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A quantitative analysis of a mandatory student success course on first-time full-time student college academic progress and persistence

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**A quantitative analysis of a mandatory student success course on
first-time full-time student college academic progress and persistence**

by

Laurel Beth Klinkenberg

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Education (Educational Leadership)

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ABSTRACT

In recent years, community colleges have come into the spotlight nationally in terms of their potential to assist in the revitalization of the economy. This has resulted in an increased need for community colleges to understand more fully the factors that influence student persistence. The purpose of this quasi-experimental study was to investigate how participating in a student success course is related to student academic progress and persistence. The unit of analysis for this research was first-time full-time degree-seeking students who entered a midwestern community college in fall semesters 2011 or 2012. This study examined the relationships between student demographics such as age, gender, and race/ethnicity, as well as characteristics such as Pell grant eligibility, first-generation status, COMPASS cut scores, developmental education courses, and the student success course, and their academic progress and persistence to the subsequent spring. Academic progress was defined as earning a grade point average of 2.0 or better and completing 67% of credits attempted. The groups were compared using descriptive statistics of frequencies and cross-tabulations. This study employed hierarchical regression analyses to investigate what variables predict community college student academic progress and persistence. Quantitative analyses revealed that students who successfully completed the student success course have a higher level of academic progress and were more likely to persist than were students who did not participate in the student success course.

CHAPTER 1. INTRODUCTION

Community colleges are the Ellis Island of American education—a safe harbor from which Americans from all backgrounds can reach their educational goals and the nation can sustain its leadership in the global marketplace of ideas and commerce.

(National Commission on Community Colleges, 2008, p. 5)

Community colleges, the first of which were founded nearly 100 years ago, are an American invention that put publicly funded higher education within reach for all who desire to learn, regardless of wealth, heritage, or previous academic experience (American Association of Community Colleges [AACC], 2012b). By offering a variety of programs in vocational education, transfer studies, and courses for personal enrichment, community colleges provide the opportunity for adults to reach their educational goal. Community colleges pride themselves in having an open access policy by which students may enroll with little advance commitment or planning. Community colleges' most attractive asset—the commitment to student *access*—must now be matched with a commitment to student *success* (National Commission on Community Colleges, 2008).

Each year, over 1,100 community colleges provide students and workers with critical skills to succeed in a 21st-century economy. Public 2-year colleges represent more than one fourth of all postsecondary educational institutions in the United States and enroll close to half of all undergraduate students in the United States (AACC, 2012a). Research has shown that almost half of students entering 2-year colleges and more than one fourth (28.5%) of students entering 4-year institutions leave at the end of their first year (Tinto, 1993). These statistics have not changed significantly over the past decades. Nearly 7 million students are registered for degree or certificate programs at community colleges, yet only 35 to 40% of them complete a 2- or 4-year degree or a certificate within 6 years (Bailey, 2009).

The United States needs to remain competitive in the global economy during the 21st century by providing the essential highly educated workforce (Lee, Edwards, Menson, & Rawls, 2011; Obama, 2009) at a time when there is a reduction in the growth of the labor force (Tierney, 2006). America's aging and highly educated workforce is moving into retirement, so the United States will need to rely on young Americans to increase its standing in the world. The prime age, consisting of a 25- to 54-year-old workforce, which increased by 35.1 million workers from 1980–2000 will add only 3 million workers through 2020 (Committee for Economic Development, May 2005, as cited in Tierney, 2006).

But the most recent figures from the Organisation for Economic Co-operation and Development (2011) showed that the United States does not rank first in the attainment of “tertiary” or postsecondary degrees among adults in developed countries. As the United States continues to decline in global competitiveness, so does its economic strength continue to weaken. While the nation struggles to strengthen the economy, the educational capacity of its citizens continues to decline. Globalization is driving changes in the economy, and the need for an educated workforce has never been greater. In order to increase its economic position in the world, it is important that the United States turn around this important trend (Lee et al., 2011).

Nearly two-thirds of all American jobs by 2018 will require some postsecondary education (AACC, 2012b). To maintain the nation's competitive edge, that workforce must have postsecondary education and training which means U.S. higher education institutions have to attract and retain students (Lotkowski, Robbins, & Noeth, 2004).

Recognizing this need, President Barack Obama has placed a strong emphasis on making America's community colleges stronger to ensure that they are indeed gateways to

economic prosperity and educational opportunities for millions of Americans each year. In the President Obama's speech on July 14, 2009, at Macomb Community College in Detroit, he stated that he wanted to increase graduation rates by 50% in under a decade. To help reach the president's college attainment goal, the Obama administration has called for an additional 5 million graduates from community colleges by 2020. Working in partnership with states and communities, community colleges are well suited to promote the dual goal of academic and on-the-job preparedness for the next generation of American workers. President Obama called the investment in community colleges crucial because "jobs requiring at least an associate degree are projected to grow twice as fast as jobs requiring no college experience" (para. 28) in coming years. Obama stated, "We will not fill those jobs—or keep those here in America—without the training offered by community colleges" (Obama, 2009, para. 28).

Obama's central goal, increasing college credentials, is also the primary focus of the College Board. The College Board, founded in 1900 and comprising 5,900 of the world's educational leaders, is a not-for-profit organization, mission-driven, and created to expand higher education. The College Board's Commission on Access, Admissions and Success in Higher Education (College Board, 2013) believes that American education is the nation's greatest strength and the most powerful force for advancing the common good.

In 2009, the College Board issued a call that by the year 2025, 55% of the nation's youth will earn a college degree. This call, commonly known as "55 by 25" (*College Completion Agenda 2011 Progress Report*; Lee et al., 2011), reflects the fact that a college degree has replaced the high school diploma as a mainstay for economic self-sufficiency and responsible citizenship (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). In addition, national

statistics indicate the difference in wages for high school graduates versus graduates receiving an associate's degree is over \$6,900 in annual earnings (Bureau of Labor Statistics, 2012).

Those factors have motivated more young adults to pursue a higher education as the job market has become increasingly competitive, requiring some kind of credential. In the United States, nearly two out of three high school students enroll in postsecondary education following high school graduation, which is one of the world's highest rates of higher education participation (Organisation for Economic Cooperation and Development, 2012). However, other nations have outperformed the U.S. higher education system in degree completion (Tierney, 2008). Cooper, Hersh, and O'Leary (2012) stated that in order

to position the United States for the future, substantial investments are needed in research, infrastructure, and education. The most important of these areas to address, however, is education, as the overwhelming economic evidence points to education—and human capital investments, generally—as the key drivers of economic competitiveness in the long term. (p. 3)

However, as of 2008, only 34.1% of full-time degree- or certificate-seeking students at 2-year colleges graduated in 4 years or less and 57.7% of full-time bachelor's degree-seeking students at 4-year colleges graduated in 6 years or less. With degree completion continuing to be a challenge, educational organizations strive to find new initiatives.

21st Century Initiatives

For the first time in U.S. history, the current generation of college-age Americans will be less educated than their parents' generation, yet workplaces require higher-level skills than ever before (AACC,2012a). One new 21st century initiative, with the overall goal to

educate an additional 5 million students with degrees, certificates, or other credentials by 2020, was launched by the AACC (2012b). This initiative was supported by the Bill & Melinda Gates Foundation, the Kresge Foundation, ACT, and the Educational Testing Service. The vision outlined by the 21st-Century Commission on the Future of Community Colleges stated: “Students educational experiences are *redesigned*, institutional roles are *reinvented*, and the system itself has been *reset* to meet the needs of students, their communities, and the nation” (AACC, 2012b, p. vi).

Achieving the Dream is another initiative, conceived in 2004 by the Lumina Foundation and other partner organizations, that strives to close achievement gaps. This national nonprofit organization, one of the nation’s most strategic and disciplined efforts to improve the success rates of students enrolling in America’s community colleges, helps 3.75 million community college students have a better chance of realizing greater economic opportunity and achieving their dreams. The vision of Achieving the Dream is “to lead the most comprehensive, evidence-based reform movement for community college student success in higher education history, resulting in significantly improved lives and greater global economic competitiveness for the United States” (Achieving the Dream, 2012a, para. 2).

Another 21st century initiative is led by the Center for Community College Student Engagement (CCCSE). The CCCSE has researched over 2 million community college students at over 800 colleges in 50 states, providing data and analysis about student engagement in community colleges. Colleges use this data to improve their programs and services for students.

In summary, institutions need to use existing data about best practices, continuing to investigate what interventions or strategies that improve student learning, persistence, and ultimately, achievement of their educational goals are effective on their own campuses. Retention strategies should identify and provide resources and support systems, identify and remove challenging barriers, and facilitate students' academic and social integration into their new environment—a college environment. Open admissions policies provide access for a diverse student body (Bailey, 2009); however, open access does not guarantee success. Many times community colleges are referred to as “revolving door” institutions (Derby & Smith, 2004). Concern about lack of student success, or in other words students walking back out the door, is not new. This study addressed the question: Does the participation in a student success course impact the number of students walking back out the door without being successful in attaining their educational goals?

