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High-Impact Practices and Community College Completion Rates

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by

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ABSTRACT

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The purpose of this study was to examine the associations between the 3-year completion rates of first-time, full-time, transfer degree-seeking community college students, participation in activities that may encourage persistence and retention, and the demographic variables of ethnicity, Pell grant recipiency, gender, and ACT or Compass subscores in English/writing, reading, and math/algebra. The researcher used a snapshot of students' degree completion three academic years after initial enrollment to determine 3-year completion. The study focused on first-time, full-time students who were pursuing associate of arts or associate of science degrees at a nine-campus community college in eastern Tennessee. Students who were pursuing applied science degrees, workforce certificates, or other credentials were excluded from the population. Students first enrolled in Fall 2010, 2011, and 2012, and their 3-year completion windows ended in Spring 2013, 2014, and 2015, respectively. The population consisted of 398 degree completers and 964 non-completers. The dependent variable in this study was 3-year completion. The independent variables in this study were participation in service learning courses, participation in courses that involved study abroad, and participation in student athletics, as well as ethnicity, Pell grant recipiency, gender, and ACT or Compass subscores in English/writing, reading, and math/algebra. Two-way contingency tables and χ^2 were used to examine the associations between each independent variable and the dependent variable. Multiple logistic regression models were used to examine the associations between all variables.

The quantitative findings indicated students who participated in service learning, study abroad, and student athletics were more likely to complete their degrees within three years. Additionally, findings revealed Pell grant recipiency, gender, and ACT or Compass subscores in English/writing, reading, and math/algebra predicted students' 3-year degree completion. Ethnicity was found to have no significant effect on the 3-year completion rate.

DEDICATION

This study is dedicated to my family. First, my wife, Katie, encouraged me through graduate school and this dissertation, even when my nights and weekends were spent doing homework, writing papers, and crafting a dissertation in my campus office, a distant room in our house, a university library, or some other quiet space. Her constant support was invaluable. Next, our children, Stella, Finley, and Carter, have grown up understanding how important education is to me, and I hope they truly enjoy their own lifelong learning journeys. They carry my love with them always. Finally, our canine companion, Trixie Lulu, kept me company when I wrote late into the night. She deserves lots of tummy rubs.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION

Community colleges are traditionally considered 2-year institutions. A community college student must complete a minimum of 60 credit hours comprising general education courses, major-specific courses, and electives to graduate with an associate degree (American Association of Community Colleges [AACC], 2015b). Therefore, a full-time student pursuing an associate degree on a 2-year track needs to successfully complete 15 qualified credit hours in each fall and spring semester for two academic years to graduate. However, more than half of entering community college students test into remedial courses, which are designed to help students relearn specific course content in English, reading, and mathematics but do not count as college-level courses toward a student's 60-hour goal (Attewell, Lavin, Domina, & Levey, 2006). Community college students tend to take more than four semesters to complete their degrees, due in part to remediation requirements and the numbers of students who attend part-time (Attewell et al., 2006). In fact, the benchmark completion window for degree-seeking community college students is three years (National Center for Education Statistics, n.d.). The three-year figure is based on student data collected from the Integrated Postsecondary Education Data System (IPEDS) including "the number completing their program within 150 percent of normal time to completion" (National Center for Education Statistics, n.d.).

Community college students face a variety of obstacles that may prevent them from completing their degrees. Jobs, families, and other responsibilities may siphon attention away from educational goals (Wohlgemuth et al., 2006). However, the primary barrier may not be external influences on students' lives but instead a lack of worthwhile impact from their coursework (Wohlgemuth et al., 2006). Kuh (2008) identified a set of high-impact educational

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practices (HIPs) to help students find meaning and real-world application in their studies. Examples of HIPs include service learning, first-year experiences, cohorts, undergraduate research opportunities, experiential study abroad, and capstone projects (Kuh, 2008). Educationally purposeful experiences such as HIPs increase student engagement, promote critical thinking skills, expose students to diverse groups of people, provide students with regular feedback, and offer hands-on learning opportunities (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2007). In fact, judicious application of HIPs that may appear basic, such as a first-year study skills course designed to reinforce good academic habits for students, can yield positive outcomes (Windham, Rehfuss, Williams, Pugh, & Tincher-Ladner, 2014). Students who are involved in HIPs and other educationally relevant activities tend to perform better academically and have higher persistence rates from the first year to the second year of college (Kuh et al., 2007). Thus, effective implementation of HIPs that encourage student engagement may lead to enhanced student retention, persistence, and completion rates (Kuh, 2008). Certainly, student engagement is not a new concept; more than four decades ago, Tinto (1975) identified social integration and mutual educational pursuit among students and between students and faculty as crucial to student retention. Accordingly, students are more likely to continue their academic progress toward completion when they believe they are holistically involved in their college experiences and believe their educational pursuits are worthwhile (Tinto, 1975; Wohlgemuth et al., 2006). Activities that go beyond textbooks and lectures and instead actively engage students in their own learning and personal growth may be highly effective in promoting student success and increasing the likelihood of degree attainment. In essence, experiences that actively engage students in college life and give them purposeful roles in their own educations tend to generate

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enhanced retention and completion rates (Kuh, 2008; Kuh et al., 2007; Price & Tovar, 2014; Windham et al., 2014).

The Tennessee Board of Regents (TBR), the higher education system that governs the state's 13 community colleges and 27 colleges of applied technology, has emphasized the importance of incorporating HIPs into curricula (TBR, n.d.-d). TBR selected service learning, study abroad, and work-based learning as three HIPs for the first phase of implementation because these three initiatives were already being implemented at TBR member institutions across the state (TBR, n.d.-d). Incorporation of HIPs and other measures to increase persistence, retention, and completion may be spurred by a financial incentive, as well. The Complete College Tennessee Act of 2010 (2010) shifted the funding emphasis for the state's community colleges from metrics of incoming headcounts to an analysis of outcomes. No longer are state appropriations based solely on how many students attended an institution; instead, state funding now more closely follows the numbers of students who complete coursework, graduate, or transfer to senior institutions (Complete College Tennessee Act, 2010). Essentially, state legislation now incentivizes higher completion rates for community colleges. Therefore, community college administrators and faculty work for the financial success of their own institutions when they develop and implement HIPs and other related ways to increase student success. TBR tasked its member institutions with intentionally incorporating service learning, study abroad, and work-based learning into curricula because Kuh (2008) connected these HIPs, among several others, to improved student retention and outcomes.

Service learning may be considered as a form of volunteerism that engages participants with community partners. TBR (n.d.-a) defines service learning as

a teaching and learning strategy that integrates meaningful community service with

instruction and reflection to enrich the learning experience, teach civic responsibility, and

strengthen communities. Curriculum includes structured field-based "experiential

learning" alongside community partners, which reinforces course learning outcomes.

Within the TBR System, credit-bearing service-learning designated courses are

incorporated into general education or college core requirements for a degree program.

(para. 1)

By TBR's definition, students who participate in service learning courses or in courses that

incorporate service-learning elements take on a commitment to volunteerism and learning by

experience. At the community college level in Tennessee, the service-learning HIP is

implemented chiefly in a standalone service-learning course that is considered a general elective;

however, many courses incorporate service-learning elements that may still provide benefits to

students. More broadly, students learn to apply classroom knowledge in the real world and

reflect on their real-world experience in the classroom, a circular process (Kuh, 2008).

Experience in service learning may influence academic success and completion (Prentice &

Robinson, 2010; Rochford, 2013). Rochford (2013) noted that students who participated in

service learning earned higher grades overall, were more likely to register for more courses the

following semester, and completed more academic credits than their peers who were not

involved. These results suggest that engagement in service learning transforms students

academically and psychologically because of deep involvement in community service activities

and the development of intense, personal relationships.

Study abroad involves more than just students electing to spend one or more semesters at

colleges and universities outside of their home countries. In fact, students can experience study

abroad in short-term or long-term timeframes, and study abroad often incorporates application of classroom teaching as well as personal reflection. TBR (n.d.-b) describes study abroad as

a credit-bearing experience incorporated into general education or college core requirements for a certificate/degree program. Curriculum includes field-based "experiential learning" in locations outside the U.S. with an emphasis on inter-cultural understanding and communication. Students apply what they are learning in a real-world setting and reflect on their experiences abroad as part of the course requirements. (para. 1)

Participating in study abroad experiences, whether long-term or brief, may increase student engagement and commitment. For students, benefits of study abroad can include not only increased cultural interaction but also greater academic success while abroad and better-developed communication skills (Blake-Campbell, 2014; Teichler, 2015). Indeed, even brief immersion in a foreign environment can trigger personal transformations in students, leading them to critically examine their own empathy and engagement (Blake-Campbell, 2014) and bolster their commitment to their educational activities (Hendrickson, 2015; Luo & Jamieson-Drake, 2015).

Work-based learning is a broad term that incorporates internships, out-of-classroom clinical experiences, and other educationally-relevant activities in which students apply their knowledge to real-world workforce situations. TBR (n.d.-c) defines work-based learning as a

credit-bearing experience that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting [and may include] internships, practicums, clinicals, co-ops and similar experiences, integrated with a class or related to a major field of study. (para. 1)

Work-based learning may help students connect classroom learning to real-world situations, encouraging them to continue their postsecondary education through completion as well as providing an arena for students to apply their academic knowledge to the development of new skills (Holzer & Lerman, 2014). Ryken (2004) found that participation in work-based learning boosted students' retention and completion rates. In addition, students who participated in work-based learning experiences pertinent to their areas of study may be motivated to complete their college degrees at faster rates than their peers (Holzer & Lerman, 2014). Furthermore, students who participated in work-based learning tended to drop out of college at a substantially lower rate than students who were not involved in internships, clinical placements, or other work-based learning experiences (Ryken, 2004). Moreover, involvement in work-based learning programs in industries with high demand for new employees can propel students to achieve college degrees that are more valuable in the labor market (Holzer & Lerman, 2014).

Research on student athletics may yield information on how student involvement in official college-sanctioned athletics affects completion. For example, student athletics participation data as a retention variable may be worthwhile because "student-athletes are more likely to be retained the first year [possibly due to] the additional attention focused on them by the athletic department" (Wohlgemuth et al., 2006). Student athletics, therefore, are a catalyst for engaging student athletes in the life of the college and providing social integration for participants – two concepts upheld by the very definition of HIPs (Hatch, 2012; Kuh, 2008) and supported by the research of Tinto (1975). Students who are involved in college-sanctioned athletics may tend to stay in college and complete at higher rates than their uninvolved peers (Johnson, Wessel, & Pierce, 2013; Wohlgemuth et al., 2006). Moreover, student athletes tend to have higher first-year retention rates, possibly due to the support they receive from coaches and

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athletic support staff (Wohlgemuth et al., 2006). Student athletes who successfully complete their first academic year are more likely to persist to graduation, especially if they are satisfied with the amounts of time they were able to spend playing in competitions (Johnson, Wessel, & Pierce, 2013). Ten of the 13 community colleges governed by TBR offer sports such as baseball, softball, and women's and men's basketball supervised by the National Junior College Athletic Association (TBR, 2016a).

Research on gender, ethnicity, socioeconomic status, and ACT and Compass scores may provide data related to the ways these variables affect retention and completion of students who participate in service learning, study abroad, and student athletics. Ethnicity and socioeconomic status may not be significant determinants of retention, while gender and ACT or Compass scores may be (Windham et al., 2014). Furthermore, retention rates for non-minority students tend to be higher than for minority students, with the largest gap in the first academic year (Wohlgemuth et al., 2006). Additionally, a student's gender may predict retention, to an extent. Overall, at both community colleges and four-year institutions, females are more likely than males to graduate (Kena et al., 2014; Wohlgemuth et al., 2006). A student's socioeconomic level may affect that student's chances of academic success, too. Students who work at one or more jobs in college are more likely to come from low-income families and therefore be eligible for Pell grant assistance (Raju & Schumacker, 2015). Indeed, students who must work one or more jobs to overcome financial problems may tend to drop out of higher education at a higher rate than their wealthier peers, although their college entrance exam scores may suggest otherwise (Lotkowski, Robbins, & Noeth, 2004). A combination of these factors, then, may predict academic success or failure for students, essentially informing college administrators on specific outreach and learning support programs for different subsets of the student population.

Statement of the Problem

Community college students often struggle to complete their degrees on time. Students at community colleges often come from lower socioeconomic backgrounds, arrive with academic deficiencies, must balance coursework with jobs and families, and attempt to overcome a variety of other hurdles. As administrators strive to find new ways to support students, many community college administrators have implemented HIPs to try to provide new ways for students to find genuine connections with their colleges and therefore persist to graduation. The purpose of this study was to examine the associations between first-time, full-time, degree-seeking students' 3-year completion rates, participation in activities that may encourage persistence and retention, and the demographic variables of ethnicity, Pell grant recipiency, gender, and ACT or Compass subscores in English/writing, reading, and math/algebra. Although TBR is currently implementing specific HIPs in its member institutions, no research exists on current or archived member institution data to determine current or previous effectiveness of HIPs on community college students' graduation rates. It is unknown, therefore, whether a significant relationship already exists between this specific TBR community college's 3-year completion rate for first-time, full-time students and student involvement in service learning, study abroad, and student athletics. Kuh (2008) noted that engagement in a minimum of two HIPs over a student's undergraduate academic career increased the student's tendencies for retention and persistence. For the TBR community college in this study, the question of effectiveness of engagement in HIPs and corresponding completion rates remains unanswered. Additionally, the variables of ethnicity, Pell grant recipiency, gender, and ACT or Compass subscores were considered in this study to determine in what manner these variables predict completion within three years. This study used a quantitative research design to "maximize objectivity by using numbers, statistics,

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structure, and control" (McMillan & Schumacher, 2014, p. 29). Specifically, it had a

nonexperimental, correlational design to "[assess] relationships between two or more phenomena

… [and] involves a statistical measure of the degree of relationship" (p. 30). Although learning

more about the reasoning and influence behind students' academic choices regarding college

completion may be an interesting and complex qualitative study, this study focused not on

individual experiences but on factors affecting broad numbers of first-time, full-time students.

Research Questions

To assess the relationship between specific HIPs and degree completion rates at the TBR

community college, these research questions were addressed in this study:

Research Question 1: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students who participate in service learning as compared to first-time, full-time

students who do not participate in service learning?

Research Question 2: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students who participate in study abroad as compared to first-time, full-time

students who do not participate in study abroad?

Research Question 3: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students who participate in student athletics as compared to first-time, full-time

students who do not participate in student athletics?

Research Question 4: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students who identify as an ethnic minority as compared to first-time, full-time

students who do not identify as an ethnic minority?

