all sections being taught online from a single institution. Mueller et al. suggested the need to look further into the impact of adjunct instruction on students. Ran and Xu (2019) verified the findings of Mueller et al. (2013) that students taking introductory courses in their chosen discipline from non-tenure track faculty were both unlikely to enroll in a subsequent course in that discipline and reduced the subsequent grade earned. This was in spite that the initial introductory student course grade was generally higher with a non-tenure track faculty member. Ran and Xu's study was not confined to online only classes; the research did span five years, include both two- and four-year institutions, and assessed over 155,000 students.

Whether or not adjuncts teach online, they must feel engaged and as if they are an integral part of the institution. This connection helps improve the fulfilment of their job duties. Most administrators seem to ensure adjuncts have the information needed to do their jobs, but they do not always ensure the appropriate institutional networks welcome and foster adjuncts (Dolan, 2011). Dolan's qualitative research examined online adjuncts' views on the communication and collaboration received from the institution, and the results of the study suggested that colleges providing the right communication and support systems can positively motivate adjuncts and result in subsequent increased student retention and completion in online classes. This research further supported Green et al.'s (2009) study that reported a continuous sense of community was vital to

all online instructors. Adjunct, non-tenured, tenure track, and tenured faculty had some differing reasons for participating in online teaching according to one study (Green et al., 2009). The researchers showed that most motivating factors to teach online were similar among the various faculty ranks. Some of the reasons they choose to teach online result from their core satisfaction of teaching, challenge, job progression, and flexible work times (Green et al.).

Faculty Non-Tenure or Tenure Status as a Predicator of Student Success

In addition to the faculty member's adjunct (part-time) or full-time status, faculty non-tenure and tenure status and years of teaching experience should be considered. Faculty move through faculty ranks as they become more seasoned; examining the progression along with how the number of years of experience affects performance can help to determine what faculty supports are needed and when are the best times to provide these supports throughout their careers. Continuous professional development is always needed for all professionals; the unique delivery method of online courses demands special attention for professional development needs.

According to Herman (2012), faculty ranks did show differences in the total number of hours of online teaching. Non-tenured faculty comprised 36.1%; faculty not on tenure track comprised 35.7%; and tenured faculty comprised 32.6%. Herman further reported that approximately one third of faculty are confident that online courses match the quality of traditional on-ground courses. Herman (2012) suggested all faculty need adequate professional development for achievement of continuous quality improvement in online courses.

McDaniel (2003) researched the effects of non-tenured and tenured faculty on course quality in the online environment. Results indicated that no significant difference existed between course quality based on the course being taught by a non-tenured or tenured faculty member. McDaniel conducted this study at a university with over 80 online courses from 14 different departments; furthermore, surveys from the faculty generated these results.

Ehrenberg and Zhang (2005) maintained their study was the first to determine the influence of non-tenure track faculty on subsequent student success. From College Board and other data, the researchers discovered that non-tenure track faculty could potentially reduce students' future likelihood of success. Class data were from all courses offered at the institutions studied over a period of fifteen years (Ehrenberg & Zhang, 2005).

Figlio et al. (2013) extrapolated data from Northwestern University regarding whether non-tenure track or tenure track faculty stimulated students to register for additional classes in a particular discipline and whether students performed well in the ensuing courses. In both instances, non-tenure track faculty showed considerably higher results than tenure track faculty. Data were from freshmen at Northwestern University over a seven-year period from all types of classes; over 15,500 students were part of this study. Not all the courses in this study were online courses; the study only referred to the courses in total (Figlio et al., 2013).

Methods

Instrumentation

Secondary data analyses were used for this study. Because archival data were used for this study, neither the students nor the faculty who were included in this research were aware of this study while the courses were being taught. Because the courses had already concluded prior to this study,

no opportunity existed for any potential behavior modification by either students or instructors that would manipulate the study results. No surveys or interviews were used. Data presented to me had been redacted; identifying information regarding participants was not provided. Data files were maintained on a password-protected computer to ensure proper confidentiality and security of the data received.