Background of the Study

In recent years, increased public demand of educational institutional accountability to improve retention rates of first-year students has escalated. Pressure from various stakeholders, such as policymakers, parents, and students, has been coupled with mounting budget concerns. Walter Bumphus, president of the AACC, stated in 2012,

Now, there's a focus on accountability. . . . We were founded on the premise of being open-access institutions, but recently there's been a pivot to focus more on student success. There's a focus not just on having them transfer [to 4-year schools], but on getting them into the workforce. (Koebler, 2012, para. 2)

Higher education institutions have been challenged by this call for accountability, making it a key priority for all postsecondary institutions. By establishing first-year programming for

first-year students, institutions are attempting to address the issue of how to help students transition into their new environment. Marina and McGuire (2008) stated that “first-year-experience programs remain an essential part of ensuring the success of freshmen, promoting retention, and further developing the strength of American higher education” (p. 19).

First-year programming, a strategy used to impact retention, evolved out of the counseling movement in higher education. Orientation courses, one strategy used to make connections with students, originated from the student development theory of viewing students holistically. Students, through taking an orientation course, learn “skills” to cope as well as facets of institution and adjustment. These courses usually have been taught by student services personnel, who are one of the first contacts new students make when arriving on campus. Higher educational institutions have been attempting to make this needed connection with new students for decades.

First-year programming, in the form of an extended orientation, has been in practice for over 125 years. In 1888, Boston University offered one of the first orientation courses, and in 1911, Reed College offered the first for-credit orientation course, “The College Life Course.” The course was required for all freshmen and focused on adjusting and studying (Mamrick, 2005). The popularity of such courses grew during the early 20th century with more than one third of colleges and universities offering such courses. Later, the popularity of such courses fluctuated and eventually declined until the mid-to-late 1960s when higher education began to change. During those 60 years, institutions often placed the responsibility for determining how to be successful in the new college environment on the student.

First-year programs were revitalized in the 1970s when institutions realized students needed more help to be successful, as they were not navigating the transition on their own.

Colleges faced an “influx of diverse group of students whose needs were not being met by existing, piecemeal orientation initiatives” (Barefoot & Gardner, 1993, p. 142). The number of course offerings has since increased and research has found that such orientation efforts promote student persistence, retention, and better academic performance (Cuseo, 1997). In the late 1980s, Upcraft and Garner (1989) continued to make the case that colleges and universities need to address the challenges of serving an increasingly entering diverse student population.

In the fall of 2006, one midwestern community college decided to address the retention challenge by conducting a retention study. This study, called the Mandatory Placement Project for first-time, full-time, late-registering students, analyzed what strategies were effective for increasing retention (Emmerson, 2009). Six academic options were examined, and researched including: the College Experience course, study strategies, learning communities, college preparatory reading, college preparatory writing, and college preparatory math. No previous statistical analysis had been conducted on the efficacy of these options at this institution, which prompted Emmerson to examine the effectiveness and validity of mandatorily placing students into these environments. Emmerson reported that the College Experience course was the least selected overall and that participation was dominated by traditional-age White male students, which limited the generalization of this environment.

Current Study

After reviewing Emmerson’s (2009) results, this researcher determined further investigation into the effectiveness of the College Experience course was warranted; therefore, the focus of this study was to determine if a relationship exists between

participating in a student success course, College Experience (SDV 108), and academic progress and persistence. This study, conducted at Cardinal Community College (CCC; a pseudonym), examined the SDV 108 course in relation to student academic progress and persistence. Freshman student success courses, one type first-year programming initiative, focus on providing an educational roadmap and plan for students to navigate the campus during their first semester and beyond. The growing challenge is to gain understanding why students continue to use that revolving door.

Statement of the Problem

Student attrition is not a new development in higher education and, yet, a strong need still exists for research about what strategies are successful in addressing community college student persistence challenges. Research on persistence has been ongoing for decades, but little has been found to make an impact on increasing student persistence. Therefore, this study addressed student persistence in connection with the student success course, SDV 108. Researchers have identified and recommended a variety of positive retention strategies, continuing to include as an effective strategy the new-student orientation program (Braxton & McClendon, 2001–2002), which can be found in 95% of 4-year institutions (Pascarella & Terenzini, 2005). However, most research addressing integration is conducted at 4-year institutions such as with Levitz and Noel's (1990) study, which found that one third of each year's full-time 4-year college freshmen are not enrolled in that same institution for their second academic year.

The student success course, which has been called by many different titles, has been one of the most frequently researched courses “in the history of American higher education” (Cuseo, 1997, p. 3). Although there are an increasing number of research studies cited in the

literature, the results are mixed as to these courses' effectiveness. This could be due to the fact that each analysis is specific to the particular institution, student body, and program under study (Jamelske, 2009). Strategies to address student attrition must be carefully analyzed so that when a college is budgeting dollars, the effective programs, one of which has been the first-year experience, gain funding.

Discovering why students are leaving college is an ongoing challenge for most higher education institutions, but even more so for the community college. Hossler (2004) pointed out that attrition data on the community college level is difficult to research because of the heterogeneity of the student body and the differences in students' purposes for attending these schools. Community college students have unique characteristics and challenges that do not generalize easily to this type of institution. In 2003–04, students who enrolled in community colleges tended to be older—26% were age 24 or older—with 20% of that age group being independent and married with children, and 15% being independent, single parents (Horn & Nevill, 2006).

Community colleges have focused on increasing the rates at which community college students earn college credentials and transfer to baccalaureate institutions; however, the potential outcomes of a community college education are as varied as the students who attend, making graduation rates questionable measures of community college impact (Palmer, 1998). Community colleges are being held accountable in meeting the needs of this increasing diverse student population. Student enrollment decline has many financial consequences for the institution, as funding is partially based on the full-time equivalency (FTE) student count. Walter Bumphus, AACC president and CEO, stated that in these current economically challenging times, community colleges have more work to do with

fewer dollars and that is not a good recipe in the long term (as cited in Marcus, 2011). The reality is that community colleges often lack the institutional resources to support ongoing assessment and research efforts, which makes finding solutions extremely difficult.

Even more pronounced is the lack of quantitative research in regard to student retention that would validate strategies implemented at postsecondary institutions. At the community college, little research has been conducted that validates whether or not student success courses influence student persistence. The very survival of the community college depends on finding an answer to the question: Once students walk through the door, how are community colleges to keep them from walking back out the door before reaching their educational goals?

Purpose

The purpose of this quasi-experimental quantitative study was twofold: (a) to analyze the relationship among student demographics, college coursework, college performance, and academic progress, and (b) to analyze the relationship among student demographics, college coursework, college performance, and student persistence. This study examined a student success course, SDV 108, delivered at a multicampus community college. The SDV 108 course is a semester-long 1-credit course that was developed to facilitate students' transition into their new environment. This new course, previously offered with a slightly different curriculum, was designed to introduce students to college resources and services, explain expectations to students, and assist students in gaining maximum benefit from their college experience.

According to Goodman and Pascarella (2006),
 in order to estimate the true impact or value-added of first-year seminars, the
 influence on persistence that is attributable to actual participation (versus
 nonparticipation) in the seminar must be separated from the influence of the
 individual characteristics of the students. (p. 28)

This study provided an opportunity to analyze how participation in the student success course correlates with students' academic progress and persistence from fall to spring semester. Relationships of student participation in the course and how participation was related to academic progress and persistence were examined and reported. Further, academic progress and persistence were examined for student demographics. First-time, full-time students were defined as students who enrolled at this college without previous college credits (excluding college credits earned in high school) and were pursuing an Associate of Arts, Associate of Sciences, or an Associate of General Studies degree. The two groups investigated were Fall 2011 students who did not enroll in the student success course and Fall 2012 students who enrolled in the student success course with a further subdivision of the Fall 2012 group of students who successfully completed SDV 108 and students who did not successfully complete SDV 108.

Empirical research on the persistence of community college students is scarce. Examining the data to determine if students who take this success course are more likely to persist benefits community colleges in planning the future of this course. Gaining understanding by examining data can impact future funding and support for this class, SDV 108. This study adds to the growing literature on student outcomes associated with first-year interventions in higher education with regard to community college student academic

progress and persistence. The findings obtained from this study can be used to inform institutional decisions regarding a student success course.

Research Questions

The research questions that guided this study were:

1. What are the student demographics at a midwestern community college?
2. How do SDV 108 (College Experience course) students and non-SDV 108 students differ by age, gender, race/ethnicity, first-generation and Pell grant eligibility status, and COMPASS scores?
3. What is the difference in academic progress among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course?
4. What is the difference in persistence among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course?
5. To what extent, if any, do student demographics and college coursework predict academic progress? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework predict academic progress?
6. To what extent, if any, do student demographics, college coursework, and academic progress predict student persistence? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework and performance predict persistence?

Creswell (2009) stated, “The intent of using variables quantitatively will be either to relate variables . . . or to compare samples or group in terms of an outcome, commonly found in experiments (p. 117). Correlation research attempts to determine whether and to what degree, a relationship exists between/among two or more quantifiable (numerical) variables. When two variables are correlated, the relationship between those two variables can be used to predict the value of one variable for a participant if one knows that participant’s value on the other variable. Correlation implies prediction but not causation. Kerlinger (1979, as cited in Creswell 2009) stated that a theory is “a set of interrelated constructs (variables), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining natural phenomena” (p. 51). Astin’s (1993) I–E–O (input–environment–output) model served as the conceptual model for the study and was used to study and determine potential predictors of student academic performance and persistence.