Research Question 5: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students who receive Pell grants as compared to first-time, full-time students

who do not receive Pell grants?

Research Question 6: Is there a significant difference in the 3-year graduation rate for first-time,

full-time, female students as compared to first-time, full-time, male students?

Research Question 7: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students with ACT English subscores of 17 or below or Compass writing

subscores of 76 or below as compared to first-time, full-time students with ACT English

subscores of 18 or above or Compass writing subscores of 77 or above?

Research Question 8: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students with ACT reading subscores of 18 or below or Compass reading

subscores of 82 or below as compared to first-time, full-time students with ACT reading

subscores of 19 or above or Compass reading subscores of 83 or above?

Research Question 9: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students with ACT math subscores of 18 or below or Compass algebra

subscores of 37 or below as compared to first-time, full-time students with ACT math

subscores of 19 or above or Compass algebra scores of 38 or above?

Research Question 10: Is there a significant relationship between the number of selected

practices (service learning, study abroad, and student athletics) first-time, full-time

students participated in and the percentage of first-time, full-time students graduating

within 3 years?

Research Question 11: To what extent does participation in selected practices (service learning,

study abroad, and student athletics), students' ethnicity, Pell recipiency, remediation

needs as determined by ACT and Compass subscores, and gender predict graduation of first-time, full-time students within 3 years?

Significance of the Study

Although HIPs have been implemented for several months, little data exists to connect student participation to student success at the TBR community college under examination in this study. Are first-time, full-time students who are involved in HIPs more likely to continue their coursework and complete their associate degrees? If so, does involvement in HIPs help first-time, full-time students overcome other factors that tend to forestall academic progress? Much of the existing research concerning HIPs and completion relates to 4-year universities, not 2-year community colleges. Universities and community colleges tend to attract students of different socioeconomic backgrounds and levels of academic preparedness, among other variables; therefore, it follows that a study focusing on the demographics, HIP involvement, and academic outcomes of first-time, full-time community college students may reveal new insights into the efficacy of HIPs for first-time, full-time students enrolled at community colleges.

Limitations and Delimitations of the Study

This study's population was students who were enrolled as first-time, full-time freshmen at the TBR community college in Fall 2010, 2011, or 2012. The three-year completion dates for each incoming class of first-time, full-time students was Spring 2013, 2014, or 2015, respectively. Data were collected from student archival records in the Student Information System at the participating community college. Therefore, the results are not generalizable beyond the specific community college's student population for the specific semesters and years studied. However, the inherent longitudinal data within student records increases internal validity. Regardless, the findings may not apply to other community colleges in Tennessee or

elsewhere. Only first-time, full-time, degree-seeking and university transfer path students were included in this study; students pursuing workforce certificates or other non-university transfer programs were excluded. High-impact practices other than service learning and study abroad were not studied. Socioeconomic status was determined by recipiency of Pell Grant funding. Gender and ethnicity were self-reported by students.

Definitions of Terms

The following definitions provide clarification on many relevant words, phrases, and terms used in the context of this research and analysis.

Completion: Fulfilling academic institution requirements for degrees, workforce certificates, and other postsecondary educational credentials with vocational value (AACC, 2015a). Completion applies only to fulfillment of requirements for Associate of Arts and Associate of Science degrees, for purposes of this study.

First-time student: A student who has never before attended college (TBR, 2016b). However, students who participated in dual-enrollment college courses in high school are included in this definition.

Full-time student: A student who is enrolled in at least the minimum number of credit hours to satisfy institutional requirements, typically 12 credit hours in a semester for a community college (AACC, 2015a).

High-impact educational practices (HIPs): A set of activities that tend to positively affect student engagement, leading to increased retention and persistence. Common traits of HIPs include student-faculty interaction, exposure to diversity, high academic expectations, regular assessment of progress, reflection, real-world learning, and demonstrated knowledge (TBR, n.d.-d).

Persistence: The phenomenon of students completing degrees at the same institution as they originally enrolled, often within a specified time period (ACT, Inc., 2015).

Remediation: Coursework designed to improve students' skills to college level in specific core subjects. Also known as developmental education or learning support (National Center for Developmental Education, 2016).

Retention: The phenomenon of students enrolling from semester to semester or academic year to academic year at the same institution (ACT, Inc., 2015).

Service learning: A high-impact educational practice that combines classroom instruction with educationally relevant community service commitments and personal reflection. Student engagement in meaningful service learning tends to enhance student-learning outcomes (TBR, n.d.-a).

Study abroad: A high-impact educational practice that incorporates learning by experience in international locations and cultures with real-world applications and personal reflection (TBR, n.d.-b).

Student athletics: Official college-authorized, intercollegiate sports activities including men's baseball, women's softball, and men's and women's basketball (Tennessee Community College Athletic Association, n.d.).

Overview of the Study

Chapter 1 provided an introduction to the study, including its purpose and relevance, a statement of the problem, a list of research questions, definitions of terms, limitations and delimitations of the study, and a brief overview. Chapter 2 will provide a review of relevant literature about the high-impact practices of service learning and study abroad as well as the additional variable of participation of student athletics. Chapter 3 will provide information on the

research methodology, including research questions, population, and plans for data collection and analysis. Chapter 4 will contain data analysis and interpretations. Chapter 5 will contain a summary of the findings, conclusions and implications regarding the findings, and recommendations for further study.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

The purpose of this review of literature is to examine historical and modern scholarly

works that address service learning, study abroad, and student athletics in relation to college

completion. It begins with a review of the Tennessee Board of Regents' approach to service

learning, study abroad, and student athletics, and continues with an assessment of seminal and

modern thought of each factor. The chapter includes a review of recent literature regarding

students' gender, ethnicity, ACT and Compass scores, socioeconomic status, and their

graduation rates.

TBR has identified service learning, study abroad, and internships as three high-impact

practices for implementation in its member universities and community colleges (Tennessee

Board of Regents, n.d.-a). Students who participate in service learning courses engage in

structured community service as a strategy to apply knowledge gained in the classroom

(Tennessee Board of Regents, n.d.-a). Students write reflections of their community service work

as a way to demonstrate and document their experiences (Tennessee Board of Regents, n.d.-a).

Because it is incorporated into credit bearing general education courses, service learning

therefore becomes a routine, expected part of the college experience. Not all courses are

designed around service learning; instead, various other courses incorporate specific elements of

service learning. Because it combines classroom instruction with community involvement and

meaningful reflection, service learning tends to engage students on a deeper level than lecture-

only courses (Frazier, Niehm, & Stoel, 2012).

Study abroad, as described by TBR, is also integrated into credit bearing general education courses (Tennessee Board of Regents, n.d.-b). More than just travel and sightseeing, study abroad prompts participants to learn by experience, understand different cultures, and communicate effectively in countries, territories, and cities outside the United States. Students learn through experiential learning, an application of classroom knowledge in an authentic, different culture (Tennessee Board of Regents, n.d.-b). As in service learning, students who participate in study abroad are required to reflect on their experiences (Tennessee Board of Regents, n.d.-b). Study abroad is more commonplace now, even in community colleges, although it was once regarded as the milieu of wealthy students at exclusive 4-year universities (Bradshaw, 2013). Studies have indicated that students who participate in study abroad tend to have higher retention and completion rates, qualifying study abroad as a high-impact practice (Kuh, 2008).

Student athletics are college-sponsored sports activities sanctioned by collegiate athletic associations. The largest is the National Collegiate Athletic Association (NCAA), which oversees more than 460,000 student athletes in 23 sports annually (National Collegiate Athletic Association, 2015). Colleges under the NCAA and other athletic associations attend to the academic needs of student athletes with specialized academic advising, tutoring, and classroom flexibility for game schedules as needed (Storch & Ohlson, 2009). Due in part to this academic support, more than 80% of student athletes eventually earn bachelor's degrees, and more than one-third eventually earn postgraduate degrees (National Collegiate Athletic Association, 2015). TBR does not clarify a unique or more specific definition for student athletics.

Service Learning

Dewey (1938) argued for the value of education by experience, providing a theoretical basis for modern service learning. Dewey regarded ideas and precepts as abstract, and only their application could imbue them with genuine meaning. Therefore, academic principles would become more relevant as they were experienced and practiced in the real world (Dewey, 1938). A decade later, Tyler (1949) asserted that learning occurred through external experiences and internal reactions. Meaningful education would happen only when students performed activities in a specific environment, not when an instructor lectured on it or when it was read in a book (Tyler, 1949). The characterization of the student as an active participant in learning led Tyler (1949) to propose that instructors could shape or create learning environments in which students could find intellectual stimulation and thereby learn by doing. In modern application, both Dewey (1938) and Tyler (1949) buttress the concept of service learning that the federal government adopted with the National and Community Service Act of 1990 (1999). The legislation defines service learning as an academic credit-based avenue for students to learn via active involvement in meaningful community service followed by personal reflection on their experiences. The NCSA was implemented to encourage community service for students of all ages; higher education institutions were called to support service learning to address educational, public safety, and other needs in their own communities. Higher education instructors were urged to incorporate service learning into curricula as one way for colleges and universities to stand as beacons of community interaction and civic development (NCSA, 1999). Bringle and Hatcher (1995) echoed this concept of service learning as a credit-bearing, instruction-based, active-learning experience but also noted the importance of students' reflections in demonstrating comprehension of the course content, understanding of the discipline, and

developing personal ethics and civic responsibility. As the practice of service learning has been

adopted and modified by more institutions, the core elements have remained. Despite the specific

adaptations by various colleges and universities, service learning focuses on merging learning

goals and community needs, encouraging partnerships between higher education institutions and

community organizations, and relying on critical reflection assignments to substantiate

meaningful student learning (Bringle & Hatcher, 1995). Although it has become more

widespread across colleges and universities, service learning remains a unique approach to

student learning because it combines hands-on learning with classroom education and moves the

students' experiences into the local community (Frazier et al., 2012). Community partnerships

need not be unique or strikingly novel; students tend to be most interested in direct service to

community organizations and specific projects that benefit community organizations (Bringle,

Hatcher, & McIntosh, 2006). Existing limitations, including time, learning goals, student

competency, and faculty interests, may shape the service-learning experience, but the

experiences for students and community partners do not necessarily suffer because of the

limitations (Bringle et al., 2006). Hancock, Shenk, and George (2013) found that students may

find even greater benefits when they can make some of their own choices on projects and

community sites.

Felten and Clayton (2011) asserted multiple definitions of community, including on a

college campus, in nearby neighborhoods, in adjacent cities, in other states or nations, and even

online. Regardless of specific locations for service-learning experiences, the concepts of reality,

reflection, and reciprocity are fundamental to successful service-learning pedagogy (Godfrey,

Illes, & Berry, 2005). Yorio and Ye (2012) described these three elements as key to the

instructional design of service learning; acknowledging the reality of community needs and

student capabilities, designing opportunities for meaningful reflection, and providing for reciprocity between students, educators, and community organizations help propel students toward personal growth through hands-on education. Reciprocity, defined for this purpose as the mutual exchange of services, involves colleges providing student labor and academic services to community organizations that in turn provide opportunities for real-world educational experiences to students. Felten and Clayton (2011) saw reciprocity as intrinsic to service learning because it connects academics to community needs. Reality and reciprocity prompt students to understand social issues more comprehensively, while reflection helps students develop empathy and personal growth (Yorio & Ye, 2012). Reflection, whether written, oral, or in another assessable format, provides a channel for students to evaluate their experiences through the lens of their education, essentially deepening and personalizing their learning (Felten & Clayton, 2011). The combination of reality, reciprocity, and reflection spurs cognitive development in students (Yorio & Ye, 2012).

Involvement in service learning not only reinforces student engagement with their chosen higher education institutions, but it also helps fulfill colleges' civic obligations, including, for example, the challenge to actively shape and help their local neighborhoods (NCSA, 1999). First, community organizations benefit from no-cost services and labor from students and faculty; second, the service-learning experience instills in students a deeper understanding of the roles of community organizations (Goomas & Isbell, 2015). Thus, service-learning projects funnel students back into the community, where students fulfill academic requirements while providing crucial support to local non-profit entities. From the community organization's perspective, service learning provides necessary services and manpower hours; from the college's perspective, service learning reinforces classroom content, theories, and skills in students

(Fiume, 2009). Students place themselves into environments beyond the classroom and learn about social issues important to their communities, an experience that educates students on a deeper level as they learn about problems facing their communities (Sass & Coll, 2015). Involvement in service learning, therefore, can prompt students to become more civically engaged. This heightened engagement appears to be as widespread for service learning in community colleges as in 4-year universities (Prentice, 2011). Additionally, although community college students may tend to be poorer and more ethnically diverse than their 4-year counterparts, the power of service learning to prompt civic engagement among students appears to overcome the existing tendency for lower civic engagement rates among community college students (Newell, 2014). Students who participate in service learning gain awareness of complex societal issues, sharpen their communication skills, and develop an appreciation for others' experiences (Payne-Jackson, Haynes, & Scott, 2014). Moreover, students who become engaged in their communities through service learning adopt problem-solving techniques that may parallel the practical skills needed in the workplace (Maurrasse, 2015). Such applied learning, then, benefits the students not only in their service-learning assignments but also after graduation as they enter the job market as better-prepared, more capable workers and innovators. At the same time, service-learning experiences can reveal fertile ground for students who may consider starting their own businesses (Frazier et al., 2012). Partnerships between colleges and businesses in economically depressed communities can yield collaborative opportunities, an appraisal of existing resources, and innovative ideas to bolster economic development (Frazier et al., 2012). Therefore, students who approach service learning with entrepreneurial ambitions may develop connections, political and otherwise, that will be readily accessible when the time comes to launch businesses and revitalize small towns.

As barriers between students and community organizations are lowered, students are able to acknowledge and appreciate the concept of change both personally and socially. Embracing change leads students to sample new activities, show more sensitivity to people from different cultural backgrounds, and become more self-empowered to effect change in their own lives (Payne-Jackson et al., 2014). Similarly, Yorio and Ye (2012) noted that students involved in service learning tend to develop more positive approaches to social concerns, modify their perceptions of themselves, and achieve more advanced cognitive development. However, students must be aware of how their classroom educations connect to their field experiences so they can fully understand their service-learning experiences (Vaknin & Bresciani, 2013). Felten and Clayton (2011) noted that service learning often made students face uncomfortable social realities, therefore requiring students to acknowledge both their academic goals and their own emotional responses. Despite the potential for emotional distress, community college students may be better suited than their counterparts at 4-year universities to handle socially sensitive issues through service-learning (Vaknin & Bresciani, 2013). Compared to their 4-year university peers, community college students are more likely to live in the surrounding community, have grown up in the surrounding community, and stay in the community after graduation; because of their pre-existing connections to the community and its corresponding social needs, community college students who are involved in service learning may not only already be familiar with local community organizations but also become more civically engaged and responsible as they go through their individual service-learning experiences (Vaknin & Bresciani, 2013). Furthermore, students who choose community partner organizations based on their own leadership traits may benefit specifically because of the real-world experiences that particular partners provide (Wood & Palmer, 2013). For example, a student who has a servant leadership style and wants to help

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others succeed may greatly benefit from choosing a partner organization that focuses on helping clients learn specific skills. In this instance, the service-learning experience would challenge the student to further develop a leadership style by doing hands-on work to support existing leadership tendencies, a lesson that would be echoed in the student's personal reflections that describe the intersection of academic coursework and social needs (Felten & Clayton, 2011).