Population

The population for this study included all online and on-ground English, history, and natural science faculty and students enrolled at the census date from three consecutive academic years (fall 2016-summer 2019) at a Middle Tennessee community college. Students who dropped the course before the census date were deleted from the roster. Because the institution offers Associate of Arts, Associate of Science, Associate of Fine Arts, Associate of Science in Teaching, and Associate of Applied Science degrees along with certificates, students in this study were likely pursuing a wide variety of degrees; few students would likely be seeking a certificate because most certificates do not require these particular courses. These courses were selected because of their high number of student enrollments each semester and because they were required in most degree programs offered at the institution.

Dataset

Institutional data for this study consisted of 44,568 student records comprising 34,006 on-ground classes and 10,562 online classes. For the percentages provided, audit and incomplete or missing data were excluded. The mean grade point average (GPA) of all students with prior GPAs was 2.7 in this study. Unique student registrations totaled 13,400 students and unique instructors totaled 198. Further descriptive data from the institution and data used in this study for the academic years 2016-2018 are shown in Table 1.

Table 1
Demographic Online Course Data and Fall 2017 Institutional Data

	Online Courses – This Study	Fall 2017 Institutional Data
Female	72%	61%
Male	28%	39%
Full-Time	52%	50%
Part-Time	48%	50%
Traditional	68%	79%
Non-Traditional	32%	21%

Results

For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between female and male students at the participating community college?

Pass rates were found to have a significant difference based on the two gender levels,

Pearson $\chi^2(1, N = 10{,}562) = 7.788$, $p = .005$, Cramer's V = .027. Therefore, the null hypothesis is rejected. Females were found more likely in general to be successful in online courses than males. Table 2 presents the online student success percentages by student gender.

Table 2
Online Student Success Percentages by Student Gender

	Male	Female
Pass	75%	78%
Fail	25%	22%

For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between full-time students (taking 12 or more credit hours) and part-time students (taking fewer than 12 credit hours) at the participating community college?

Enrollment status of college students was found to have a significant difference based on the two levels, Pearson $\chi^2(3, N = 10{,}562) = 218.589$, $p < .001$, Cramer's V = .144. Therefore, the null hypothesis is rejected. Part-time students were generally more likely to be successful in online classes. Table 3 presents online student success percentages by student enrollment status.

Table 3
Online Student Success Percentages by Student Enrollment Status

	Full-Time	Part-Time
Pass	73%	82%
Fail	27%	18%

For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between traditional aged students (age under 24) and non-traditional aged students (age 24 and over) at the participating community college?

Age was found to have a significant difference based on the two age levels, Pearson $\chi^2(2, N = 10{,}562) = 181.331$, $p < .001$, Cramer's V = .131. Therefore, the null hypothesis is rejected. Most researchers reviewed had the same result. Non-traditional students were more likely in general to be successful than traditional students. Table 4 presents the online student success percentages by student age.

Table 4
Online Student Success Percentages by Student Age

	Non-Traditional	Traditional
Pass	83%	75%
Fail	17%	25%

For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between the courses taught by tenured or non-tenured full-time instructors at the participating community college?

Student success was found to have a significant difference based on the two faculty

employment status levels, Pearson $\chi^2(1, N = 10{,}562) = 172.570$, $p < .001$, Cramer's V = .128. Therefore, the null hypothesis is rejected. In my study, students generally had more success in online courses when taught by tenured faculty. Table 5 presents online student success percentages by faculty tenure status.

Table 5

Online Student Success Percentages by Faculty Tenure Status

	Tenured	Non-Tenured
Pass	82%	71%
Fail	18%	29%

For online students, is there a significant difference in the proportion of students successfully completing the course (grade of A, B, or C) between the courses taught by full-time and part-time (adjunct) instructors at the participating community college?