Hypotheses

A hypothesis is presented for research questions 5 and 6. Research questions 1 through 4 did not require hypotheses because each is descriptive in nature. According to Creswell (2009), a null hypothesis makes a prediction that no relationship or no significant difference exists between groups on a variable. The traditional null hypothesis was used for the purpose of this study.

H₀1. None of the seven demographic input or environment variables of age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework predict academic progress.

H₀2. None of the seven demographic input or environment variables of age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework or college performance predict persistence.

Theoretical Framework

Over the past few decades researchers have designed a number of frameworks addressing student retention. However, much of the theoretical and empirical work on student retention has been based on traditional students at 4-year institutions. An exhaustive review and synthesizing of the literature about first-year seminars, including recommendations for future research, can be found in *How College Affects Students* (Pascarella & Terenzini, 2005). When the first volume of the book was published in 1991, too few research projects had been conducted to allow for a review; however, that had changed by 2005. A few of the major retention models, which were all developed based on traditional students at traditional residential institutions, are Tinto's (1975, 1987, 1993) theory of student departure, Astin's (1984) theory of involvement, and Bean's (1980) student attrition model. Further research is necessary to develop applicable retention theoretical frameworks that can guide higher institutions to incorporate effective strategies, especially at the community college level. The ongoing difficulty is translating the research and theory into effective practice (Tinto, 2006–2007).

No one theoretical perspective is comprehensive or adequate enough to account for the factors that influence student success at the community college (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). A theory or conceptual model that attempts to explain student departure from an institutional setting requires more than one theoretical orientation (Braxton, Hirschy, & McClendon, 2004). Two frameworks were used to guide this research

study: Rendón's (1994) validation theory and Van Maanen and Schein's (1979) organizational socialization theory.

Community colleges are seeking to understand why students are not navigating the transition to college life successfully. Given that students cannot graduate if they are not retained early on, student retention has remained one of the most analyzed outcomes in higher education.

Rendón (1994) found that students are more likely to persist if institutions help them be successful at negotiating the transition to college, they become involved in campus academic and social life, and they develop positive attitudes about their learning ability. Validation occurs when institutions reach out to students, with institutions not making the mistake of assuming students take the initiative to become engaged. Because validation is the key to transforming college students, higher education institutions are charged with taking an active role in its orchestration. Some underserved students, who have experienced past invalidation such as being called names, tend to experience a more difficult time in getting involved and learning the campus services (Rendón, 2006).

Rendón's (1994) validation theory takes an assets-based perspective to understanding student success by emphasizing students' strengths within the educational environment.

Specifically, validation includes six elements:

1. Validation is an enabling, confirming, and supportive process initiated by in- and out-of-class agents that foster academic and interpersonal development.
2. When validation is present, students feel capable of learning; they experience a feeling of self-worth and feel that they, and everything that they bring to the college experience, are accepted and recognized as valuable.

3. Like involvement, validation is a prerequisite to student development.
4. Validation can occur both in and out of class. In-class validating agents include faculty, classmates, lab instructors, and teaching assistants. Out-of-class validating agents can be significant others, family members, friends attending and not attending college, and college staff, including faculty who meet with students outside of class, counselors/advisors, coaches, tutors, teaching assistants, and resident advisors.
5. Validation suggests a developmental process. It is not an end in itself. The more students are validated, the richer the academic and interpersonal experience.
6. Validation is most effective when offered early on in the student's college experience, during the first year of college and during the first weeks of class. (pp. 44–45)

The second theory used to provide insight for this study is the organizational socialization theory, which historically has been defined as “the manner in which the experiences of people learning the ropes of a new organizational position, status, or role are structured for them by others within the organization” (Van Maanen, 1978, p. 19). This theory has been used in the work force to understand why employees do not stay at a job, focusing exclusively on the type of experiences employees (students) go through when starting a new job or in this case starting college. If successful, these experiences may foster the new employee's work identity (student's college identity) and connection to the organization (Ashforth & Saks, 1996; Bauer, Wolfe-Morrison, & Roberts-Callister, 1998).

London (1985) defined *organizational socialization* as:

the process by which an employee learns the values, norms, and required behaviors that permit participation as a member of the organization. This process may also mean relinquishing attitudes, values and behaviors that do not fit. Socialization establishes shared attitudes, habits, and values that encourage cooperation, integrity, and communication. (p. 20)

Those employees (students) who learn more are believed to experience greater success because they are cultivated to assume work roles, attitudes, behaviors, and knowledge considered important for organizational participation and successful adjustment (Bauer et al., 1998). This socialization process also can be applicable to the new college student in learning how to assume the role of a successful college student, learning the behaviors and gaining knowledge that is necessary for successful adjustment to the college environment.

This quantitative research is further framed through use of Astin's (1993) I-E-O model as the conceptual framework. Miles and Huberman (1994) defined a conceptual framework as a visual or written product, one that "explains, either graphically or in narrative form, the main things to be studied—the key factors, concepts, or variables—and the presumed relationships among them" (p. 18). This model of analysis provided a comprehensive picture of the demographic and pre-entry academic input variables, the environment variables of coursework, and the outputs of academic progress and persistence. Creswell (2009) suggested that the quantitative approach is best if the problem calls for the identification of factors that influence an outcome, the utility of an intervention, or gaining an understanding of the best predictors of the outcomes (p. 18). The conceptual framework

summarizes the major dependent and independent variables in the research and the relationship between them.

Significance of the Study

Retention is on the minds of all higher education personnel as the calls for accountability have increased. Research on persistence has been ongoing for decades, but little has been found to make an impact on increasing student persistence. Wild and Ebbers (2002) stated, “Most of this research [on retention] is based on traditional-age students in the residential settings of universities” (p. 504). A better understanding of successful community college retention strategies is needed. One widely used institutional response to address attrition and academic success is implementing first-year programming, which has been called by many names such as: freshman seminar, orientation course/program, or student success courses. The primary activity that institutions use to assist students in transitioning and adjusting to the college environment is through orientation programs (Perigo & Upcraft, 1990). First-year programming typically combines career advisement and decision-making with student survival topics like time management and academic skills such as test-taking (Cuseo 1997; Goodman & Pascarella 2006; Porter & Swing, 2006).

This quantitative study begins the building of a body of knowledge and contributes to research on the student success course and persistence, addressing the gap in the existing literature by exploring whether there are differences in academic progress and persistence between students who participated in the student success course and nonparticipating students from the same community college. This study increases the level of knowledge about the student success course and provides a foundation for further exploration of whether participating in different formats or lengths of student success courses impacts persistence.

The significance of this study is the addition to scholarly research and literature about the retention first-year programming strategy used at community colleges. Additionally, administrators at 2-year colleges can use the findings from the study to inform future decisions on strategies to impact the level of student persistence.

Operational Definitions

For the purpose of this study, the following operational definitions were used:

American Association of Community Colleges (AACC): the primary advocacy organization for community colleges at the national level, working closely with directors of state offices to inform and affect state policy (AACC, 2013).

ACT COMPASS[®]: Computer-adapted Placement Assessment and Support Services; a computer-adaptive college placement test that used by community colleges and is designed to determine at what academic level of math and English (reading and writing) a student is before beginning college coursework.

American College Test (ACT[®]): a national college admissions assessment examination that consists of subject area tests in English, mathematics, reading, and science. For the students in this study, the scores were used to determine academic placement in college-level English, mathematics, or reading (ACT, 2012).

Attainment: reaching a desired goal.

Attrition: a school's loss of students.

College Experience (SDV 108): A one semester student success course (see Appendix A to view course outline and objectives).

Degree/certificate-seeking students: Students enrolled in courses for credit that are recognized by the institution as seeking a degree or other formal award.

Ethnicity: Racial identity as defined by student at application.

First-generation students: students who are first in their family (self-reported in this study) to attend a postsecondary institution.

First-time student (undergraduate): A student with no prior postsecondary experience attending any institution for the first time at the undergraduate level; includes students enrolled in academic or occupational programs, as well as students enrolled in the fall term who attended college for the first time in the prior summer term and those who entered with advanced standing (college credits earned before graduation from high school).

First-year success course: Also referred to as First-Year Seminar, Freshman Seminar, First-Experience, Freshman Experience, University 101, Orientation to College, Strategies for Success, and College Success Course, and other terms, higher educational institutions use this course to assist students in their transition to college. The curricula vary, but generally they include topics such as study skills, time management, campus resources, and career exploration, to name a few.

Full-time student: Students who are enrolled for 12 or more credits hours in one semester.

Full-time student equivalency (FTE): full-time equivalent of students.

Grade point average (GPA): used by colleges to describe academic performance, this metric is calculated by dividing total number of grade points a student earned by the total number of credits attempted; a student's GPA can range from 0.0 to 4.0.

Integrated Postsecondary Education Data System (IPEDS): collects institution-level data from postsecondary institutions in the United States (50 states, the District of Columbia, and other U.S. jurisdictions).