Students who choose to become involved in service learning tend to have positive outcomes. For example, Bielefeldt and Pearce (2012) found that service learning outcomes for engineering students include enhanced academic success, real-world application of skills, and improved critical thinking abilities. Additionally, community college students involved in co-curricular activities including service projects tend to have higher grade point averages, are more satisfied with their college experiences, and are more independent, emotionally stable, and confident than their uninvolved peers (Elliott, 2009). Largent (2013) found similar positive effects for nontraditional community college students, particularly in that hands-on service learning and reflections helped them better understand course content. In a review of studies regarding service learning in community colleges, Taggart and Crisp (2011) found value in the students' real-world applications of academic concepts and cited student successes including more classroom discussion interaction and higher grades overall, among others. Service learning can positively affect student success in 4-year universities, as well. Warren's (2012) analysis of studies of service learning in universities also revealed a connection between service learning and positive learning outcomes. Furthermore, college students who participate in service learning may be more likely to stay enrolled and complete their degrees (Reed, Rosenberg, Statham, & Rosing, 2015). In fact, service-learning involvement has the most influence on student persistence at colleges with low retention rates (Reed et al., 2015). Service learning may help

students develop not only academic skills but also their capabilities for social consciousness and compassion, arguably important outcomes (Rockenbach, Hudson, & Tuchmayer, 2014). Additionally, Goomas and Weston (2012) found a halo effect for service learning in that uninvolved students felt inspired to get involved simply by learning about the experiences and academic integration of involved students.

These affirmations may encourage college leaders to implement new service-learning programs or bolster existing service-learning efforts. Warren (2012) noted that service learning not only promotes cultural awareness and encourages social responsibility among students, but it also enhances student-learning outcomes, a common goal for many higher education initiatives. Furthermore, students involved in service learning develop advanced cognitive abilities, including being better able to comprehend and put course content into practice as well as earning higher marks on exams (Largent, 2013). Additionally, some students suggested that service-learning experiences promoted their personal and professional growth (Pelco, Ball, & Lockeman, 2014). Moreover, service learning enhances students' comprehension of course material. Students who recognize the value of service learning are better able to use the field experiences to scaffold their classroom learning, especially by evaluating their experiences and deepening their understanding via critical reflections (Largent, 2013). Additionally, students involved in service learning felt more motivated to master course materials, chose to spend more time on service-learning assignments, and learned course content more effectively in the eyes of their instructors (Bielefeldt & Pearce, 2012). Pelco et al. (2014) identified a gender divide in service learning student outcomes, with female students reporting both academic and personal growth and males reporting mixed results. On a broader perspective, students, regardless of gender, who

are involved in service learning activities tend to report higher satisfaction with their overall college experiences (Elliott, 2009).

Service-learning experiences that put students directly into work-related experiences are beneficial because they shape students' perspectives about community service, provide insight into specific career paths, and help students understand more about specific career fields, and they also give students ways to generate positive, tangible effects in the real world (Bielefeldt & Pearce, 2012). However, students may need to be engaged in service learning related to their intended career paths to achieve the full benefit. Students whose service-learning experiences were based in areas of their own interests achieved personal growth as well as vocational insight; students who were mandated to fulfill service-learning requirements with organizations that were of less interest still found vocational clarity but not personal growth (Rockenbach et al., 2014).

Service learning can be beneficial in less direct ways, too. In courses that included optional service-learning elements, students who chose to eschew service learning still benefitted from the experiences and in-class reflections of their classmates who engaged in service learning (Goomas & Weston, 2012). Special attention to service learning from the instructor coupled with enthusiasm from involved classmates led the students who decided to forego service learning to see the benefits and opportunities that arose for those who were involved (Goomas & Weston, 2012). The finding that service learning generates a ripple effect among students involved and uninvolved in service learning shows the benefit of experiential learning and the enthusiasm of students who are engaged in it.

Study Abroad

Collegiate study abroad found its beginnings in the United States after World War I, when some colleges created opportunities primarily for female students to study in Europe

(Twombly, Salisbury, Tumanut, & Klute, 2012). The Institute of International Education (2016), founded in 1919, was established to promote cultural and international understanding through shared higher education experiences abroad. The federal government halted study abroad during World War II, and after the war the government took a larger role in overseeing study abroad (Twombly et al., 2012). From its beginnings, the experience of study abroad was seen as enhancing student development in cultural knowledge, practical and academic skills, social responsibility, and broader understandings of conceptual learning (Twombly et al., 2012).

Study abroad programs offer opportunities for international travel, meeting and learning with people from different nationalities, immersion in foreign cultures, and daily exposure to foreign languages. These opportunities can translate into transformative and meaningful learning for students, who must learn to navigate the new and unfamiliar cultures in which they live and study (Passarelli & Kolb, 2012). As they learn to find their ways in different cultures, students develop new ways of connecting with other people, finding meaning in their daily lives, and thinking about new ideas; in other words, they become more capable of independence and more mindful of how they can interact with the world. Study abroad can be transformative for students who acknowledge the inherent difficulties of foreign immersion yet find the zeal to thrive in it. Moreover, study abroad can change students' view of the world and its varied cultures, provide a different outlook on coursework, and provide students with new friends and relationships that would have been very unlikely outside of a study abroad experience (Passarelli & Kolb, 2012). Colleges tend to provide at least one form of access to study abroad, whether by partnering with international education organizations, offering courses with international travel components, or other means.

The prestige and perceived success of study abroad programs may have encouraged more colleges and universities to develop their own study abroad options. An American Association of Community Colleges survey in 2000 revealed that more than 80% of community colleges offered courses with international components, double the number that offered international education five years earlier (Blair, 2001). Furthermore, the number of offerings in international business almost tripled in the same five-year period, and 83% of community colleges held global awareness events on campus (Blair, 2001). A similar survey in 2007 found that an additional 29 community colleges had begun offering study abroad opportunities to students only seven years later (Raby, 2008). As colleges began to offer more international exposure to American students, they also worked to hire faculty from other countries or with international experience, and they increased efforts to recruit international students; such actions can increase diversity on campus and in the community (Blair, 2001; Wells, 2007). Despite these seemingly positive steps, community colleges overall have not been taking the initiative to incorporate international education into their missions (Bradshaw, 2013). By definition, community colleges are charged with addressing the higher education needs of their local communities or service areas; as such, community colleges work to educate local citizens in meaningful workforce skills that lead to local employment or address the educational objectives of high school graduates who intend to transfer to 4-year institutions. Because of their intrinsic local focus, community colleges have maintained much of their educational efforts on direct, local needs, not necessarily the benefits of diversity and international perspectives from study abroad (Bradshaw, 2013). Contributing to the community colleges' local focus would be the influence from local residents, business leaders, and government officials, who may regard study abroad as an extravagance for wealthy students at the end of their college careers (Bradshaw, 2013). Therefore, study abroad may be considered

a distraction for higher education institutions that are tasked with educating a student body that is often rural, socioeconomically disadvantaged, and relatively immobile (Bradshaw, 2013). Regardless, community college students expect opportunities for study abroad. Despite concerns over terrorism and international crises, students maintain interest in study abroad, with half of incoming college students indicating plans for international education at some point during their college experiences (American Council on Education, 2008).

Additionally, a broad worldview is becoming an essential part of a college education because employers are coming to expect it. The modern workplace often requires new employees to be able to work closely with colleagues, business contacts, and customers from diverse backgrounds and cultures (Bradshaw, 2013). Even community college graduates who find work in their own local communities may work on some level with people and businesses from all over the world, so exposure to diverse cultures, languages, customs, and ways of transacting business would benefit them. Whether they go to work with job training certificates or continue to 4-year universities with transfer degrees, community college graduates are now more likely to need to communicate with a variety of people from a variety of international backgrounds, comprehend global economic situations, and be prepared for more cultural integration in their careers (Bradshaw, 2013). As many institutions strive to diversify their current student populations, a focus on boosting study abroad participation may in fact yield compelling results. Study abroad exposes students to differences beyond skin color (Gates, 2014). A primary value of study abroad is that it propels students into different cultures and ways of life that would ordinarily be unavailable or difficult to simulate on their home campuses (Salisbury, 2011; Gates, 2014). Students who take advantage of study abroad opportunities and create meaningful

reflections of their experiences may develop intercultural competence, a global perspective that would be difficult to attain otherwise (Salisbury, 2011).

In the 2000 AACC study, nearly two-thirds of colleges reported employing staff to oversee international education programs (Blair, 2001). Because of increased funding availability and student demand, colleges with larger student bodies were more likely to employ international education staff (Blair, 2001). Student demand may dictate the quantity and quality of study abroad programs offered by colleges. Nearly half of students expect their colleges to offer comprehensive foreign language instruction, international travel and study opportunities, interaction with students from other cultures and nationalities, international internships, education on important social issues from around the world, and attention to global environmental concerns (American Council on Education, 2008). Student demand for short-term study abroad programs has risen, too, with a growth of 2.3% in the number of such programs offered at colleges between 2007 and 2011 (Blake, 2014). In fact, at community colleges, more than three-quarters of students who study abroad do so on short-term programs of up to eight weeks (Raby, 2008). College student participation in study abroad of one semester or less has increased since 1992 (Gates, 2014). Additionally, non-credit international activities including research and volunteerism would boost the numbers of participation even more (Gates, 2014). Community college students are more likely than their 4-year university peers to participate in short-term programs for many reasons, possibly including cost, time required, and the appeal of international exposure in a relatively brief period (Raby, 2008; Sinclair, 2014). Although study abroad advisors may encourage students to dedicate full academic years to international programs, the percentage of students who spend that long abroad has remained the same (Gates,

2014). Short-term study abroad can provide international immersion along with hands-on experience, essentially bridging applied and intellectual learning (Gates, 2014).

Because of the inherent demographic diversity at community colleges, community college students who choose to study abroad tend to be equally diverse (Arps, 2013; Raby, 2008; Sinclair, 2014). The percentage of minority students studying abroad through community colleges has climbed more quickly than the percentage of minority students pursuing international opportunities through 4-year institutions (Raby, 2008). One exception is that Asian-American students are less likely than white students to study abroad, yet other minority students continue to express high interest in international education (Luo & Jamieson-Drake, 2015). Closer analysis reveals that more students who identify as ethnic minorities are studying abroad while white students at the same institutions are showing a declining interest (National Center for Education Statistics, 2013). Female students are almost twice as likely as male students to be interested in studying abroad, overall in higher education (Luo & Jamieson-Drake, 2015). College major may inform tendencies to study abroad, with humanities majors indicating the most interest and engineering and science majors showing considerably less (Luo & Jamieson-Drake, 2015). White students from wealthier backgrounds are more likely to study abroad, and parental educational levels positively influence the likelihood for student involvement in international education (Salisbury, Paulsen, & Pascarella, 2011). Students who receive federal grants for tuition and other college expenses are less likely to study abroad (Phillips, 2014; Salisbury et al., 2011). This finding may reflect that grant recipients generally come from families with lower socioeconomic status; a family's need for financial assistance with tuition may intuitively dictate the family's inability to afford study abroad. In general, however, the perceived high price of study abroad may deter students from seriously considering it (Phillips,

2014). Of course, study abroad entails a specific set of expenses, including travel, accommodations, and documentation, yet the costs can be contained and may be lower than students imagine (Phillips, 2014). The issue of affordability may impact minority college students, particularly African-American students who may tend to come from socioeconomically disadvantaged backgrounds and therefore may decline to participate in study abroad (Salisbury et al., 2011). Although it contradicts studies that find increasing numbers of minority students who study abroad through community colleges, African-American students may choose to disregard study abroad opportunities simply because study abroad offers interaction with people from different cultures and backgrounds (Salisbury et al., 2011). For white students, traveling abroad and experiencing social ambiguity may be an intriguing novelty; however, because African-American students may live in predominantly Caucasian areas, they may not feel the need to study abroad for cross-cultural opportunities that they already experience in their own communities (Salisbury et al., 2011).

Many students cite interest in study abroad and international travel, and many students who consider study abroad predict various benefits to come from the experience; included among the benefits are improved command of foreign languages, learning about new perspectives in other nations, developing a more well-rounded outlook on life, and learning to adjust to other cultures (American Council on Education, 2008; Bidwell, 2014; Blake-Campbell, 2014; Williams & Best, 2014). Study abroad also helps students learn both academically and culturally, and many students experience improved abilities to relate to people from different cultures (Blake-Campbell, 2014). Students believe study abroad helps them experience different cultures, provides better foreign language skills, gives them a competitive advantage in the workplace, and boosts their aspirations of attending prestigious graduate schools (American

Council on Education, 2008; Gary, Arino de la Rubia, Brinkley, & Thompson, 2010).

Furthermore, participants cite personal growth, academic development, better communication skills, and broadened perspectives (Hendrickson, 2015). Because study abroad places American students alongside people from different ethnicities and cultures, it may also lead to better cultural acceptance. Such experiences may lead to a decrease in prejudice and assumed stereotypes and a correlating increase in acceptance of other people and their ideas, traditions, and ways of life (Hendrickson, 2015). Learning in other cultures leads students to understand the complexity of global issues better than they would otherwise in a classroom, better comprehend economic and social issues from other cultures, and discover their own self-confidence (Gates, 2014). Despite the evidence from several studies, college faculty and administrators who expect students to return from international education experiences as wholly changed individuals with new perspectives on the world may be disappointed. Instead, study abroad helps propel students toward transformative learning and helps them develop their own concepts of empathy and ethics on a broader scale (Blake-Campbell, 2014). Luo and Jamieson-Drake (2015) found that study abroad participation led to increased comprehension of ethical and moral issues, academic performance, communication skills, and general satisfaction with their college careers. Meaningful engagement with people from other cultures gives students a unique opportunity to reflect on their own biases and perspectives. Passarelli and Kolb (2012) identify affective, perceptual, symbolic, and behavioral complexities that arise in students who fully benefit from study abroad. Affective complexity develops when students become open to new experiences, fully embrace the differences in the world around them, and acknowledge full presence in the moment. Next, perceptual complexity develops as students pay attention to detail, manage a variety of stimuli simultaneously, and acknowledge a variety of viewpoints. Symbolic

complexity is represented by fluency in new language and adapting new experiences to pre-existing systems of knowledge. Finally, behavioral complexity develops when students accept and practice new behaviors in new cultures, showing flexibility in matching actions to environment (Passarelli & Kolb, 2012). Although study abroad may generate personal and academic development in participants by challenging their behavioral and cultural norms, it may not be enough to encourage students to reflect on their experiences and try to find new ways to understand global issues (Bradshaw, 2013). Without intentional instructional guidance, students in study abroad programs may run the risk of perpetuating stereotypes of rude, oblivious American tourists (Bradshaw, 2013).