Online college student success was found to have a significant difference based on the two faculty employment levels, Pearson $\chi^2(1, N = 10{,}562) = 19.737$, $p < .001$, Cramer's V = .043. Therefore, the null hypothesis is rejected. Full-time instructors generally showed higher results than part-time instructors. Table 6 presents online student success percentages by faculty employment status.

Table 6

Online Student Success Percentages by Faculty Employment Status

	Full-Time	Part-Time
Pass	78%	73%
Fail	22%	27%

Discussion

Student success predictors were age, full-time/part-time status, and age. Females were more likely than males to be successful online in my study. This result aligned with the studies of Aragon and Johnson (2008), James et al. (2016), Vella et al. (2016), Cunningham (2015), and Faidley (2018). While all the literature did not agree, females did have more consensus than males. My study adds to this growing body of consensus. Part-time students showed a higher likelihood of success as indicated by Shea and Bidjerano (2019), Vella et al. (2016), and Gregory's (2016) studies. From the literature review, other researchers such as Colorado and Eberle (2010), Wojciechowski and Palmer (2005), and Krajewski (2015) had alternate results. More research is needed in this area. Non-traditional students were generally more successful than non-traditional students. With the exception of Yukselturk and Bulut (2007), researchers reviewed in the literature agree. More consensus is found in this area; however, one study reviewed did produce alternate results, leaving this area open for further research.

Faculty findings differed from previous research. My finding that tenured faculty generally produced higher student success contradicted most other research such as McDaniel (2003) and Figlio (2015). Ehrenberg and Zhang (2005) published the only other study reviewed in the

literature that produced similar results. With these findings, more research should be performed in this area. Full-time instructors generally had the higher success rates. Ran and Xu (2019) and Mueller et al.'s (2013) agreed. Several other researchers such as Hutto (2017), Flaherty (2013), Landrum (2009), and Salley and Shaw (2015) contradicted these results. Faculty online research studies in the literature are few; therefore, this is a result that needs further study.

Recommendations for Practice

Results of my study led to several recommendations for practice. These recommendations would be the most valuable to other community colleges of similar size and student characteristics. First, study both overall and disaggregated data to ensure all delivery methods are producing acceptable levels of student success while continuously making improvements. Second, examine broad faculty outcomes to determine professional development needs. For example, success gaps in faculty employment or tenure status should not be overlooked. Third, focus on building relationships with adjuncts and faculty with less experience through mentorship programs. Dolan (2011) and Green et al. (2009) indicated that developing a cohesive network among faculty and the institution is important to faculty, and subsequently student, success. Fourth, hold focus groups of students and faculty periodically to determine additional needs. Finally, establish timelines for faculty feedback to students and amount of engagement required for the course.

Recommendations for Further Research

After completing my study, I recommend the following mixed methods, qualitative, and quantitative areas for further research. First, survey students to find out the reasons they enroll in online courses, and evaluate the relationship between the reason for enrollment and student success. Second, evaluate the performance of students in subsequent courses when the pre-requisite courses were taken online. Third, study how institutions can best support part-time and non-tenured faculty in the process of their online teaching professional development. Fourth, research the student success measures that need to be offered to students taking online courses. Fifth, establish ways to apply diversity, equity, and inclusion principles to online classes. Sixth, determine the reasons students drop online courses and what measures can be taken to further support them. Seventh, assess the relationship of the amount of engagement in online classes between the instructor and student to the final course grade. Finally, conduct a qualitative study focusing on male online students to learn and examine possible reasons for their decreased levels of student success.

Conclusions

Students deserve the best support systems an institution can provide. To meet the goals of Complete College America and other initiatives for raising the level of postsecondary credential achievement, institutions must champion both students and faculty in all course delivery methods. Continuous assessment improvements and review of data are vital because results may change over time. Ongoing research will provide additional understanding to aid in the quest for online student success.

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