Persistence: the “maintenance of continued enrollment for two or more semesters, specifically from fall term to spring term and/or completion of a degree, certificate or transfer to a four-year college” (Crawford, as cited in Wild & Ebbers, 2002, p. 13) or the act of remaining enrolled at an institution after completion of course work during the current semester and returning for the subsequent semester (Berkner, He, & Cataldi (2002). For this study, persistence referenced students who were enrolled from fall to spring term.

Retention: within semester course credits retained; CCC uses retention as course credit retention versus retention term-to-term (Emmerson, 2009).

Student success: Obtaining a grade of C or better for a course, as defined by CCC.

Student success course: Orientation courses that offer students an introduction to successful study habits, managing time, and how to be a student at college (Goldrick-Rab, 2010).

Title IV institution: an institution that has a written agreement with the U.S. Secretary of Education that allows the institution to participate in any of the Title IV federal student financial assistance programs (other than the State Student Incentive Grant and the National Early Intervention Scholarship and Partnership programs).

Limitations and Delimitations

The following limitations and delimitations applied to this study:

1. Students may attend a community college to gain job skills or to achieve personal goals, so they may have no intention of continuing beyond one semester. For the purposes of this study, intent to persist was defined by students self-reporting they were seeking a degree.

2. This study covered only fall-to-spring semester persistence.
3. This study did not control for students who stopped out after their first fall semester and returned at a later time, because this study only examined one fall semester to the subsequent spring semester.
4. First-year experience programs are as unique as the higher education institutions themselves and can't be duplicated easily, thus not allowing for easy generalizeability.
5. SDV 108 had a new curriculum starting Fall 2012 semester.
6. This study did not examine the lived experiences of the students who participated in the student success course, which may have given insight into the effectiveness of the course.
7. The target population was limited to first-time, full-time, degree-seeking community college students; therefore, students attending for other educational goals or part-time students were not included in this study.
8. Statistical inference might be questioned for a large urban community college where the student population has different demographics, as this study's results are from a multicampus institution, thus not providing the opportunity for generalization.

Summary

Today all higher educational institutions must be searching, and subsequently, finding answers that positively impact student retention. Community colleges are a major force in higher education, providing opportunities for students who would otherwise not have a postsecondary education option. However, with the very mission statement of the

community college, open access, a diverse student population walks through the door. This is a unique challenge for the community college as students attend this type of institution for a variety of reasons, not necessarily to obtain a 2-year credential. With increasing accountability, higher educational institutions are examining what strategies impact retention.

Focusing on academic progress and persistence, this research study attempted to identify whether or not a relationship existed between participating in the SDV 108 course and the dependent variables of academic progress and persistence. The study built upon prior research and adds to the knowledge about a strategy, a student success course, and how it impacts community college student academic progress and persistence. Further research is necessary to develop retention strategies that can guide and direct higher education administrators and personnel in making informed, data-driven decisions that impact student success.

CHAPTER 2. REVIEW OF THE LITERATURE

Introduction

This chapter focuses on the review of the relevant literature regarding student persistence. The review also provides a context for the study with a brief overview of community colleges and their students in the United States, measures of student success, retention theories, and the theoretical frameworks.

A review of the literature revealed numerous studies, theories, and publications on student success and retention. Despite the research and information available on retention, how to address attrition rates remains a major concern for higher education institutions as pressure for accountability increases from state legislatures, accrediting bodies, the federal government and the public. Braxton, Sullivan, and Johnson (1997) called the complicated set of factors that interact in influencing student and institutional performance the “student departure puzzle.”

Most research has focused on orientation programs at 4-year institution, leaving a major deficit remaining for investigation of first-year programming at the community college level (Zeidenberg, Jenkins, & Calcagno, 2007). The intent of this study was to address this gap, examining how a student success course impacts student academic progress and persistence at a midwestern community college. Student demographics, college coursework, and academic performance were investigated in relation to student persistence in this study. The literature review for the study was guided by the research questions and theoretical frameworks with the conceptual framework providing additional direction.

Overview of Community Colleges and Their Students

The community college offers a postsecondary education for those students who could not otherwise obtain a credential. Cohen and Brawer (2008) defined the community college as “any institution regionally accredited to award the associate of arts or the associate of science as its highest degree” (p. 5). Boggs (2011) stated that

from their early beginnings as junior colleges, 2-year institutions have been shaped from within by visionary leaders and policy makers and also by external forces, such as the Great Depression, World War II, the baby boomer generation, and the demands of industry for skilled workers. (p. 3)

Between the 1974–75 and 2006–07 academic years, the number of community colleges in the United States increased by 17%, to 1,045 institutions. The nature of community colleges and the characteristics and enrollment patterns of the students they serve makes the study of community colleges extremely challenging. Pascarella (1999), following an extensive review of research on community colleges, noted the complexity of this assertion and reinforced this contention. Pascarella (1999) stated that one cannot, however, afford to “operate in ignorance of the educational influence of a set of nearly 1,100 postsecondary institutions that educate almost 40 percent of our students” (p. 13).

Community college students comprise 35% of all postsecondary students in the United States. In the fall of 2006, over 6.2 million students were enrolled in community colleges across the country (Provasik & Planty, 2008). By 2009, the number had increased to 8 million students (AACC, 2012b) enrolled in 1,132 community colleges, which includes public, independent, and tribal community colleges, in the United States.

A review of the literature revealed that community college students have a set of distinguishing characteristics separating them from students attending 4-year colleges. Community college students tend to be nontraditional age, attend college part time, and have varying educational goals, one of which might be to not obtain a degree, offering an additional challenge when conducting research. Many community college students are commuters, have greater family responsibilities, and spend more time in the classroom with their college peers rather than socializing outside of school (Hagedorn, Maxwell, & Hampton, 2001). Beyond reaching the full-time student, other ongoing community college challenges are to reach the part-time students and address the needs of a more diverse student body walking through the door. Sixty percent of community college students are attending part time, with 50% of those students working full time and 33% working part time while attending college.

These distinguishing characteristics affect student persistence and have been a concern of all institutions for decades but even more today when the very life of the institution depends on helping students succeed. In fall 2011, Title IV (7,479 reporting) institutions enrolled 18.6 million undergraduate and 2.9 million graduate students. Of the 18.6 million undergraduates, 57% were enrolled in 4-year institutions, 41% in 2-year institutions, and 2% in less-than-2-year institutions. Scrivener and Coghlan (2011) reported only one third of all students who enter community colleges with the intent to earn a degree or certificate actually meet this goal within 6 years. Goldrick-Rab (2010) found that after 3 years just 16% of first-time community college students who began college in 2003 attained a credential of any kind and another 40% were still enrolled. Also noted was that completion rates improved when the timeframe increased to 6 years instead of 3 years, with 36%

community college students in 1995 earning a degree by 2001. Researchers questioned whether the reason students are not obtaining their educational degree or certificate attainment may be due to lack of financial resources, family or home obligations, or being underprepared to succeed at college level coursework.

Higher education institutions are challenged to find answers as to why students are not reaching their educational goals. Students may enter community colleges not only for the purpose of obtaining a degree or certificate, but also for enhancement of specific general job skills or for personal enrichment (Cofer & Somers, 2000; Derby & Smith, 2004). Many community colleges focus on recruiting students to their institution rather than how to retain students once they are enrolled, even though it costs more to recruit new students than it does to retain current students (Astin, 1993). In recent years, with budget cuts and an economic downturn, community colleges are facing the issue of how to increase retention. Finding strategies that impact student persistence may be the key for survival of the community college.

Measures of Student Success

College student persistence and retention have been investigated for decades, but little research has focused on community college students. Multiple definitions complicate the task when trying to substantiate evidence of student success. Student success in college has been measured by a variety of methods: course completion, within-semester completion, semester-to-semester completion, and most often, completion of a credential or graduation (Kuh, Kinzie, Buckley, Bridges, & Hayek 2007; McClenney & Marti, 2006). Most research has been conducted at 4-year residential institutions, but researchers argue that these findings are not relevant for the community college. A possible reason for the scarcity of community

college research is lack of agreement on how to define success, retention, and persistence.

Although all agree that student success is essential, defining success is not easily agreed upon. Rendón (2006) stated, “The traditional definition of student success is too narrow and needs to be expanded to the experiences of students in postsecondary learning environments of today” (p. 16).

The AACC (2013) defined successful students as those learners who identify, make a commitment to, and attain their educational goal. What becomes problematic with this definition is trying to track students who change their educational goal or students who do not know what their goals are in the first place. Carini, Hayek, Kuh, Kennedy, and Ouimet (2003) broadly defined student success as including “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and post-college performance” (p. 541).

Researchers continue to disagree as much on the definition of retention as they do on the definition of success. Claggett (1996) found a shift in the definition of retention when community colleges changed from the junior college model to a community learning center model. Most students are enrolled not only to seek an associate’s degree or transfer to pursue a baccalaureate degree, but have set other goals. An operational definition of student retention usually involves obtaining a degree or certificate and enrolling in consecutive semesters (Goel, 2002). Retention defined as keeping students until they graduate or as keeping students until they meet their educational goals is an indecisive definition.

Expanded definitions are needed to include students meeting their educational goals.