Student Athletics

Academic success for student athletes may hinge on their involvement in college sports (Mendoza, Horton, & Mendez, 2012), their engagement in college life (Hackett & Sheridan, 2013), and their academic histories, ethnicity, gender, and socioeconomic backgrounds (Horton, 2009, 2015; Le Crom, Warren, Clark, Marolla, & Gerber, 2009; Muir, 2015), among other variables. African-American male student athletes tend to have lower college completion rates than either African-American female student athletes or their non-minority peers, and they tend to be less prepared academically when they begin taking college classes (Horton, 2015). Routon and Walker (2015) echoed that finding, noting that student athletes who play in marquee college sports, e.g., football and men's basketball, tend to arrive on campus with worse academic preparation than their non-marquee and non-athlete peers. Despite their potential academic shortcomings and lower completion rates, these students are more likely to be athletic scholarship recipients, which may place additional emphasis on them to achieve good grades in order to continue athletic eligibility (Matheson, 2007) and to keep alive their dreams of playing

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sports in the grander arena of 4-year universities and eventually in professional sports (Harper, 2009). Therefore, the tendency to underperform academically coupled with the pressure to meet academic benchmarks to maintain scholarships and player eligibility may contribute to student athletes' collegiate stress and challenges that could prevent timely completion (Comeaux, 2015; Matheson, 2007; Mendoza et al., 2012).

Athletics can be a doorway to higher education for many students (Mendoza et al., 2012). After they are recruited, student athletes may find academics challenging in unexpected ways. Colleges and universities help support student athletes' academic success in part through on-campus tutoring centers and coordinated advising (Weiss & Robinson, 2013). This academic support can help student athletes achieve good grades and maintain their player eligibility. Despite efforts from higher education to keep them on track academically, student athletes face mitigating factors that can delay or prevent completion (Mendoza et al., 2012; Muir, 2015; Routon & Walker, 2015). For example, time and attention spent on athletics may detract from focus on academic studies (Gayles, 2009). Muir (2015) found that student athletes are less likely than non-athletes to complete their degrees on time; however, the same study revealed that male athletes were more likely than female athletes to persist, leading Muir (2015) to suggest that male athletes worked harder to keep academic eligibility to play sports in their subsequent years of college. In that sense, athletic ambitions may be kept afloat by enforcement of academic standards; involvement in student athletics in general motivates students to complete their degrees (Gayles, 2009). Hackett and Sheridan (2013) identified two factors with even more influence than the drive to keep playing sports: institutional fit and institutional commitment. Institutional fit, the match between the college and a student athlete's skills, aspirations, and expectations, emerged as the most important indicator of completion (Hackett & Sheridan,

2013). Institutional commitment, the measure of engagement the student athlete feels to the college, was found to affect completion rates as well (Hackett & Sheridan, 2013), affirming Tinto's (1975, 1987) assertions about student engagement leading to positive academic outcomes. Such engagement may be magnified in student athletics, as players create their own community through friendships with other players and a reliance on coaches for advising, personal guidance, and academic help (Gilmour, 2013). Indeed, the communities formed by athletic teams provide social support for student athletes (Melendez, 2015).

Community colleges in particular can bolster student athletes in their quests for completion by investing in support programs and staff for student athletes' academic progress (Lawrence, Mullin, & Horton, 2009; Weiss & Robinson, 2013), providing appropriate funds for student athletes' personal development (Horton, 2009), and boosting faculty engagement in athletics programs (Horton, 2009, 2015). Intrusive advising, which involves continuous monitoring of academic progress with an advisor, may benefit student athletes because it focuses attention on student grades and classroom performance (Storch & Ohlson, 2009). Academic preparation and performance, in fact, tend to predict student athlete retention (Radcliffe, Huesman, & Kellogg, 2006). Therefore, the need is obvious for academic support services to be available for student athletes who may struggle in the classroom. Storch and Ohlson (2009) noted that community colleges are well suited to provide support services for student athletes because they already offer remedial programs for academically underprepared students. Due to low community college completion rates among ethnic minorities in particular, every single African-American male student athlete who completes his degree at a community college and transfers to a 4-year institution could significantly boost the community college's overall completion rate (Harper, 2009). Community colleges, then, can be ideal for student athletes who

prefer smaller schools, want more personalized academic attention, need to improve their athletic

skills before transferring to 4-year institutions, and are interested in lower tuition costs;

community colleges that offer athletics programs therefore offer pathways to academic success

and degree completion (Mendoza et al., 2012; Noonan-Terry & Sanchez, 2009).

Rural community colleges are more likely than their urban counterparts by a two-to-one

margin to offer student athletics (Kissinger & Miller, 2007), thereby theoretically boosting their

completion rates. Rural colleges' emphasis on student athletics may be a way to increase interest

from prospective students; enrollment gains benefit colleges financially because of resulting

increases in tuition payments and other revenue streams (Bush, Castañeda, Hardy, & Katsinas,

2009). Furthermore, rural community colleges with student athletics may see sports involvement

from more than 20% of enrolled male students (Kissinger & Miller, 2007), which supports the

notion that athletics programs attract full-time students, particularly males (Bush et al., 2009).

But for both rural and urban community colleges, the idea that student athletics attract new

students reinforces the institutions' commitment to their service areas as accessible avenues for

higher education, especially for students from poor socioeconomic backgrounds (Horton, 2009;

Mendoza et al., 2012). Student athletics can uphold community colleges' open-access missions

by providing playing opportunities for local students with skills and interests in specific sports

(Byrd & Williams, 2007). Community colleges have unique features that may appeal to student

athletes, as well. For many students – athletes or not – community colleges are a good fit because

of lower tuition costs, the ability to continue living at home, smaller campuses and class sizes,

and the opportunity to improve athletic skills before eventual transfer to a 4-year university with

a larger sports presence (Horton, 2009). Interestingly, athletics programs themselves may create

new opportunities for student involvement in other sports-related activities such as pep bands,

cheerleading squads, and dance teams (Noonan-Terry & Sanchez, 2009). Essentially, enthusiasm and success surrounding one sport can generate enthusiasm and lead to success for another. Indeed, the smaller size and more personal attention at community colleges reinforce the academic and athletic development of student athletes, proof that athletics can be integral to the community college experience (Horton, 2009, 2015).

<div align="center">*Other Independent Factors*</div>

Gender, ethnicity, standardized test subscores, and socioeconomic status are among the factors that can predict academic success and college completion. Female students are more likely than male students to complete their degrees are females (NCES, 2014). Although completion rates for African-American students have risen, they are still less likely to complete their degrees than students of other ethnic descent (Muir, 2015). Students who earn standardized test subscores high enough to allow them to bypass learning support are more likely to complete their college degrees, and students who are flagged as needing remediation may lack other skills needed for academic success (Donhardt, 2013). Socioeconomic status as determined by Pell grant recipiency also can predict degree completion (Ma & Baum, 2015).

Gender

Community college students who are female tend to complete their degrees within three years, or within 150% of normal 2-year time, at higher rates than their male counterparts (NCES, 2014). Furthermore, female students tend to have substantially higher retention rates than male students (Windham et al., 2014). However, involvement in student athletics may result in higher persistence rates for male community college students (Muir, 2015); despite that, male student athletes may fall short on completion rates compared to their female counterparts (Horton, 2015). Clark (2015) found that participation in collegiate athletics increased male students' satisfaction

in their college experiences, therefore compelling them to continue their academic pursuits in order to maintain engagement in student athletics. Female students, on the other hand, may be more committed to academics, yielding higher grades as well as better retention and completion rates (Melendez, 2015).

Ethnicity

Spangler and Slate (2015) noted climbing persistence and graduation rates for Caucasian, African-American, Hispanic, and Asian community college students from 2000 to 2010. Asian students not only had the highest graduation and persistence rates but also made the biggest gains in rates (Spangler & Slate, 2015). Muir's (2015) findings echoed those results, with analysis indicating students of Asian descent and Hispanic descent being significantly more likely to complete their college degrees. Additionally, students of Asian, Hispanic, and Caucasian descent were significantly more likely to persist (Muir, 2015). These studies confirm the earlier assessment that African-American students are less likely to complete their college degrees (Lotkowski et al., 2004).

ACT and Compass Scores

TBR (2012) policy requires students with ACT English subscores of 17 or below or Compass writing subscores of 76 or below, ACT reading subscores of 18 or below or Compass reading subscores of 82 or below, and ACT math subscores of 18 or below or Compass algebra subscores of 38 or below to successfully complete special, non-credit-bearing courses designed to bring students' skills to college level. Using ACT and Compass subscores to flag students for remediation appears to be reasonable practice, given that ACT scores tend to predict retention (Lotkowski et al., 2004). TBR community colleges transitioned from prerequisite remediation to corequisite remediation, in which students take credit-bearing courses at the same time as

supplemental remedial courses, beginning in 2014 in an attempt to boost academic success and, therefore, retention, persistence, and completion rates (Moreland, 2016). Less than 10% of community college students who are placed in prerequisite remedial courses complete their degrees within 3 years, which illustrates that these students may struggle to raise their academic skills and then choose to drop out of college altogether (Complete College America, 2012); shifting to corequisite remediation may help raise the low persistence and completion rates (Moreland, 2016). Regardless, students' needs for remediation can highlight a variety of college preparation deficiencies that may require deeper intervention than simply undertaking developmental coursework (Donhardt, 2013).

Socioeconomic Status

Socioeconomic status as determined by family income, expected family contribution, and Pell Grant recipiency tends to predict degree attainment (Ma & Baum, 2015). Furthermore, students who receive financial aid tend to have lower retention rates (Fike & Fike, 2008), and Pell grant recipients in particular tend to have lower completion and graduation rates (Ma & Baum, 2015). Mendoza et al. (2012) found that even academically successful, Caucasian students who received Pell grants had lower retention rates. The socioeconomic status of individual students can generate a snowball effect on a college's overall population; Morrison (2012) noted that colleges with relatively few Pell grant recipients boasted relatively high graduation rates, while colleges with high numbers of Pell grant recipients maintained average graduation rates.

Chapter Summary

Chapter 2 provided a review of the related literature on the high-impact practices of service learning and study abroad as well as the additional variable of participation in student

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athletics. This review of literature demonstrated the value of service learning, study abroad, and student athletics in student retention and engagement. Chapter 3 will provide information on the research methodology, including research questions, population, and plans for data collection and analysis. Chapter 4 will contain data analysis and interpretations. Chapter 5 will contain a summary of the findings, conclusions and implications regarding the findings, and recommendations for further study.

CHAPTER 3

RESEARCH METHODOLOGY

This study was conducted at a comprehensive, 2-year, open-access, multi-campus, public

higher education institution that is governed by TBR. As TBR emphasizes implementation of

high-impact practices (HIPs) to improve graduation rates, TBR's community colleges must

determine how to effectively apply HIPs to encourage students to persist to program completion.

The service-learning HIP, for example, is implemented at the community college in this study

primarily in the SERV 1010 course. Because it is a general elective, students who enroll in

SERV 1010 do so purposely and of their own volition. Similarly, students who participate in the

study abroad HIP do so by enrolling in elective courses in specific concentrations, including

biology, business, and nursing. Student athletics, although not classified by TBR as an HIP,

engage participants in team activities with support and academic advisement from coaches and

trainers. Participation in student athletics is required for students who receive athletic

scholarships or financial aid; however, overall involvement in student athletics remains voluntary

so that students who participate do so purposely.

Purpose

The purpose of this study was to examine the associations between first-time, full-time,

transfer degree-seeking students' 3-year completion rates, participation in activities that may

encourage persistence and retention, and the demographic variables of ethnicity, Pell grant

recipiency, gender, and ACT or Compass subscores. Although TBR is implementing specific

HIPs in its member institutions, no research exists on current or archived member institution data

to determine current or previous effectiveness of HIPs on community college students'

graduation rates. It is unknown, therefore, if a relationship already exists between this specific

TBR community college's 3-year completion rate for first-time, full-time, transfer degree-seeking students and student involvement in SERV 1010, study abroad, and student athletics. Kuh (2008) noted that engagement in a minimum of two HIPs over a student's undergraduate academic career increased the student's tendencies for retention and persistence. For the TBR community college in this study, the question of effectiveness of engagement in HIPs and corresponding completion rates remained unanswered. Additionally, the variables of ethnicity, Pell grant recipiency, gender, and ACT or Compass subscores were considered in this study to determine in what manner these variables predicted completion within three years. Although these variables are not included in Kuh's (2008) list of HIPs, they may affect completion on their own. This study uses a quantitative research design to "maximize objectivity by using numbers, statistics, structure, and control" (McMillan & Schumacher, 2014, p. 29). Specifically, it has a nonexperimental, correlational design to "[assess] relationships between two or more phenomena … [and] involves a statistical measure of the degree of relationship" (p. 30). Although learning more about the reasoning and influence behind students' academic choices regarding college completion may make for an interesting and complex qualitative study, this study focuses not on individual experiences but on factors affecting broad numbers of first-time, full-time, transfer degree-seeking students.

Research Questions

For this study, data were collected to address the following research questions:

Research Question 1: Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in service learning as compared to first-time, full-time students who do not participate in service learning?

Ho1: There is no significant difference in the 3-year graduation rate for first-time, full-time students who participate in service learning as compared to first-time, full-time students who do not participate in service learning.

Research Question 2: Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in study abroad as compared to first-time, full-time students who do not participate in study abroad?

Ho2: There is no significant difference in the 3-year graduation rate for first-time, full-time students who participate in study abroad as compared to first-time, full-time students who do not participate in study abroad.

Research Question 3: Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in student athletics as compared to first-time, full-time students who do not participate in student athletics?

Ho3: There is no significant difference in the 3-year graduation rate for first-time, full-time students who participate in student athletics as compared to first-time, full-time students who do not participate in student athletics.

Research Question 4: Is there a significant difference in the 3-year graduation rate for first-time, full-time students who identify as an ethnic minority as compared to first-time, full-time students who do not identify as an ethnic minority?

Ho4: There is no significant difference in the 3-year graduation rate for first-time, full-time students who identify as an ethnic minority as compared to first-time, full-time students who do not identify as an ethnic minority.

Research Question 5: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students who receive Pell grants as compared to first-time, full-time students

who do not receive Pell grants?

Ho5: There is no significant difference in the 3-year graduation rate for first-time, full-

time students who receive Pell grants as compared to first-time, full-time students

who do not receive Pell grants.

Research Question 6: Is there a significant difference in the 3-year graduation rate for first-time,

full-time, female students as compared to first-time, full-time, male students?

Ho6: There is no significant difference in the 3-year graduation rate for first-time, full-

time, female students as compared to first-time, full-time, male students.

Research Question 7: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students with ACT English subscores of 17 or below or Compass writing

subscores of 76 or below as compared to first-time, full-time students with ACT English

subscores of 18 or above or Compass writing subscores of 77 or above?

Ho7: There is no significant difference in the 3-year graduation rate for first-time, full-

time students with ACT English subscores of 17 or below or Compass writing

subscores of 76 or below as compared to first-time, full-time students with ACT

English subscores of 18 or above or Compass writing subscores of 77 or above.

Research Question 8: Is there a significant difference in the 3-year graduation rate for first-time,

full-time students with ACT reading subscores of 18 or below or Compass reading

subscores of 82 or below as compared to first-time, full-time students with ACT reading

subscores of 19 or above or Compass reading subscores of 83 or above?

Ho8: There is no significant difference in the 3-year graduation rate for first-time, full-time students with ACT reading subscores of 18 or below or Compass reading subscores of 82 or below as compared to first-time, full-time students with ACT reading subscores of 19 or above or Compass reading subscores of 83 or above.

Research Question 9: Is there a significant difference in the 3-year graduation rate for first-time, full-time students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to first-time, full-time students with ACT math subscores of 19 or above or Compass algebra scores of 38 or above?

Ho9: There is no significant difference in the 3-year graduation rate for first-time, full-time students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to first-time, full-time students with ACT math subscores of 19 or above or Compass algebra scores of 38 or above.

Research Question 10: Is there a significant relationship between the number of selected practices (service learning, study abroad, and student athletics) first-time, full-time students participated in and the percentage of first-time, full-time students graduating within 3 years?

Ho10: There is no significant relationship between the number of selected practices (service learning, study abroad, and student athletics) first-time, full-time students participated in and the percentage of first-time, full-time students graduating within 3 years.

Research Question 11: To what extent does participation in selected practices (service learning, study abroad, and student athletics), students' ethnicity, Pell recipiency, remediation

needs as determined by ACT and Compass subscores, and gender predict graduation of first-time, full-time students within 3 years?

Ho11: Participation in selected practices (service learning, study abroad, and student athletics), students' ethnicity, Pell recipiency, remediation needs as determined by ACT and Compass subscores, and gender does not predict graduation of first-time, full-time students within 3 years to a statistically significant extent.

Instrumentation

Data were collected from the Student Information System at the community college. The Student Information System is a digital information collection and storage repository that is used by each of TBR's community colleges and colleges of applied technology. For this study, information requested was first-time, full-time student enrollment data for Fall 2010, 2011, and 2012, and graduation status for the same students as of Spring 2013, 2014, and 2015. Additional necessary information included academic histories for each student as well as ACT or Compass subscores, ethnicity, Pell grant recipiency, and gender.

Population

This study's population was first-time, full-time freshmen who were enrolled at the community college in Fall 2010, 2011, or 2012 and were pursuing associate of arts (AA) or associate of science (AS) degrees. The 3-year completion date for each incoming class of first-time freshmen was Spring 2013, 2014, or 2015, respectively. The community college enrolled a total of 3,111 first-time, full-time freshmen in the Fall 2010, 2011, and 2012 semesters, based on study data from the college's Office of Institutional Effectiveness. More than half were pursuing applied science degrees, workforce certificates, or degrees other than AA or AS degrees, and therefore were not included in this study. A total of 1,362 students were working toward AA or

AS degrees, and 398 of them completed their AA or AS degrees within three years. The 3-year completion rate for this specific group of students was 29.22%, more than 12 percentage points higher than the community college's 17% completion rate for all full-time students (College Completion, 2013).

Data Collection

I requested and received approval for this research from my dissertation committee and then submitted the proposal to the Internal Review Boards (IRBs) of both the community college and East Tennessee State University. Upon receiving all necessary approvals, I requested Banner student information system data from the community college's Vice President of Institutional Effectiveness. The specific requested information included ethnicity, Pell grant recipiency, gender, ACT or Compass subscores, status as student athletes, enrollment in specific study abroad courses, and enrollment in the service learning SERV 1010 course for each first-time, full-time student who enrolled in the Fall 2010, 2011, and 2012 semesters. Also requested was a snapshot of three academic years later to show the degree completion status for each of the same students as of the Spring 2013, 2014, and 2015 semesters. Anonymity of student data was assured because the data were stripped of all identifying information. Also, data were accessible via a limited-access, password-protected folder on the college's secure internal server.

Data Analysis

For each incoming class of first-time, full-time, AA/AS degree-seeking freshmen in Fall 2010, 2011, and 2012, I analyzed data from their respective projected 3-year completion dates to determine which students actually completed their degrees within the 3-year time frame. I then assigned the students to one or more of three groups. The first group included students who enrolled in the SERV 1010 service-learning course. I examined the class lists from each section

and then grouped the information from the students who were first-time, full-time freshmen in Fall 2010, 2011, or 2012. I duplicated this process for students who participated in study abroad courses and for students who were involved in the official college-sponsored student athletics of men's basketball, women's basketball, baseball, and softball. I reviewed these students' involvement in multiple HIPs, 3-year completion rates, ethnicity, Pell grant recipiency, gender, and ACT or Compass subscores, and I analyzed the data to ascertain whether relationships exist using logistical regression.

The research questions were analyzed using inferential statistical methods. Research Questions 1-10 were addressed by using a series of chi square analyses, and Research Question 11 was addressed by using logistic regression. Each null hypothesis was tested at the .05 level of significance via the Statistical Program for Social Sciences (SPSS) program.

Chapter Summary

Chapter 3 provided information on the research methodology, including research questions, population, and plans for data collection and analysis. Chapter 4 will contain data analysis and interpretations. Chapter 5 will contain a summary of the findings, conclusions and implications regarding the findings, and recommendations for further study.

CHAPTER 4

RESULTS

Many community college administrators have implemented high-impact practices (HIPs) in an attempt to bolster students' academic success and on-time degree completion. Although community colleges are considered 2-year institutions, many students require more than two years to complete their degrees; in fact, three years is the average (National Center for Education Statistics, n.d.). Contributing to this degree completion window may be students' feelings of a lack of true impact from students' academic work (Wohlgemuth et al., 2006). HIPs, particularly those identified by Kuh (2008), may serve to counteract this disconnect. The purpose of this study was to investigate possible associations between a community college's 3-year graduation rate for first-time, full-time, degree-seeking students and the predictor variables of service learning, study abroad, and student athletics. Also considered were the demographic variables of gender, ethnicity, Pell grant recipiency, and ACT or Compass subscores in English/writing, reading, and math/algebra.

This study's population consisted of 1,362 first-time, full-time students who enrolled in Fall 2010, 2011, and 2012 in pursuit of associate of arts (AA) or associate of science (AS) degrees at a nine-campus community college in eastern Tennessee. Although 3,111 first-time, full-time freshmen enrolled in those three semesters, more than half were pursuing workforce certificates or applied science credentials, not university-transfer degrees, and therefore were excluded from this study. The population of 1,362 students was sorted into categories of degree completers and non-completers. Completers finished their AA/AS degrees within three academic years, or by Spring 2013, 2014, and 2015, respectively, per incoming cohort. Non-completers required more than three academic years to complete their degrees or withdrew for other reasons.

The population comprised 398 completers (29.22%) and 964 non-completers (70.78%). Data were housed in the community college's Student Information System database.

Eleven research questions were developed for this study, and a corresponding null hypothesis for each was tested. Chi Square tests were used to assess the existence of associations between each variable and AA/AS degree completion within three academic years. Logistic regression was used to determine the effects of the predictor variables upon 3-year degree completion. The research questions, null hypotheses, and data analyses follow.

Research Question 1

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who enroll in service learning as compared to first-time, full-time students who do not enroll in service learning?

Ho1: There is no significant difference in the 3-year graduation rate for first-time, full-time students who enroll in service learning as compared to first-time, full-time students who do not enroll in service learning.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for students who enrolled in SERV 1010 and students who did not, χ^2 (1, N=1,362) = 4.96, p = .03, Cramer's V = .06. Therefore, the null hypothesis was rejected. Students in this study who enrolled in SERV 1010 were nearly three times more likely to complete their degrees within three academic years than their peers who did not enroll in SERV 1010. Of the 12 students who enrolled in SERV 1010, nine students (75%) completed degrees within three years. Of the 1,350 students who did not enroll in SERV 1010, 389 students (28.81%) completed degrees within three years. The overall 3-year completion rate was 29.22%.

Research Question 2

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in study abroad as compared to first-time, full-time students who do not participate in study abroad?

Ho2: There is no significant difference in the 3-year graduation rate for first-time, full-time students who participate in study abroad as compared to first-time, full-time students who do not participate in study abroad.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for students who participated in study abroad and students who did not, χ^2 (1, N=1,362) = 10.80, p = .001, Cramer's V = .089. Therefore, the null hypothesis was rejected. Students in this study who participated in study abroad were almost twice as likely to complete their degrees within three academic years than their peers who did not participate in study abroad. Of the 40 students who participated in study abroad, 21 students (52.5%) completed degrees within three years. Of the 1,322 students who did not participate in study abroad, 377 students (28.52%) completed degrees within three years. The overall 3-year completion rate was 29.22%.

Research Question 3

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in student athletics as compared to first-time, full-time students who do not participate in student athletics?

Ho3: There is no significant difference in the 3-year graduation rate for first-time, full-time students who participate in student athletics as compared to first-time, full-time students who do not participate in student athletics.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for student athletes and non-athletes, χ^2 (1, N=1,362) = 13.03, $p < .001$, Cramer's V = .098. Therefore, the null hypothesis was rejected. Students in this study who participated in student athletics were almost twice as likely to complete their degrees within three academic years than their peers who were not student athletes. Of the 55 student athletes, 28 (50.91%) completed degrees within three years. Of the 1,307 non-athletes, 370 students (28.31%) completed degrees within three years. The overall 3-year completion rate was 29.22%.

Men's basketball players had the highest rate of 3-year degree completion at 75%, followed by women's basketball players at 73.33%, softball players at 44.44%, and baseball players at 37.04%. Table 1 indicates the frequencies and associated percentages of student-athlete degree completers and non-completers by sport.

Table 1

Sports Played by Student-Athlete Completers and Non-Completers

Sport	Completers		Non-completers		Total	
	N	%	N	%	N	%
Men's basketball	3	75.0	1	25.0	4	100.0
Women's basketball	11	73.33	4	26.67	15	100.0
Softball	4	44.44	5	55.56	9	100.0
Baseball	<u>10</u>	37.04	<u>17</u>	62.96	<u>27</u>	100.0
Total	28		27		55	

Of the 28 student athletes who completed AA or AS degrees within three years, 11 were women's basketball players, 10 were baseball players, four were softball players, and three were men's basketball players. Women's basketball players and baseball players accounted for 75% of the overall number of student athletes who completed degrees within three years. Women's basketball players composed the largest number of degree completers, and their completion rate was second highest. Baseball players accounted for the second largest number of overall completers, although their completion rate was by far the lowest among the four sports.

Research Question 4

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who identify as an ethnic minority as compared to first-time, full-time students who do not identify as an ethnic minority?

Ho4: There is no significant difference in the 3-year graduation rate for first-time, full-time students who identify as an ethnic minority as compared to first-time, full-time students who do not identify as an ethnic minority.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was not a significant difference in the 3-year completion rate for students who identified as an ethnic minority and students who did not, χ^2 (1, N=1,362) = .05, p = .83, Cramer's V = .006. Therefore, the null hypothesis was retained. Students in this study who identified as an ethnic minority were no more or less likely to complete their degrees within three academic years than their peers who did not identify as an ethnic minority. Of the 113 students who identified as an ethnic minority, 32 students (28.32%) completed degrees within three years. Of the 1,249 students who did not identify as an ethnic minority, 366 students (29.30%) completed degrees within three years. The overall 3-year completion rate was 29.22%.

Student records revealed the population was divided into eight ethnicity options: American Indian, Asian, black or African American, Hispanic, native Hawaiian or other Pacific islander, two or more races, unknown, and white. Twelve of the degree completers and 37 of the overall student population did not identify their ethnicity, so their ethnicity was recorded in their student records as "unknown." Because these students of unknown ethnicity did not specifically identify as being an ethnic minority, they were assigned to the category of students who did not identify as an ethnic minority, per the wording of the research question.

Research Question 5

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who receive Pell grants as compared to first-time, full-time students who do not receive Pell grants?

Ho5: There is no significant difference in the 3-year graduation rate for first-time, full-time students who receive Pell grants as compared to first-time, full-time students who do not receive Pell grants.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for students who received Pell grants and students who did not, χ^2 (1, N=1,362) = 16.017, $p < .001$, Cramer's $V =$ .108. Therefore, the null hypothesis was rejected. Students in this study who received Pell grants were significantly less likely to complete their degrees within three academic years than their peers who did not receive Pell grants. More than 57% of the population received Pell grants. Of the 781 students who received Pell grants, 195 students (24.97%) completed degrees within three years. Of the 581 students who did not receive Pell grants, 203 students (34.94%) completed degrees within three years. The overall 3-year completion rate was 29.22%.

Research Question 6

Is there a significant difference in the 3-year graduation rate for first-time, full-time, female students as compared to first-time, full-time, male students?

Ho6: There is no significant difference in the 3-year graduation rate for first-time, full-time, female students as compared to first-time, full-time, male students.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for women and men, χ^2 (1, N=1,362) = 18.765, p < .001, Cramer's V = .117. Therefore, the null hypothesis was rejected. Female students were significantly more likely to complete their degrees within three academic years than their male peers. The overall population comprised 728 females and 634 males. Of the 728 women, 249 (34.2%) completed degrees within three years. Of the 634 men, 149 (23.5%) completed degrees within three years. The difference between completion rates for women and men was more than 10 percentage points. The overall 3-year completion rate was 29.22%.