Generalizations about retention can be misleading because each school is unique in terms of

its academic emphasis and culture. Retention issues can be further complicated because of the necessity to understand students' educational goals in assessing whether leaving school is a negative or positive decision.

Sydow and Sandel (1998) offered yet another definition of retention as a student who is enrolled in a subsequent semester, completes two-thirds of the courses, and achieves at least a 2.0 GPA. This challenges the assumption that retention means earning a degree or certificate. Retention, as reported by Integrated Postsecondary Education Data System (2007), only measures first-year students who converted to second-year students.

Persistence rate is a measure of how many students return from the fall semester to the spring semester. The persistence rate is also cohesive with the “recruitment never ends” philosophy—in which persistence measures the conversion rate semester to semester for all years. The persistence rate can be a more accurate statistic that predicts what portion of the student body will continue attending and go on to graduate. Researchers have found that student persistence from the first year to the second year of college is predictive of eventual completion (Adelman, 2005).

Student persistence—and how to increase it—has been one of the most intensively studied topics in higher education research. As stated by Wild and Ebbers (2002), Crawford's (1999) definition of persistence is “maintenance of continued enrollment of two or more semesters, specifically from fall term to spring term and/or completion of a degree/certificate or transfer to a 4-year college (p. 505). Levitz and Noel (1990) found that “if students make it through that first year successfully, the chances that they will persist improve considerably” (p. 65).

The crucial issue for higher educational institutions has become how to address lack of persistence. Gaining an understanding of why students make a choice to stay or leave is an essential first step in addressing persistence issues. If colleges are losing students after the very first semester, why would institutions focus only on retention as defined by degree attainment?

For accreditation purposes and funding, community colleges are challenged to learn more about how to increase student persistence. Persistence studies tend to focus on institutional factors and programs that promote continuous student enrollment (Kuh et.al, 2007; Tinto, Goodsell-Love, & Russo, 1993). The Community College Survey of Student Engagement (CCSSE) has defined persistence as first-to-second-term persistence and first-year-to-second-year persistence. Only slightly more than half (52%) of first-time full-time college students in public community colleges are returning for their second year of college. Stated once again, survival of community colleges depends on finding the answer to the question: Once students walk through the door, how are educational institutions able to keep them from prematurely walking back out the door?

Retention Theories

Although a review of the literature revealed a wealth of research on student retention, that research has focused primarily on 4-year institutions. The most cited models include Tinto's (1975, 1987, 1993) student integration theory, Astin's (1984) theory of involvement, Bean's (1980) student attrition model, Bean and Metzner's (1985) nontraditional student attrition model, and Pascarella and Terenzini (1995) model.

Vincent Tinto (1975, 1993), a renowned retention researcher, formulated the student integration theory, which has been widely adopted and was based on Durkheim's (1951)

suicide theory. Durkheim developed the concept of social solidarity that describes the social ties, such as kinship, shared location, or religion, that bind a group of people together. He suggested that differences in social solidarity between the two groups corresponded to the differences in suicide rates. Durkheim believed suicide is more likely to occur when an individual is not sufficiently integrated into society (Hagedorn, 2006; Halpin, 1990; Tinto, 1993). Tinto (1975) described higher education as a social system having its own social structure and values, and withdrawal from college as much like dropping out of society in Durkheim's suicide theory. Tinto's (1975) theory suggests that it is the successful academic and social integration of the student into the institution that best predicts persistence.

Tinto (2005) viewed the early work on student retention as the "age of involvement." Involvement, or integration, into the institution, and more specifically early involvement during the critical first year of college, matters most. In the community college setting, a redefinition of what constitutes "involvement" is necessary, primarily because this nonresidential constituency usually works at a job at least part time and, consequently, finds it difficult to become involved in traditional campus activities. Previously, institutions attempted to increase student involvement with a variety of strategies that included extracurricular programs, extended orientation programs, or the freshman seminar.

Braxton et al. (1997) viewed Tinto's (1975) theory of student departure as one of the most influential in the study of college-student departure. Tinto's (1975) premise was that individual students possess pre-entry college characteristics, which contribute to their decision to persist or depart their institution. Four primary conditions Tinto (2009) considered as required for student success were: high expectations outlined for students, academic and social support, feedback for student work and progress, and student

involvement with peers and faculty. Grayson and Grayson (2003) found that these requirements do not apply to all students, as the findings were based on White, middle class-students living on a residential 4-year campus. Tinto (1993) posited that the ways in which students negotiate their transition to college are essential to their eventual integration and success and noted that “virtually all students experience some difficulty in making the transition to college” (p. 98). Tinto’s (1975) model cannot be generalized beyond traditional full-time undergraduate students (McCubbin, 2003). For example, Bean and Metzner (1985) contended that Tinto’s (1975) model did not explain attrition for the nontraditional, commuter, part-time student, which is often in the community college student profile.

Further, the basis of Astin’s (1984) theory of involvement is that students learn more when they are involved in both the academic and social aspects of the collegiate experience. According to Astin (1984, 1999), the quality and quantity of students’ involvement influences several educational outcomes including cognitive learning, satisfaction with the entire college experience, and increased rates of student retention. An involved student devotes considerable energy to academics, spends much time on campus, participates actively in student organizations and activities, and interacts often with faculty (Astin, 1984, p. 292). Importantly, the most persuasive types of involvement are “academic involvement, involvement with faculty, and involvement with student peer group” (Astin, 1996, p. 126).

In 1985, Bean and Metzner developed another model for examining nontraditional student attrition. In this model, they found four variables that affect dropout decisions, namely, background and defining variables, environmental variables, academic outcome and GPA, and intent to leave. This model can be seen as similar to Astin’s (1993) I–E–O conceptual model, which was formulated through his student involvement theory.

Theoretical Framework

Although this researcher acknowledges the validity of Tinto's (1975) work in formulating the retention theory of academic and social integration, his research applies to 4-year institutions. However, even though Tinto's (1975) theory has paradigmatic stature, empirical tests of his theory show mixed support (Braxton et al., 1997). Only one of Tinto's 13 propositions, student entry characteristics directly affects student persistence, has robust empirical affirmation. Researchers have criticized Tinto's (1975) theory because he did his research at a residential 4-year university where students did not face the challenges of the community college student population. Consequently, Rendón's (1994) validation theory and Van Maanen and Schein's (1979) organizational socialization theory provide a more robust framework for this study.

In a validation model, institutional agents, not students, are expected to take the first step to not only promote involvement, but also to affirm students as knowers and valuable members of the college learning community. There are two types of validation. Academic validation occurs when in- and out-of-class agents take action to assist students to "trust their innate capacity to learn and to acquire confidence in being a college student" (Rendón, 1994, p. 40). Interpersonal validation occurs when in- and out-of-class agents take action to foster students' personal development and social adjustment (Rendón, 1994). Validation theory poses that college faculty, counselors, and administrative staff take a proactive role in reaching out to students to affirm them as being capable of doing academic work and to support them in their academic endeavors and social adjustment. Rendón (1994) found that nontraditional students are more likely to become involved when others from the institution

invite their involvement, which places greater responsibility in the hands of higher education faculty and staff for engaging students in the college experience.

Institutions should focus on two critical phases that affect student retention: making the transition to college and making academic and social connections in college (Rendón, 1995). Transitions are not related to age; people face transitions throughout their lives.

Lau (2003) found that many students leave colleges and universities because institutions failed to create an environment, within and beyond the classroom, that is conducive to the student's learning and educational needs. Rendón (2002) stated "in- and out-of-class validation experiences are especially important with nontraditional student populations such as returning adults, low-income students, first-generation students, and many women and minoritized population students from working-class backgrounds" (p. 644). In the workforce, when adults experience transition, a "one-shot" orientation approach gives information to the employee by giving the facts and procedures on the first day, but that isn't entirely effective. The critical and necessary integration requires more time and organizational effort than a "one-shot" orientation for the person to be successful in his or her role.

Organizational socialization theory is the second framework that informed this study. In its most general sense, organizational socialization is the process by which an individual acquires the social knowledge and skills necessary to assume an organizational role (Van Maanen & Schein, 1978). The elements of an organizational socialization process, or what the new student learns, include task mastery, role clarification, acculturation, and social integration. As explained through a workplace model, new employment is a challenge for the newcomer who faces new situations and is in need of acquiring knowledge and skills.

The new student is similar to the new employee. When individuals join organizations, they must learn to understand and make sense of their new surroundings (Louis, 1980).

Organizational socialization is the process by which people “learn the ropes” of a particular organizational role. It can range from a quick trial-and-error method to a long process of education and apprenticeship (Van Maanen & Schein, 1979, p. 211). This process is based on a cognitive-learning process that emphasizes information and knowledge acquisition. Increasingly, researchers have recognized the important consequences of the socialization experiences of newcomers to the organization in terms of productivity and performance, attitudes, organizational commitment, and turnover (Cooper-Thomas & Anderson, 2006). Two recent meta-analyses of socialization research (Bauer et al., 2007; Saks, Uggerslev, & Fassina, 2007) analyzed the relationships among the variables of organizational socialization. These meta-analyses found that *how* newcomers learn during the socialization process has significant effects on their levels of job satisfaction, role clarity, commitment to the organization, and intention to quit (a prediction of retention). According to Saks et al. (2007), the Van Maanen and Schein (1979) theory defined socialization tactics as the ways in which the experiences of individuals in transition from one role to another are structured by others in the organization. Of all the organizational tactics studied, the socialization tactics were the strongest predictors of job satisfaction, commitment, and retention (Bauer, Bodner, Erodogan, Truxillo, & Tucker, 2007; Saks et al., 2007).