Research Question 7

Is there a significant difference in the 3-year graduation rate for first-time, full-time students with ACT English subscores of 17 or below or Compass writing subscores of 76 or below as compared to first-time, full-time students with ACT English subscores of 18 or above or Compass writing subscores of 77 or above?

Ho7: There is no significant difference in the 3-year graduation rate for first-time, full-time students with ACT English subscores of 17 or below or Compass writing subscores of 76 or below as compared to first-time, full-time students with ACT English subscores of 18 or above or Compass writing subscores of 77 or above.

Most applicants to the community college submitted composite ACT scores and subscores. However, 150 applicants submitted scores from the Compass exam, which is required of applicants who are 21 years or older, hold a state high school equivalency certificate, or have not completed the ACT exam within the last three years before application to the college. Each student's subscores from the ACT and Compass exams are used to determine if the student's academic skills are strong enough for college-level courses or if the student needs to complete learning support classes as well. The college relies on the ACT English subscore and its Compass equivalent, the writing subscore, to assign students who need extra help in this subject area to learning support classes. Ten students did not have ACT English or Compass writing subscores on record in the college's student information system. Therefore, the subscores for 1,352 students were considered for evaluation under this research question and null hypothesis.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for students with ACT English subscores of 17 or below or Compass writing subscores of 76 or below as compared to their peers with ACT English subscores of 18 or above or Compass writing subscores of 77 or above, χ^2 (1, N=1,352) = 65.236, $p < .001$, Cramer's V = .22. Therefore, the null hypothesis was rejected. Students whose subscores funneled them to developmental writing classes were nearly three times less likely to complete their degrees within three academic years than their peers whose subscores permitted them to begin college-level writing and English courses right away. The population of 1,352 comprised 1,010 students whose writing or English subscores were high enough to bypass learning support and 342 students who were required to take learning support classes. Of the 1,010 students whose subscores were high enough, 353 (34.95%) completed their degrees within three academic years. Of the 342 students whose

subscores were too low, only 41 (11.99%) completed their degrees within three academic years. The overall 3-year completion rate for all 1,362 students was 29.22%.

The ACT English subscore range for 3-year degree completers was 9 to 35 (N=367). The ACT English subscore range for non-completers was 6 to 35 (N=839). The Compass writing subscore range for 3-year degree completers was 4 to 99 (N=28). The Compass writing subscore range for non-completers was 6 to 99 (N=120). Tables 2 and 3 indicate the standard deviations and measures for central tendency for completers and non-completers who took either exam.

Table 2

ACT English Subscores for Completers and Non-Completers

Group	N	Mean	Median	Mode	Standard deviation	Range
Completers	367	22.6	22	21	4.261	9-35
Non-completers	839	19.96	20	21	4.675	6-35

Table 3

Compass Writing Subscores for Completers and Non-Completers

Group	N	Mean	Median	Mode	Standard deviation	Range
Completers	28	77.89	84	90	22.74	4-99
Non-completers	120	71.31	79	84	25.63	6-99

Research Question 8

Is there a significant difference in the 3-year graduation rate for first-time, full-time students with ACT reading subscores of 18 or below or Compass reading subscores of 82 or below as compared to first-time, full-time students with ACT reading subscores of 19 or above or Compass reading subscores of 83 or above?

Ho8: There is no significant difference in the 3-year graduation rate for first-time, full-time students with ACT reading subscores of 18 or below or Compass reading subscores of 82 or below as compared to first-time, full-time students with ACT reading subscores of 19 or above or Compass reading subscores of 83 or above.

Each student's reading subscores from the ACT and Compass exams were used to determine if the student's reading skills were strong enough for college-level courses or if the student needed to complete learning support classes. The college relies on reading subscores from the ACT and Compass exams to assign students who need extra help in reading to learning support classes. Ten students did not have reading subscores on record in the college's student information system. Therefore, the subscores for 1,352 students were considered for evaluation under this research question and null hypothesis.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for students with ACT reading subscores of 18 or below or Compass reading subscores of 82 or below as compared to their peers with ACT reading subscores of 19 or above or Compass reading subscores of 83 or above, χ^2 (1, N=1,352) = 48.961, $p < .001$, Cramer's V = .193. Therefore, the null hypothesis was rejected. Students whose subscores routed them to developmental reading classes were almost three times less likely to complete their degrees within three academic years

than their peers whose subscores permitted them to begin college-level courses right away. The population of 1,352 comprised 1,041 students whose reading subscores were high enough to bypass learning support and 311 students who were required to take learning support classes. Of the 1,041 students whose subscores were high enough, 352 (33.81%) completed their degrees within three academic years. Of the 311 students whose subscores were too low, only 42 (13.5%) completed their degrees within three academic years. The overall 3-year completion rate for all 1,362 students was 29.22%.

The ACT reading subscore range for 3-year degree completers was 11 to 35 (N=367). The ACT reading subscore range for non-completers was 7 to 36 (N=839). The Compass reading subscore range for 3-year degree completers was 63 to 99 (N=27). The Compass reading subscore range for non-completers was 49 to 99 (N=120). Tables 4 and 5 indicate the standard deviations and measures for central tendency for completers and non-completers who took either exam.

Table 4

ACT Reading Subscores for Completers and Non-Completers

Group	N	Mean	Median	Mode	Standard deviation	Range
Completers	367	23.07	22	21	4.4	11-35
Non-completers	839	21.08	21	19	4.79	7-36

Table 5

Compass Reading Subscores for Completers and Non-Completers

Group	N	Mean	Median	Mode	Standard deviation	Range
Completers	27	90.26	94	97	9.41	63-99
Non-completers	120	86.47	90	94	10.6	49-99

Research Question 9

Is there a significant difference in the 3-year graduation rate for first-time, full-time students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to first-time, full-time students with ACT math subscores of 19 or above or Compass algebra scores of 38 or above?

Ho9: There is no significant difference in the 3-year graduation rate for first-time, full-time students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to first-time, full-time students with ACT math subscores of 19 or above or Compass algebra scores of 38 or above.

Each student's math subscores from the ACT and Compass exams were used to determine if the student's math skills were strong enough for college-level courses or if the student needed to complete learning support classes. The college relies on math subscores from the ACT and Compass exams to assign students who need extra help in math to learning support classes. Nineteen students did not have math subscores on record in the college's student information system. Therefore, the subscores for 1,343 students were considered for evaluation under this research question and null hypothesis.

A two-way contingency table analysis was used to evaluate the null hypothesis. The results indicated there was a significant difference in the 3-year completion rate for students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to their peers with ACT math subscores of 19 or above or Compass algebra subscores of 38 or above, χ^2 (1, N=1,343) = 63.586, $p < .001$, Cramer's V = .218. Therefore, the null hypothesis was rejected. Students whose subscores routed them to developmental math classes were significantly less likely to complete their degrees within three academic years than their peers whose subscores permitted them to begin college-level courses right away. The population of 1,343 comprised 675 students whose math or algebra subscores were high enough to bypass learning support and 668 students who were required to take learning support classes. Of the 675 students whose subscores were high enough, 264 (39.11%) completed their degrees within three academic years. Of the 668 students whose subscores were too low, 129 (19.31%) completed their degrees within three academic years. The overall 3-year completion rate for all 1,362 students was 29.22%.

The ACT math subscore range for 3-year degree completers was 14 to 34 (N=367). The ACT math subscore range for non-completers was 11 to 34 (N=839). The Compass algebra subscore range for 3-year degree completers was 10 to 98 (N=27). The Compass algebra subscore range for non-completers was 10 to 73 (N=111). Tables 6 and 7 indicate the standard deviations and measures for central tendency for completers and non-completers who took either exam.

Table 6

ACT Math Subscores for Completers and Non-Completers

Group	N	Mean	Median	Mode	Standard deviation	Range
Completers	367	20.87	20	20	3.62	14-34
Non-completers	839	19.03	18	16	3.62	11-34

Table 7

Compass Algebra Subscores for Completers and Non-Completers

Group	N	Mean	Median	Mode	Standard deviation	Range
Completers	27	33.07	25	10	24.62	10-98
Non-completers	111	26.07	23	23	13.14	10-73

Research Question 10

Is there a significant relationship between the number of selected practices (service learning, study abroad, and student athletics) first-time, full-time students participated in and the percentage of first-time, full-time students graduating within 3 years?

Ho10: There is no significant relationship between the number of selected practices (service learning, study abroad, and student athletics) first-time, full-time students participated in and the percentage of first-time, full-time students graduating within 3 years.

No students in this study's population participated in more than one selected practice. Therefore, it is not possible to determine if a significant relationship exists between the number of selected practices students participate in and the 3-year completion percentage.

Of the 398 degree completers, 58 students (14.57%) participated in a selected practice. Nine of them enrolled in SERV 1010, 21 participated in study abroad, and 28 were student athletes, as illustrated in Table 8. Of the overall population of 1,362 students, 106 (7.78%) participated in a selected practice. Twelve of them enrolled in SERV 1010, 29 participated in study abroad, and 55 were student athletes. Of the 106 participants, 58 (54.72%) completed their degrees within three academic years. Of the 1,256 students who did not participate in a selected practice, 343 (27.31%) completed their degrees within three academic years. The overall 3-year completion rate for all 1,362 students was 29.22%.

Table 8

Degree Completers and Participation in Selected Practices

Selected Practice	Number of Degree Completers Who Participated	Number of Participants from the Overall Population	Percentage
Service Learning	9	12	75%
Study Abroad	21	29	72.41%
Student Athletics	28	55	50.91%
Total	58	106	54.72%

Research Question 11

To what extent do participation in selected practices (service learning, study abroad, and student athletics), students' ethnicity, Pell recipiency, remediation needs as determined by ACT and Compass subscores, and gender predict graduation of first-time, full-time students within 3 years?

Ho11: Participation in selected practices (service learning, study abroad, and student athletics), students' ethnicity, Pell recipiency, remediation needs as determined by ACT and Compass subscores, and gender do not predict graduation of first-time, full-time students within 3 years to a statistically significant extent.

Multiple linear regression models provided estimates of the effects of the predictor variables on the dependent variable, degree completion within 3 years. Data from 22 students excluded at least one ACT or Compass subscore, and data for those subjects were removed from consideration for this research question. Therefore, the population for this research question was 1,340. Predictor values were entered into the linear regression model and tested using backward elimination. SPSS provided two models, one that included all predictor variables and one that removed ethnicity, which lacked statistical significance. The remaining predictor values' intercorrelations were tested for multicollinearity to identify redundancies that could create overfit. Table 9 shows the resulting collinearity diagnostics for the predictor variables.

Table 9

Collinearity Diagnostics for Predictor Variables

Dimension	Eigen-value	Index	Constant	Gender	Service Learning	Study Abroad	Student Athletics	Pell Recipiency	English/Writing Subscores	Reading Subscores	Math Subscores
1	4.482	1.000	.00	.01	.00	.00	.00	.01	.01	.01	.01
2	1.016	2.100	.00	.01	.31	.25	.35	.00	.00	.00	.00
3	1.003	2.114	.00	.00	.59	.32	.06	.00	.00	.00	.00
4	.922	2.205	.00	.01	.05	.38	.57	.00	.00	.00	.00
5	.575	2.792	.00	.01	.02	.00	.00	.39	.01	.01	.23
6	.531	2.905	.00	.77	.01	.04	.01	.06	.01	.01	.01
7	.272	4.062	.01	.01	.00	.00	.00	.21	.09	.12	.72
8	.118	6.175	.00	.01	.00	.00	.00	.00	.71	.71	.01
9	.081	7.439	.98	.17	.01	.00	.01	.32	.17	.15	.00

A stepwise multiple linear regression was then performed. The linear combination of predictor variables was significantly related to 3-year completion, $F(8, 1331) = 20.74, p < .001$, Cramer's $V = .06$, as shown in Table 10.

Table 10

Stepwise Multiple Linear Regression on Predictor Variables

Variable	R	R^2	R^2 Adjusted	Change in R^2	B	SE	β	T
Constant					.130	.036		3.613
Gender	.118	.014	.013	.014	-.104	.024	-.114	-4.333
Service Learning	.061	.004	.003	.004	.359	.125	.074	2.860
Study Abroad	.085	.007	.006	.007	.190	.070	.070	2.710
Student Athletics	.099	.010	.009	.010	.252	.062	.105	4.048
Pell Recipiency	.100	.010	.009	.010	-.052	.025	-.056	-2.110
English/ Writing Subscores	.222	.049	.049	.049	.121	.033	.115	3.671
Reading Subscores	.188	.035	.035	.035	.083	.033	.076	2.536
Math Subscores	.215	.046	.045	.046	.130	.026	.144	4.984

The beta weights signified the influences of the predictor variables on the overall prediction of 3-year degree completion. According the beta weights, the greatest influences were math subscores, English/writing subscores, participation in student athletics, reading subscores, participation in service learning, study abroad, Pell recipiency, and gender. Positive beta weights indicated positive associations between the predictor variables and 3-year completion, therefore highlighting variables that tend to predict 3-year completion. Negative beta weights specified inverse associations between the predictor variables and 3-year completion, therefore pointing out variables that tend to predict non-completion of degrees within three years. Positive associations existed between 3-year completion and the variables of math subscores, English/writing subscores, participation in student athletics, reading subscores, participation in service learning, and study abroad. Negative associations existed between 3-year completion and the variables of gender and Pell recipiency.

Chapter Summary

Chapter 4 presented analysis for 11 research questions. All data were derived from the community college's Student Information System database. Findings included significant differences in the 3-year graduation rate for students who participated in service learning, study abroad, or student athletics, as well as for students who did not receive Pell grants, were female, and had standardized test subscores high enough for the students to enroll in college-level courses without completing remediation first. Chapter 5 will contain a summary of the findings, conclusions and implications regarding the findings, and recommendations for further study.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS FOR PRACTICE, AND

RECOMMENDATIONS FOR FURTHER STUDY

Summary of the Study

Many community college administrators have implemented high-impact practices

identified by Kuh (2008) to provide meaningful academic connections for students, therefore

encouraging students to remain committed to completing their degrees on time. Community

college students often require more than two years to complete their degrees, and that is partially

attributable to developmental skill requirements and the relatively high proportion of students

who attend part-time, for fewer than 12 credit hours per semester (Attewell et al., 2006). The

typical community college student requires three years to complete a degree, based on research

from the Integrated Postsecondary Education Data System (IPEDS) regarding "the number

completing their program within 150 percent of normal time to completion" (National Center for

Education Statistics, n.d.). Kuh's (2008) HIPs addressed student engagement, but other factors

may prevent on-time degree completion. For example, students with deficient core academic

skills based on ACT or Compass subscores must improve their skills before taking very many

substantive courses. More than 50% of first-time community college students are required to take

non-credit remedial courses to improve their competencies in English, reading, and mathematics

before they are allowed to enroll in many college-level courses that actually count toward degree

completion (Attewell et al., 2006). Other factors that can affect students' tendencies to finish

their degrees on time include ethnicity (Muir, 2015), Pell Grant recipiency (Ma & Baum, 2015),

and gender (Melendez, 2015).

The purpose of this study was to examine the associations between first-time, full-time, degree-seeking students' 3-year completion rates, involvement in HIPs, and the variables of ethnicity, Pell Grant recipiency, gender, and ACT or Compass subscores in English/writing, reading, and math/algebra. This study's population was first-time, full-time freshmen who enrolled at the community college in Fall 2010, 2011, or 2012 in pursuit of associate of arts (AA) or associate of science (AS) degrees. The 3-year completion date for each incoming class was Spring 2013, 2014, or 2015, respectively. The number of students who were pursuing AA or AS degrees was 1,362, and 398 of them completed their degrees within three years. Data were retrieved from the community college's Student Information System, a database of student records and academic histories. In addition to enrollment dates, information studied included a snapshot of each student's degree completion status at each cohort's projected 3-year completion date as well as gender, ethnicity, Pell Grant recipiency, and ACT or Compass subscores in three areas. Students who participated in service learning, study abroad, or student athletics were identified as such and studied in their respective groups. The goal of the study was to assess existing relationships between HIPs and 3-year degree completion while factoring in demographic variables, a worthwhile goal given that the Tennessee Board of Regents, which oversees this community college, has implemented HIPs at many of its institutions (TBR, n.d.-d).

Conclusions

Analysis of data found that three practices and five demographic variables held statistically significant associations with 3-year degree completion.

Research Question 1

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in service learning as compared to first-time, full-time students who do not participate in service learning?

Participation in service learning was assessed by enrollment in the community college's SERV 1010 course. SERV 1010 was in the process of being revived and rebuilt between 2011 and 2013, a fact that may have depressed the enrollment numbers for the course then. Students who enrolled in SERV 1010 tended to complete their degrees within three years at a higher rate than those who did not enroll in SERV 1010. Specifically, 75% of SERV 1010 students completed degrees within three years, compared to 28.81% of students who did not take SERV 1010. Existing literature on service learning confirms the tendency toward academic success for involved students. Students who participate in student engagement-focused activities such as service learning tend to have higher grades (Taggart & Crisp, 2011). Non-traditional community college students – typically, those age 25 or over – benefit from service learning because it helps them connect classroom learning to real-world application (Largent, 2013). Students who participate in service learning tend to be committed to finishing their degrees on time (Reed et al., 2015). Reed et al. (2015) also noted that service learning students tend to persist into their second semesters at a higher rate than students who participated in other HIPs. The effects of service learning appear to go beyond academic success. Service learning students are more satisfied with their college lives, and they are more independent, confident, and emotionally balanced than their peers who bypass service learning (Elliott, 2009). Additionally, service learning can boost students' levels of social consciousness and awareness of issues affecting their own communities, and it can raise their capabilities for empathy and compassion

(Rockenbach et al., 2014). Many more studies on the impact of service learning on university students have been done than studies on community college students; therefore, further research specifically on 2-year institutions is recommended.

Research Question 2

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in study abroad as compared to first-time, full-time students who do not participate in study abroad?

Participation in study abroad was determined by enrollment in specific sections of courses ranging from music to biology to business. The specific sections were for students participating in study abroad experiences in locations such as Belize, England, and Barbados. Students who engaged in study abroad experiences were significantly more likely to finish their academic degrees within three years than their peers who did not engage in study abroad. More than half of the students who participated in study abroad completed their degrees within three years, while 28.52% of students who avoided study abroad finished within three years. Gates (2014) noted that more and more students were participating in short-term study abroad of one semester or less. Community college students are more likely than students at 4-year universities to undertake short-term study abroad, perhaps due to lower cost and smaller time commitment (Raby, 2008; Sinclair, 2014). Students may develop endurance and resiliency through study abroad, and those characteristics may help students stay in college and finish their degrees on time. Passarelli and Kolb (2012) identified a set of affective, perceptual, symbolic, and behavioral complexities that developed in students who engaged in study abroad. Such students become open to new experiences and appreciate people's differences, acknowledge different points of view, assimilate new experiences into their existing mindsets, and become more

capable of accepting and practicing new concepts (Passarelli & Kolb, 2012). These four complexities may contribute to the overall concept of maturity, which may be a characteristic of students who finish their degrees on time. Much research exists on the benefits and experiences gained by students who participate in study abroad, but little research exists on the association between study abroad and community college completion rates. Therefore, further research is recommended.

Research Question 3

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who participate in student athletics as compared to first-time, full-time students who do not participate in student athletics?

Student athletes were identified by special flags on their records in the community college's Student Information System, and the special flags grouped them as players of men's basketball, women's basketball, softball, or baseball. More than half of the student athletes completed within three years, while 28.31% of non-athletes did the same. Overall, student athletes are more likely than their non-athlete peers to finish their academic degrees on time (Muir, 2015). Playing college athletics may prompt students to stay in college and finish their degrees, and engagement in student athletics may lead to academic success (Mendoza et al., 2012). Intrusive advising and strictly scheduled study time implemented by coaches emphasize the importance of academics and provide student athletes with structure and leadership (Storch & Ohlson, 2009). The smaller size of community colleges allows for additional academic focus on student athletes, whose academic success validates athletics on the community college level (Horton, 2009, 2015). Far more research has focused on university athletics, so additional research on student athletics and community college completion is warranted.

Research Question 4

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who identify as an ethnic minority as compared to first-time, full-time students who do not identify as an ethnic minority?

Results indicated no significant difference in the 3-year degree completion rate for students who identified as an ethnic minority and those who did not. Entering students identified their race or ethnicity on their applications, with choices of American Indian, Asian, black or African American, Hispanic, native Hawaiian or other Pacific islander, two or more races, unknown, and white. Overall, community college students who identified as African American, Hispanic, Asian, or white tended to have increasing completion rates from 2000 to 2010, with students of Asian descent leading the way (Spangler & Slate, 2015). Muir (2015) found that Hispanic and Asian students were the most likely to finish their academic degrees, and that students of those two ethnicities along with their white peers were more likely to stay enrolled in college. However, African American students may be least likely of all to complete their degrees (Lotkowski et al., 2004). Little research exists on the completion rates of ethnic minority students as a whole, and much research on African American students' completion tendencies appears to be dated. Furthermore, much of the existing research focuses on ethnic minorities at 4-year universities, not at community colleges. Finally, little research exists on reasons for low completion rates for African American community college students. Additional research on individual ethnicities as well as aggregate groups at the community college level is warranted.

Research Question 5

Is there a significant difference in the 3-year graduation rate for first-time, full-time students who receive Pell grants as compared to first-time, full-time students who do not receive Pell grants?

Results indicated a significant difference in the 3-year degree completion rate for students who received Pell grants and those who did not. Students who received tuition funding by Pell grants were significantly less likely to complete their degrees within three academic years. Pell grant recipiency is an indicator of a student's socioeconomic status and the financial background of a student's family, and it combines with other financial factors to tend to predict degree completion (Ma & Baum, 2015). Students who receive any sort of tuition assistance for financial, non-academic reasons tend to have depressed retention rates (Fike & Fike, 2008). Students who receive Pell grants, which are based on financial need, tend not to complete their degrees (Ma & Baum, 2015). Pell grants may flag students who are less likely to succeed; even students who earned good grades but also received Pell grants were less likely to stay in college (Mendoza et al., 2012). It is evident, therefore, that institutions with large numbers of Pell grant recipients, such as community colleges, do not have relatively high completion rates (Morrison, 2012). Additional research on reasons that Pell grants affect community college completion rates is justified.

Research Question 6

Is there a significant difference in the 3-year graduation rate for first-time, full-time, female students as compared to first-time, full-time, male students?

Results analysis indicated a significant difference in the 3-year completion rate for female students and male students. Women were significantly more likely to attain their academic

degrees within three academic years than men. This finding echoed research from the National

Center for Education Statistics (2014) that asserted higher completion rates within 150% of

normal 2-year time for men than women. Involvement in student athletics, which is not an HIP

identified by Kuh (2008), tends to positively affect men's academic success rates (Muir, 2015).

However, playing collegiate sports may not provide enough of a boost to propel men's

completion rates to match women's completion rates (Horton, 2015). Melendez (2015) suggests

that female students may simply be more focused on academics. Much research on this topic

focuses on 4-year universities and 2-year colleges in urban or suburban settings. In Tennessee,

many community colleges are in rural environments, and the dearth of existing literature on this

topic at such institutions justifies additional research.

Research Question 7

Is there a significant difference in the 3-year graduation rate for first-time, full-time

students with ACT English subscores of 17 or below or Compass writing subscores of 76 or

below as compared to first-time, full-time students with ACT English subscores of 18 or above

or Compass writing subscores of 77 or above?

Results indicated a significant difference in the 3-year completion rate for students with

ACT English subscores of 17 or below or Compass writing subscores of 76 or below as

compared to their classmates with ACT English subscores of 18 or above or Compass writing

subscores of 77 or above. Students who were routed to remedial English or writing classes were

significantly less likely to finish academic degrees within three years than their peers who

bypassed learning support and were able to enroll in college-level English or writing classes

immediately. Nationally, less than 10% of 2-year college students who are required to complete

remedial courses finish their degrees within three years (Complete College America, 2012).

Schnee (2014) suggested better and more precise advisement for students who require

remediation as a way to help them understand how long remediation might take and how

developmental classes might delay degree completion. Little research exists on community

college student success specifically in developmental English or writing classes, so further

research is warranted.

Research Question 8

Is there a significant difference in the 3-year graduation rate for first-time, full-time

students with ACT reading subscores of 18 or below or Compass reading subscores of 82 or

below as compared to first-time, full-time students with ACT reading subscores of 19 or above

or Compass reading subscores of 83 or above?

Results indicated a significant difference in the 3-year completion rate for students with

ACT reading subscores of 18 or below or Compass reading subscores of 82 or below as

compared to their classmates with ACT reading subscores of 19 or above or Compass reading

subscores of 83 or above. Students who were placed into developmental reading classes were

less likely to complete their degrees than their peers who bypassed learning support for reading.

The completion rate for those who were not placed in remedial reading classes was more than

double the rate for their counterparts who were placed in such classes. Students may find

frustration in developmental reading classes when they are required to read materials that are

uninteresting to them or when they are presented with reading materials that are beyond their

abilities (Chambers Cantrell et al., 2013). Developmental reading students may find less

frustration and greater success with instructors who use more than one method to teach reading

skills (Lavonier, 2016). Overall, students who are placed into remedial reading classes may find

themselves unable or unwilling to raise their reading skills, derailing their progress toward on-

time degree completion (Complete College America, 2012). Much research exists on teaching styles for remedial reading classes, but little research can be found on developmental reading success from students' perspective. Additional research is warranted.

Research Question 9

Is there a significant difference in the 3-year graduation rate for first-time, full-time students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to first-time, full-time students with ACT math subscores of 19 or above or Compass algebra scores of 38 or above?

Results indicated a significant difference in the 3-year completion rate for students with ACT math subscores of 18 or below or Compass algebra subscores of 37 or below as compared to their peers with ACT math subscores of 19 or above or Compass algebra subscores of 38 or above. Students placed in developmental math classes were significantly less likely to complete academic degrees within three years than their counterparts who bypassed learning support in math. Almost half of the first-time, full-time, degree-seeking freshmen in this study were placed in remedial math classes. Previous research confirmed that students who had appropriate math competencies found greater success in college – essentially, that math skills predict overall academic success (Attewell et al., 2006). Bremer et al. (2013) found that students whose subscores allowed them to avoid math remediation had higher tendencies to stay in college, make better grades, and complete their degrees, suggesting that many developmental math students may become so frustrated with remediation that they stop out or drop out of college altogether. Further research on community college students' approach to and experiences in math remediation is warranted.

Research Question 10

Is there a significant relationship between the number of selected practices (service learning, study abroad, and student athletics) first-time, full-time students participated in and the percentage of first-time, full-time students graduating within 3 years?

The answer to this research question remains unknown, because no students in the study's population of completers did more than one selected practice. Consequently, the existence of a significant relationship between involvement in multiple practices and 3-year completion at this community college is neither confirmed nor refuted. Because this research question remains unanswered, further research on a broader or different student population is justified.

Research Question 11

To what extent does participation in selected practices (service learning, study abroad, and student athletics), students' ethnicity, Pell recipiency, remediation needs as determined by ACT and Compass subscores, and gender predict graduation of first-time, full-time students within 3 years?

A series of logistic regression models indicated mixed results on the influences of the variables. The variables with the greatest influence to predict 3-year completion were math subscores, English/writing subscores, student athletics, reading subscores, service learning, study abroad, Pell recipiency, and gender. Ethnicity was not a statistically significant variable. Of these, the variables with positive associations to 3-year degree completion were, in descending order, math subscores, English/writing subscores, student athletics, reading subscores, service learning, and study abroad. Students who earned ACT or Compass subject subscores high enough to avoid remedial math, English/writing, and reading were more likely to complete their

degrees within three years, as were students who participated in collegiate athletics, service learning, and study abroad. The variables with negative associations to 3-year degree completion were gender and Pell recipiency, indicating that male students and students who received Pell grants were less likely to complete their degrees within three years.

<p align="center">*Implications for Practice*</p>

This study found that community college students who participated in the HIPs of service learning and study abroad were more likely to complete their degrees within 3 academic years. Student athletes were also more likely to finish their degrees within three years. Furthermore, female students and those who did not receive Pell grants were more likely to complete within three years, and those tendencies matched existing data on those two groups. Of interest to administrators may be that ethnicity had no significant effect on completion. Finally, the study confirmed that students who earned low ACT or Compass subscores in English/writing, reading, and math/algebra tended not to complete their degrees.