The socialization process involves learning and change (Fisher, 1986). Learning can be summarized by four categories: learning about the organization, learning to function in the work group, learning to do the job, and personal learning. This process can be generalized to an educational institution with the student success course addressing the four categories.

Learning about the organization, which is the community college, is important. Learning how to function in a work group can be compared with the necessity for students to learn how to communicate with instructors, staff, and peers. Learning how to “do the job” would compare with students needing to learn how to be a successful student. Personal learning is when students discover what type of learning and personality style they have and how, individually, they can determine how to be a successful student.

Change, the second part of the socialization process, can be distinguished among three distinct views by identifying socialization as a process of acquisition, development, and adjustment. Therefore, further study of the process of socialization from the newcomer’s (new student’s) perspective would contribute to the understanding of the experience of the socialization process.

Pascarella, Terenzini, and Wolfle (1986) defined new student orientation as a socialization tactic that colleges and universities use to socialize students to the new and unfamiliar organization. Information networks are necessary for the process of organizational socialization to take place and are useful because students can acquire and be comfortable with using that information. Students gain confidence in making decisions, and navigating the campus then becomes manageable.

Karp and Hughes (2008) found that students reported developing networks within the classroom. These information networks also are found to be avenues that help individuals acquire social ties, facilitating the transfer of institutional knowledge and procedures (Karp, Hughes, & O’Gara, 2008). Karp and Hughes’s research at two community colleges found that 70% of students reported feeling integrated on campus through these networks, where further knowledge about the institution and its procedures was acquired. The success course

offered the opportunity for students to meet a variety of staff members who then become an integral part of their information network.

Instructors become a main source for increasing networking benefits. Karp et al. (2008) stated that information networks can be developed through structured courses such as the student success course (p. 81). O’Gara, Karp, and Hughes (2009) found students felt connected and comfortable taking advantage of the support services discussed in a student success course. Three realized benefits for students who participate in information networking are: campus connections, social contacts, and personal resources (Karp et al., p. 12). The student success course is a one possible way to orient students to college, provide them with information about the college, and help them develop skills.

In summary, two theoretical models, Rendón’s (1994) validation theory and Van Maanen and Schein’s (1979) organizational socialization theory, were used to guide this research study. To conceptualize the variables and add direction for this study, Astin’s (1993) I–E–O model also was employed. The layering of theoretical and conceptual frameworks served as the foundation to analyze the effectiveness of student participation or lack of participation in the SDV 108 course in relation to academic progress and persistence.

Conceptual Framework

Alexander Astin (1993) proposed one of the most durable and influential college impact models, the I–E–O model. This conceptual model, which is used for this study, was formulated by Astin’s (1984) theory of involvement. The involvement theory, the foundation for the I–E–O model, posits that outcomes from the college experience are a result of student’s investment of time and energy in the college experience. Pre-enrollment characteristics may mediate students’ ability to invest deeply in that experience.

Astin (1993) is well known for his I–E–O college impact model, which provided the framework for this study. For this study, the “I,” or input variables, were student demographics of gender, age, race/ethnicity, Pell grant eligibility, and first-generation student status. The pre-enrollment academic data were test scores. If the student record reported ACT scores, a crosswalk was used to interpret those scores into COMPASS scores. The “E,” or environment variables, was college coursework (SDV 108) or developmental coursework. The “O,” or outcomes, were the dependent variables: college performance (fall GPA and percentage of credits attempted/credits earned) and student persistence. Successful academic progress, as defined by CCC, was students receiving a fall GPA of 2.0 or better and completing 67% of credits attempted. According to the I–E–O model, inputs shape outputs, directly and indirectly, through involvement with the institutional environment (Astin, 1993).

In addition to retention theories, the literature has identified several “retention variables” that have been strong predictors of retention, including, but not limited to, high school GPA, admissions test scores, gender, and race (Astin, Sax, & Korn, 1997; Tinto, 1975). The most common variables studied have been retention, graduation, GPA, and self-reported student satisfaction (Jamelske, 2009). In the attempt to evaluate the relationship of a retention strategy, such as a student success course, and student academic progress and persistence, it is important to determine what student demographics have proven to impact retention and to control for those demographics.

First-Year Programming

What happens in the first year of college has a major impact on student success (Glass & Garrett, 1995; Tinto, 1993). Helping first-year students adjust and persist along their educational journey is essential for higher education institutions. “Over the past two

decades, literally thousands of first-year programs have been created with increased retention rates as the primary, if not the sole, desired outcome” (Barefoot, 2000, p. 13). Where once there were only a handful of “innovative” first-year programs, today there are hundreds of programs designed to address different aspects of the first-year experience (Tinto et al., 1993). When the issue of student retention first appeared on the higher educational radar screen, the student’s individual attributes, skills, and motivation were thought to impact their level of retention (Tinto, 2006–2007). In other words, students failed, not the institution. However, this view changed in the 1960s when institutions shifted from the idea that students were on their own to succeed to an awareness that the role of the environment factors into students’ decisions to stay or leave (Tinto, 1987). Many, but not all, students enter college neither prepared nor experienced enough to make decisions that impact their success. This first year, a critical point in the life of a college student, represents the beginning of academic and social integration between the student and other members of the institution.

The driving force for the modern first-year experience movement began in the 1970s, gained momentum in the 1980s, and has flourished ever since. The creation of a first-year seminar course by the University of South Carolina in 1972, known as University 101, was a significant factor in the first-year movement. John Gardner, who was serving as its faculty director from 1974–1999, is considered a leading expert. Gardner examined the benefits of first-term seminars and proposed curriculum designs for such courses that are still popular today (Schnell, Seashore, & Doetkott, 2003). These programs have become “fully ingrained in the consciousness of American higher education” (Upcraft, Gardner, & Barefoot, 2005, p. 2). ACT reported that the freshman seminar was one of the top three most effective retention practices in higher education (Lotkowski et al., 2004) and found that first-year students who

took the first-year seminar course graduated at a higher rate than did those who did not take the course.

Barefoot and Fidler (1992) found the most common freshmen seminar types can be classified into the following five basic categories: academic seminars on various topics, academic seminars with generally uniform academic content, basic study skills seminars, extended orientation seminars, and professional seminars. Barefoot and Fidler used the following terms for the extended orientation seminar: freshman extended orientation, college survival, college transition, and student success course. Regardless of the title of a first-term course, the goal is always the same: to help students adjust and persist (Tinto, 1993).

The first-year seminar continues to be the most researched innovation in higher education. In 2009, The National Resource Center for The First-Year Experience and Students in Transition conducted a web-based national survey of first-year programming in American higher education to chief academic officers, chief executive officers, or chief student affairs at all regionally accredited colleges and universities ($N = 2,519$). According to the survey, the full-semester extended orientation course, the most commonly used form of first-term courses, is offered at an estimated 62% of institutions reporting. Out of the 1,019 surveys completed (a 40% response rate), 890 (84.8%) institutions responded that they offered first-year seminars with 41.1% reporting extended orientation seminar as the primary first-year seminar type. When asked to identify three primary course objectives of their first-year seminar the following were reported: 42.4% of institutions reported campus resources as a seminar topic, followed by study skills (39.8%), and academic planning/advising (35.7%). Nearly three in five (59.6%) of 2-year institutions reported study skills as a first-year seminar course topic, and 40.6% of 4-year institutions reported critical thinking as a course topic.

Campus resources were listed as a course topic for over half (51.7%) of public institutions that responded.

Another survey, which was conducted by CCCSE, found the following statistics in regard to the student success course as self-reported by students: 69% said the course helped them develop skills to become better students, 60% indicated the course helped them improve their study skills, 60% said the course helped them understand their academic strengths and weaknesses, 56% said the course helped them develop a written plan for how and when they could achieve their academic goals, 70% believed the course helped them learn about college policies and deadlines that affected them, and 74% said the course helped them learn about college services available to help students succeed in their courses. Judging by the percentages in student responses, the student success course appears to be a benefit for a majority of students.

For the purpose of this study, the SDV 108 success course was considered a freshmen extended orientation seminar, or first-year seminar. The goals, as stated in the syllabus were to: connect students to faculty, peers, and college resources; introduce students to the college's expectations and environment; and provide students with strategies that promote and encourage student success in college and life (Appendix A).

Most students enroll in an orientation course during their first semester of college. The first-year experience course typically extends beyond basic orientation content, beyond what is needed to know during their first days on campus. However, the challenge when researching the first-year experience is that the courses vary considerably as to the target group, content, and length of course. The most common element found was that seminars have a regular scheduled meeting time for new students.

First-year programs were developed and implemented to provide students with the information necessary to adjust to the academic demands and provide information they need to know in order to be successful (Perigo & Upcraft, 1989). Even though more than 85% of higher education institutions have some form of first-year programming (as reported by the previously mentioned survey), student retention and persistence is still a major concern for all.