High Impact Practices

Students who were engaged in HIPs, including service learning and study abroad, or deeply involved in extracurricular activities such as student athletics were more likely to complete their degrees within three years. First, students who participated in the service learning course at the community college were more likely to finish their academic credentials; in fact, 75% of SERV 1010 students completed their degrees within three years. This study's findings on positive associations between 3-year completion and service learning are in concert with other research (Largent, 2013; Reed et al., 2015; Taggart & Crisp, 2011) that found tendencies for higher grades, deeper understanding, and on-time degree completion for students who participated in service learning classes and projects. Second, students who participated in study

abroad were more likely to complete their degrees within three years. More than half of the students who were involved in study abroad finished their degrees within three years, compared to 28.52% of those who did not participate in study abroad. Support for the positive association between academic success and study abroad comes from Passarelli and Kolb (2012), who noted characteristics that can lead to maturity among students who participated in study abroad experiences. Those characteristics may lead to tenacity and ambition in students, pushing them to achieve their goals. Third, student athletes were more likely to finish degrees within three years. In each of the sports studied – men's basketball, women's basketball, softball, and baseball – this study found a completion rate higher than the rate for transfer-degree seeking students at large. The positive association between 3-year completion and student athletics is in line with other research (Mendoza et al., 2012; Muir, 2015; Storch & Olson, 2009) that found involvement in student athletics predicted academic success. Characteristics of student athletics that lead to 3-year degree completion may include intrusive advising by coaches, enforced academic tutoring by coaches, a spirit of community among team members, and close friendships formed by students who play alongside one another.

Demographic Variables

Most of the demographic variables studied showed positive associations with 3-year completion; however, one did not. This study found that ethnicity had no association with 3-year degree completion. However, substantial variations in the completion rates among different ethnic groups may explain the balance with non-minority completion rates (Lotowski, Robbins, & Noeth, 2004; Muir, 2015; Spangler & Slate, 2015). Next, the tendency of this community college's Pell grant recipients not to complete their degrees on time was affirmed by Ma and Baum (2015), whose research indicated Pell grant recipiency as one of multiple financial factors

that tend to predict completion. Female students tended to complete their degrees on time at a higher rate than male students did, a finding that is in line with research from Melendez (2015) and the National Center for Education Statistics (2014). Students who placed into remedial classes, whether for skills in writing, reading, or math, had lower tendencies toward 3-year degree completion, confirming existing research (Attewell et al., 2006; Chambers Cantrell et al., 2013; Complete College America, 2012; Schnee, 2014). Data were insufficient to determine if students who pursued any combination of student athletics, service learning, and study abroad had higher academic success rates; no students who completed their degrees within three years participated in more than one practice. Finally, this study found both positive and negative associations between the predictor variables and 3-year completion. The variables with positive associations to 3-year completion were service learning, study abroad, student athletics, and ACT or Compass subscores in math/algebra, English/writing, and reading high enough to permit students to enroll directly in college-level courses. The variables with negative associations to 3-year completion were gender and Pell grant recipiency, indicating that males and students who received Pell grants were less likely to complete their degrees within three years. Research on effects of multiple predictor variables is scarce. Much existing research (Acosta, North, & Avella, 2016; Belfield & Crosta, 2012; Buchmann & DiPrete, 2006; Horton, 2015) focuses on degree completion based on individual predictor variables rather than multiple predictor variables.

The community college is encouraged to consider adopting new strategies or expanding existing strategies to boost student engagement. Kuh's (2008) HIPs, while a thoughtful and highly regarded list that includes service learning and study abroad, may not be exhaustive. It is likely that other strategies, including involvement in student athletics (Mendoza et al., 2012;

Muir, 2015) and possibly even intramural sports, may deepen students' commitments to the college and their academic goals. Furthermore, the college is encouraged to increase its recruitment efforts of students who are already involved in or have tendencies toward service learning, study abroad, and student athletics; attracting students predisposed to HIP participation may result in an increased degree completion rate. Also, providing extra financial support and academic emphasis on service learning, study abroad, and student athletics may generate more attention and enthusiasm from students.

Additionally, the community college is encouraged to find new strategies or expand existing ones to bring students' core competencies up to college level. The college may well be able to reduce the number of students assigned to remedial classes by expanding access to existing summer bridge programs, which are series of intensive developmental writing, reading, and math classes designed to bring participants' competencies to college level. Wathington, Pretlow, and Barnett (2016) found that summer bridge participants tended to successfully pass their first college-level classes in writing, reading, and math. If summer bridge programs can increase students' competencies enough that they can bypass learning support classes, the students will be out of the swirl of remediation and in a group of peers with substantially greater tendencies to complete their degrees within three academic years.

In summary, the community college is encouraged to broaden existing high-impact measures to engage more students more deeply, thus helping them commit to the college through degree completion. Students identified as at-risk through a combination of predictor variables may be good candidates for not only intrusive advising but also intrusive engagement, possibly in the form of a first-year experience class, a cohort, or another variation of one of Kuh's (2008) HIPs. Current initiatives that appear to drive student engagement and, therefore, retention and

completion should be researched for effectiveness and modified as needed. Despite the benefits of implementing or reinforcing HIPs, offering HIPs across the community college's nine campuses remains a big challenge. It simply may not be feasible or realistic to actively engage every student, whether on-ground or online. Regardless, broadening opportunities for students to feel committed and ultimately complete their degrees on time may result in higher completion rates.

Recommendations for Further Research

Although this study focused on a single community college, the longitudinal data of student records increased the study's internal validity. Also, only first-time, full-time students who were pursuing associate of arts or associate of science degrees were included; students pursuing applied science degrees, workforce certificates, or other credentials were not studied. Therefore, results are not generalizable to other community colleges, whether in Tennessee or elsewhere. However, additional research is justified to examine completion trends based on predictor values.

Additional research recommended specifically for the community college in this study includes:

1. Study a different population of students to determine the likelihood and value of students engaging in more than one HIP. Although no degree completers in this study participated in multiple HIPs, analysis of data for first-time, full-time, transfer degree-seeking freshmen who enrolled in Fall 2013 and 2014 may provide completion information on students who were engaged in more than one practice.

2. Study populations of students at other community colleges governed by the Tennessee Board of Regents. If analysis of other institutions' data results in significantly higher or

lower 3-year completion rates using this research model's predictor variables, closer examination of the other institutions' practices may suggest new techniques to consider or examples to avoid.

3. Modify the current research model to investigate the associations between the same predictor variables and students pursuing applied science degrees, workforce certificates, and other credentials.

4. Investigate reasons that men's and women's basketball players have substantially higher degree completion rates than baseball and softball players.

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Roane State Community College Institutional Review Board Approval

Institutional Review Board Findings

Title of Project: High Impact Practices and Community College Completion Rates	
Name of Principle Investigator (PI): Matthew Waters	
Project Number: 201630	
Date of Approval: 6/21/2016	
TYPE OF REVIEW	
X	New
	Renewal
FINDINGS OF THE BOARD	
	Project is **EXEMPT** from IRB Review. The PI assumes responsibility for the protection of human subjects in this project.
X	Project has been approved through **EXPEDITED** Review.
	Project has undergone a **FULL** IRB Review and has been approved.
	Project does not comply with all of the requirements of 45 CFR 46. (Explanation attached.)
OFFICE USE ONLY **TO BE COMPLETED UNLESS "EXEMPT" FROM FULL REVIEW**	
Project Approved Until:	6/20/2017

APPENDIX B
East Tennessee State University Institutional Review Board Approval

Office for the Protection of Human Research Subjects • Box 70565 • Johnson City, Tennessee 37614-1707
Phone: (423) 439-6053 Fax: (423) 439-6060

IRB APPROVAL – Initial Expedited Review

July 22, 2016

Matthew Waters
8621 Wimbledon Dr.
Knoxville, TN 37923

Re: High Impact Practices and Community College Completion Rates
IRB#:c0716.15sw
ORSPA #:

The following items were reviewed and approved by an expedited process:
- new protocol submission xform, CV of PI, IRB approval letter from Roane State Community College, Letter from Registrar Roane State Community College, data points for spreadsheet

On **July 21, 2016**, a final approval was granted for a period not to exceed 12 months and will expire on **July 20, 2017**. The expedited approval of the study will be reported to the convened board on the next agenda.

The study has been granted a Waiver or Alteration of Informed Consent under category 45 CFR 46.116(d):

The research involves no more than minimal risk to the participants as the study is an analysis of retrospective data and no names are identified (and only student ID numbers are included to match data from year to year). The waiver or alteration will not adversely affect the rights and welfare of the subjects as the risk of loss of confidentiality is low; the PI will not have names of students, only ID numbers. The research could not practicably be carried out without the waiver or alteration as it would be impracticable to do the study if required to contact every possible student to be considered in the study (in the thousands). Providing participants additional pertinent information after participation is not appropriate as students will not be contacted; the study is a retrospective analysis only.

In addition, the ETSU IRB Chair made the following child determinations:

The IRB Chair determined that the study presents no more than minimal risk to children as it is a retrospective data analysis only; participants/students will not be contacted; and there is a low risk of loss of confidentiality.

Accredited Since December 2005

The IRB Chair determined that the requirement for parental permission is waived based on 45 CFR 46.116(d) as noted above.

The IRB Chair determined that the requirement for assent is waived or altered because all of the following are true:
The research involves no more than minimal risk to the participants as the study is retrospective data analysis only; and the risk of loss of confidentiality is low as the PI will not have names but will have student ID numbers only to match data from year to year. The waiver or alteration will NOT adversely affect the rights and welfare of the participants as the study is a retrospective data analysis only; and the risk of loss of confidentiality is low as the PI will not have names but will have student ID numbers only to match data from year to year. The research could not practicably be carried out without the waiver or alteration as this study could not be carried out if all parents had to provide permission and all participants had to provide consent given the large number of people and the fact that the data are retrospective. Providing participants additional pertinent information after participation is not appropriate as participants/students will not be contacted.

Projects involving Mountain States Health Alliance must also be approved by MSHA following IRB approval prior to initiating the study.

Unanticipated Problems Involving Risks to Subjects or Others must be reported to the IRB (and VA R&D if applicable) within 10 working days.

Proposed changes in approved research cannot be initiated without IRB review and approval. The only exception to this rule is that a change can be made prior to IRB approval when necessary to eliminate apparent immediate hazards to the research subjects [21 CFR 56.108 (a)(4)]. In such a case, the IRB must be promptly informed of the change following its implementation (within 10 working days) on Form 109 (www.etsu.edu/irb). The IRB will review the change to determine that it is consistent with ensuring the subject's continued welfare.

Sincerely,
Stacey Williams, Chair
ETSU Campus IRB

cc: Hal (William) Knight

APPENDIX C
Explanation of FERPA Exemption

Roane State
COMMUNITY COLLEGE

276 Patton Lane Harriman, TN 37748 (865) 882-4527 Fax (865) 882-4526

July 8, 2016

To Whom It May Concern:

Matthew Waters (E00385935) has made application through Roane State Community College's IRB and is granted access to student archival data from Fall 2010-Spring 2015. This data may include student identification numbers, for educational research purposes related to completion of his dissertation. Student identification numbers will not be included in drafts of his writing and will not be shared externally in any way for any reason. No other personally identifiable information will be available in the archival data shared with Mr. Waters.

Students' written consent for this data access is not required. Per FERPA, an exception to written consent exists when a school official, e.g., a professor conducting research, has a legitimate educational interest in the information. In this instance, Mr. Waters required access to student identification numbers to meet his research goal of tracking individual student progress across multiple academic years.

Congress has also recognized that scientifically valid educational research, including applied research, basic research, and field-initiated research, can provide parents, educators, students, researchers, policymakers, and the general public with reliable information about educational practices that improve academic achievement. Such research can also provide important information about the effectiveness of Federal and other education programs. See sections 102(20) and 111(b) of the Education Sciences Reform Act of 2002. In particular, academic accountability is a central focus of the No Child Left Behind Act of 2001, and high-quality research is one of the ways to show whether the achievement gap is closing. A key component of such research is the use of longitudinal studies in which individual student performance is evaluated over a period of time.

If I may be of further assistance, please do not hesitate to contact me at 865-354-3000, ext. 4364..

Sincerely,

Brenda Rector
Registrar

Roane ♦ Oak Ridge ♦ Scott ♦ Loudon ♦ Cumberland ♦ Campbell ♦ Knox (Center for Health Sciences)

VITA

MATTHEW HARMON WATERS

Education: East Tennessee State University, Johnson City, Tennessee; Doctor of
              Education in Educational Leadership, 2016

              University of Tennessee, Knoxville, Tennessee; Master of Science in
              Communication, 2000

              University of Tennessee, Knoxville, Tennessee; Bachelor of Science in
              Broadcasting, 1999

Professional Assistant Professor of Mass Communication and Television Station Manager,
Experience: Roane State Community College, Harriman, Tennessee, 2011-Present

              Academic Audit Team Member, Tennessee Board of Regents, for the
              Entertainment Technology program at Northeast State Community College,
              Bristol, Tennessee, 2016

              Volunteer Photographer, Roane County Animal Shelter, Rockwood,
              Tennessee, 2015-present

              Volunteer Photographer, Leadership Roane County, 2015-present

              Strategic Planning Committee Member, Roane State Community College,
              Harriman, Tennessee, 2015-present

              Academic Audit Team Member, Tennessee Board of Regents, for the
              Criminal Justice program at Tennessee State University, Nashville,
              Tennessee, 2015

              Mentor, Tennessee Achieves, mentoring students in Roane County,
              Tennessee, 2014-present

              Service Learning Committee Member, Roane State Community College,
              Harriman, Tennessee, 2014-present

              Student Learning Diversity Committee Member, Roane State Community
              College, Harriman, Tennessee, 2014-present

              Academic Misconduct and Plagiarism Committee Member, Roane State
              Community College, Harriman, Tennessee, 2014-present

              Graduate, Leadership Roane County, Class of 2014

Graduate, Paul Goldberg Leadership Institute, Roane State Community College, Harriman, Tennessee, Class of 2014

Broadcast Producer, Classroom Under the Sea, a 73-day underwater lecture series at Jules' Undersea Lodge, Key Largo, Florida, and presented by Roane State Community College, 2014

Senator or Alternate Senator, Roane State Community College Faculty Senate, Harriman, Tennessee, 2013-present

French Coordinator and Steering Committee Member, Roane State Academic Festival, Roane State Community College, Harriman, Tennessee, 2013-present

Commencement Committee Member, Roane State Community College, Harriman, Tennessee, 2013-present

Panelist at Annual Conference, Southeast Association of Telecommunications Officers and Advisers, Chattanooga, Tennessee, 2012

Television Commercial Producer, Comcast Spotlight, Knoxville, Tennessee, 2007-2011

Television Production and Promotion Manager, WMAK-TV, Knoxville, Tennessee, 2004-2007

Television Promotion Editor and Webmaster, WVLT-TV, Knoxville, Tennessee, 2001-2004

Television Promotion Producer, WWAY-TV, Wilmington, North Carolina, 2000-2001

Television Sports Videographer and Master Control Operator, WSFX-TV, Wilmington, North Carolina, 2000

Television Master Control Operator, WBXX-TV, Knoxville, Tennessee, 1998-2000