According to Hollins (2009), “perhaps one of the most underemphasized strategies for achieving student success within the community college is the development and implementation of an intentional, comprehensive approach to orienting new students to the college environment” (p. 15). At most institutions, programs tend to have one “retention champion” leading the cause and/or a piecemeal approach to address retention. Neither has proven successful in addressing retention challenges, as First-year programming needs to have institutional support. Tinto (1987) posited that achieving success in student retention generally “hinges on the construction of educational communities in college, program, and classroom level which integrate students into the ongoing social and intellectual life of the institution” (p. 188).

How to engage students in an integrated, rather than fragmented and disconnected, curriculum and how to build foundational skills for college student success is an ongoing challenge. Little research exists that has examined the college’s role in student persistence via the classroom (Barefoot, 2004). Gardner and Upcraft (1990) contended that one of the best programs for enhancing first-year student persistence is through the first-year seminar. Moreover, Tinto (1998) stated that the classroom (i.e., the semester-long student success course) is the main vehicle for improving student learning and persistence through

cooperative learning, frequent feedback, and increased involvement. Also, Engstrom and Tinto (2008) believed institutions need to consider the educational settings in which their students are asked to learn. A student's time on a 2-year campus is generally limited, which makes the academic classroom setting increasingly more important. Student success depends on what support is offered in the classroom and on campus.

This one key arena, if not the only one available for a community college student, is an avenue for unprepared students to participate in powerful, meaningful learning opportunities (Engstrom & Tinto, 2008). The student success course provides students with "education-for-life skills" (Cuseo, 1997). Strauss and Volkwein (2004) found classroom experience is a more influential retention predictor at 2-year institutions than at 4-year institutions.

Derby and Smith (2004) stated this course is structured to "allow students to meet other students, learn about the many different offices and services available for them on campus, as well as allowing them to set personal goals and help them realize the best way(s) to achieve these goals" (p. 771). Navigating the transition to college and making those needed connections can be facilitated by the student enrolling in a student success course. This arena provides a "ready-made" connection with faculty and peers.

Orientation courses have been referred to as "the most frequently researched and empirically well-documented course in the history of American higher education" (Cuseo, 1997, p. 3). To help students overcome barriers to success, some institutions have implemented policies that mandate taking the student success course before graduation. The goal to orient students to the various services offered at the college can break down barriers to navigating the campus.

The incidence of withdrawal from college is highest during the early stage of a college career, the first semester (Tinto, 1987), and the classroom is the crossroads where the social and academic meet (Tinto, 1997). Seppanen (1995) stated that community and technical college students who leave early tend to do so before the start of the second term, which suggests that it is interaction with the college during the first term that is key to staying at or leaving college. (p. 2)

Fralick (1993) found most students drop out of college during the first three to six weeks.

Tinto (1975) and Astin (1970) have stated that institutional variables play a significant role in retention, possibly larger than an individual's skills and background characteristics. Two 21st century initiatives that are helping to obtain a culture of evidence to guide community colleges toward best practices are CCCSE's and Achieving the Dream research.

21st Century Initiatives

As the student success and completion agenda grows across the nation, the demand increases for research that shows what impacts retention. In order to help colleges determine what practices they should implement to close achievement gaps so all students succeed, CCCSE has launched a special initiative, Identifying and Promoting High-Impact Educational Practices in Community Colleges, and presented the preliminary findings in the report, *A Matter of Degrees: Promising Practices for Community College Student Success, A First Look* (CCCSE, 2012). This report offers comprehensive quantitative results, gathered through surveys, and qualitative results, gathered through focus groups and interviews with faculty, students, student services professionals, and presidents.

The quantitative data were collected through four surveys that offer four perspectives: Survey of Entering Student Engagement, Community College Survey of Student

Engagement, Community College Faculty Survey of Student Engagement, and the Community College Institutional Survey. This multiyear project found that, no matter what program or practice a college implements, the design should incorporate the following principles: (a) a strong start that focuses attention on the front door of the college where students' earliest experiences make connections; (b) clear, coherent pathways so students can navigate through the college systems; (c) integrated support, which means in the classroom; (d) high expectations and high support so students do their best; (5) intensive student engagement, making engagement inescapable; (6) design for scale, which requires a long-term commitment by the institution; and (7) professional development for all in order to re-conceptualize their roles and also work differently (CCCSE, 2012, p. 5).

Regarding the community college population that participated in the research, 41% of community college students attend college full-time (CCCSE, 2012, p. 6). Although 79% of students aspire to obtain an associate degree, fewer than half meet their goal within six years after beginning college (CCCSE, 2012, p. 3). One reason students do not meet their goal quicker could be their pre-entry academic level. When entering college underprepared, developmental education courses are required; 66% of entering community college students needed developmental coursework in at least one area, but only 19% reported that being unprepared would likely cause them to withdraw from classes or the college (CCCSE, 2012, p. 7). Passing developmental coursework before enrolling in college credit courses lengthens a student's time toward degree completion. The challenge for colleges becomes how to keep students engaged for however long it takes to obtain the credential. Essential for community colleges to understand is what practices ensure students are successful in the early weeks and continue towards degree completion.

Structured Group Learning Experiences

CCSSE examined five structured group experiences, which included: orientation, accelerated or fast-track developmental education, first-year experience, student success course, and learning community. Out of 288 responses asking how many group learning experiences they had at their college, 30% reported using three, 27% reported using four, and 19% used all five. However, when asked whether the experience was mandatory, the percentages decreased with 4 out of 5 less than twenty-eight percent, with orientation at 38%. Although 83% of institutions report offering the student success course, only 15% make it mandatory (CCCSE, 2012, p. 16).

Achieving the Dream Colleges

In 2004, the Lumina Foundation for Education launched “Achieving the Dream: Community Colleges Count,” a nonprofit organization whose founding principal is to improve college programs and services. This initiative is particularly focused on low-income students and students of color. Achieving the Dream helps community colleges create a “culture” of evidence by examining students’ performance and identifying barriers to academic progress. All Achieving the Dream colleges were asked to try to “move the needle” on five measures of student success: (a) completion of developmental courses and progression to credit bearing courses; (b) completion of so-called gatekeeper courses, including introductory college courses in English and math; (c) completion of attempted courses with a grade of C or better; (d) persistence from semester to semester and from year to year; and (e) attainment of college credentials. Today more than 130 community colleges in 24 states and the District of Columbia are involved in Achieving the Dream. To name a few studies, three Achieving the Dream community colleges, Tulsa Community College,

Pulaski Technical College, and Greenville Technical College, reported the following findings in relation to the student success course and persistence.

In 2008, Tulsa Community College, a college with 20,000 students, modified a college orientation course SAS (Strategies for Academic Success) by addressing student-identified barriers. After the first year of this intervention, success rates for first-time freshmen enrolled in SAS persisted fall to spring at a rate of 85% and from fall to fall at a rate of 61%. Students who did not enroll in the SAS course had persistence rates of 59% and 41%, respectively (McKoen, 2010). Additionally, the research showed that students who enrolled in SAS completed six developmental education courses and gateway courses with a grade of C or better. Another Achieving the Dream college, Pulaski Technical College (North Little Rock, AR), increased first- to second-term retention for first-time, degree- or certificate-seeking, full-time students from 82% for the 2007 cohort to 87% for the 2010 cohort (Achieving the Dream, 2012a). This improvement was associated with the new student orientation program.

For Greenville Technical College, findings included increased student fall-to-spring persistence for all students, from 62.5% in 2007–08 to 72.7% in 2011–12. This persistence was particularly impressive for Black students, who showed an increase in persistence from 57.5% in 2007–08 to 71.3% in 2011–12. This improvement was associated with the college's new student orientation that was scaled to reach 95% of new Greenville Technical College students (Achieving the Dream, 2012a). Other Achieving the Dream colleges reported positive results after assessing the new initiatives at their institutions.

Results of Similar Studies

A review of the literature revealed similar studies in relation to freshman seminars, orientations, and first-year programs. Kennett and Reed (2009) found that student success courses are one strategy that postsecondary institutions have used to address the struggles students face in transitioning to college. Some researchers have attempted to evaluate the efficacy of student success courses.

Schnell et al. (2003) found that, over a 4-year period, college students who took part in a first-year experience course at a 4-year institution graduated at a higher rate than did the matched group of students who were not enrolled in the course. Jamelske (2009) stated that, in 15 out of 23 years, the University of South Carolina–Columbia researchers found first-year seminar students were more likely to return to their sophomore year than were those students who did not enroll in a first-year experience course. Another study of the first-year experience seminar at a 4-year college was conducted at Baker College by Harroun (2005). Using a causal–comparative methodology, Harroun found a statistically significant increase in retention in her comparison of students who participated in the seminar course their first quarter when compared to students who did not participate in the course. Also, Maisto and Tammi (1991) compared students at a 4-year university who participated in a freshman seminar course with those students who did not and found that participants in a freshman seminar course were more likely to return their sophomore year than were nonparticipants.

One community college study, by Hoff, Cook, and Price (1996), compared students who took an orientation course to those who did not; students were matched by age, sex, standardized test scores, GPA, and career objectives for 5 years. Results revealed that students who completed the orientation course were retained at a higher rate (69.5%

compared to 55.8%), attempted more course credits (24.9 versus 22.2), and completed more hours (56 versus 44.6), than did those who hadn't completed the course. Derby and Smith (2004) studied the association between orientation course enrollment, over a period of time, and student retention. The study tracked the persistence of over 7,000 students at a midwestern community college from 1999 through 2002. They found that associations existed between taking the course and retention, particularly with respect to associate's degree attainment within the 2-year traditional timeframe.

In another study, Zeidenberg et al. (2007) examined 28 Florida community colleges, studying a cohort over 17 terms and comparing those students who enrolled in their student success course, called SLS or student life skills, and those students who did not take the SLS course. The results showed that the students who enrolled in SLS were more likely than their peers to have completed a credential and had a greater chance of transferring to a university in Florida.

Fike and Fike (2008) analyzed predictors of fall-to-spring and fall-to-fall retention for 9,200 first-time-in-college students who enrolled in a community college over a 4-year period. Findings indicated that passing development courses, taking Internet courses, participating in the student support services program, receiving financial aid, parents' education level, the number of hours for which the student enrolled in the first fall semester, and the number of hours dropped in the first fall semester served as predictors of student persistence.

A study at Northern Community College and Eastern Community College (pseudonyms) that examined student success courses through qualitative research found that these courses are essential for students in learning about their college environment,

improving their study skills, and building relationships with faculty and peers (O’Gara et al., 2009). Research recommendations presented in this study supported the need to further examine community college programs that provide freshmen with information related to student support services. The study found that by providing information related to student services, positive results were found in persistence and degree completion.

College Experience Course

This study examined the first-year student success course, College Experience (SDV 108) offered at CCC. The course’s curriculum covered the objectives that students will: demonstrate an understanding of how to navigate basic information as a CCC student, demonstrate an understanding of college expectations and essential academic information, demonstrate the use of college technology, demonstrate knowledge of campus opportunities and resources, be introduced to the academic skills necessary for student success, and demonstrate the life skills necessary for student success. As of the Fall 2012 semester, this course became a mandatory graduation requirement. Although students are strongly advised to enroll in the SDV 108 during their first semester at CCC, the option to take the course during a future semester also meets the requirement.

Summary

Institutions cannot change who students are when they start college. The diverse population that enrolls in the community college challenges institutions as the revolving door syndrome continues at a rapid pace. Postsecondary institutions need evidence of the effectiveness of retention strategies rather than making decisions based on assumptions. Developing a culture of institutional assessment is necessary to determine learning in the first year of college. Wild and Ebbers (2002) suggested that institutions can affect student

retention levels in positive ways by assessing their current programs and recreating successful movements in various departments within the established college system.

Two-year community colleges differ from 4-year institutions in that they are mainly commuter colleges where students have little opportunity to connect with their environment. Tinto (2002) stated, “The experience of the classroom has been largely absent from studies of student persistence and virtually ignored in theories of student departure” (p. 81). Greater focus is needed on the institution’s actions and responsibilities pertaining to students’ classroom experience. Despite the often-cited barriers to community colleges success, an emerging perspective suggests that institutions can purposefully align practices in such a way to maximize student success, including persistence (Deil-Amen & Rosenbaum, 2003). The strategy examined in this study was the implementation of a mandatory success course, SDV 108.

CHAPTER 3. METHODOLOGY OF THE STUDY

Overview

The purpose of this study was to conduct a statistical analysis focusing on student academic progress, as defined by GPA and number of credits earned, of first-time, full-time, degree-seeking community college students and persistence from fall to spring term. A comparison of sample groups was conducted in relation to participation in the student success course SDV 108. Two theoretical frameworks, Rendón's (1994) validation theory and Van Maanen and Schein's (1979) organizational socialization theory, along with Astin's (1993) I-E-O conceptual model, were utilized to guide this study.

A quasi-experimental research design was used in completing the study. As suggested by Creswell (2009), this chapter includes a description of the research design, the population and sample, data resources and collection, variables used, and methods of analysis.

Research Questions

The research questions that guided this study were:

1. What are the student demographics at a midwestern community college?
2. How do SDV 108 (College Experience course) students and non-SDV 108 students differ by age, gender, race/ethnicity, first-generation and Pell grant eligibility status, and COMPASS scores?
3. What is the difference in academic progress among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course?

4. What is the difference in persistence among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course?
5. To what extent, if any, do student demographics and college coursework predict academic progress? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework predict academic progress?
6. To what extent, if any, do student demographics, college coursework, and academic progress predict student persistence? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework and performance predict persistence?

Research Design

This study used a quasi-experimental methodology to determine if students at a midwestern community college who participated in a student success course (SDV 108) had better academic progress and higher persistence rates than did nonparticipants. Because this researcher did not manipulate the treatment, which was a one-semester, 1-credit, graded course, held for the 15 weeks of the Fall 2012 semester, the study was quasi-experimental (Gravetter & Wallnau, 2009). However, researchers who use quasi-experiments may still have considerable control over selecting the kinds of comparison groups with which the treatment group is compared (Shadish, Cook, & Campbell, 2002). This study operated retrospectively, as the independent variable, participation or nonparticipation in the 1-credit student success course, had already occurred.

Descriptive statistics with frequency distributions were used to provide a profile of the student sample, subdivided into four groups: all SDV students, non-SDV students, successful SDV students, and unsuccessful SDV students (hereafter referred to as all SDV, non-SDV, SDV+, and SDV–, respectively). Cross-tabulations were employed to examine relationships among the variables and develop a detailed picture of the study. The inferential statistical procedure of Pearson point biserial correlation analysis was employed to identify significant correlations between the independent variables and the dependent variables of academic progress and fall to spring persistence. Multiple regressions were employed to test the predictability of any of the variables in academic progress and persistence from fall to spring and to observe changes in significance in relationships of the variables between the models.

Astin's (1993) I–E–O college impact model informed this study (Figures 3.1 and 3.2) and was an integral part in making sense of the data. This model was utilized to determine the relationship of students taking the course SDV 108 and their academic progress and persistence. Data from student institutional records were utilized to examine between-group differences in relation to academic progress and student persistence from fall to spring semester. Persistence was determined by students registering for at least one course in the subsequent spring semester and attending as of the census date. Academic progress was defined by a GPA of 2.0 (grade C) or better and 67% credits attempted/credits earned.

Institutional Description

The site of this study was a public multicampus community college, CCC (pseudonym) located in the Midwest, serving a metropolitan area and surrounding counties. The college's district encompasses 6,560 square miles with approximately 20% of the state's

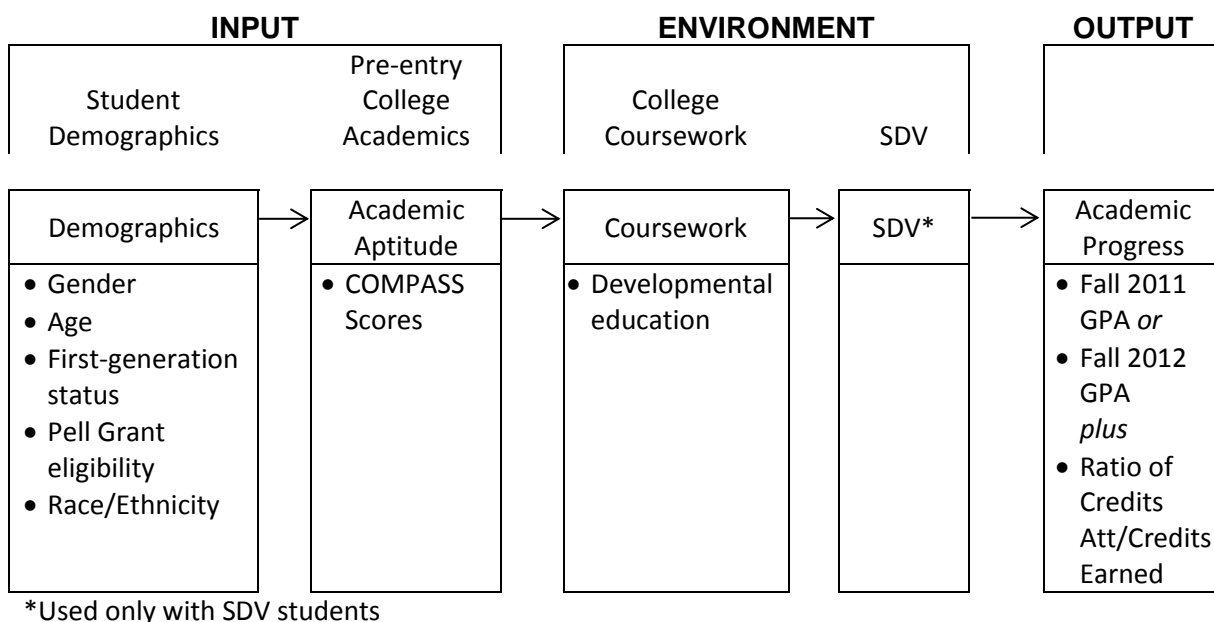


Figure 3.1. Conceptual model for community college student academic progress.

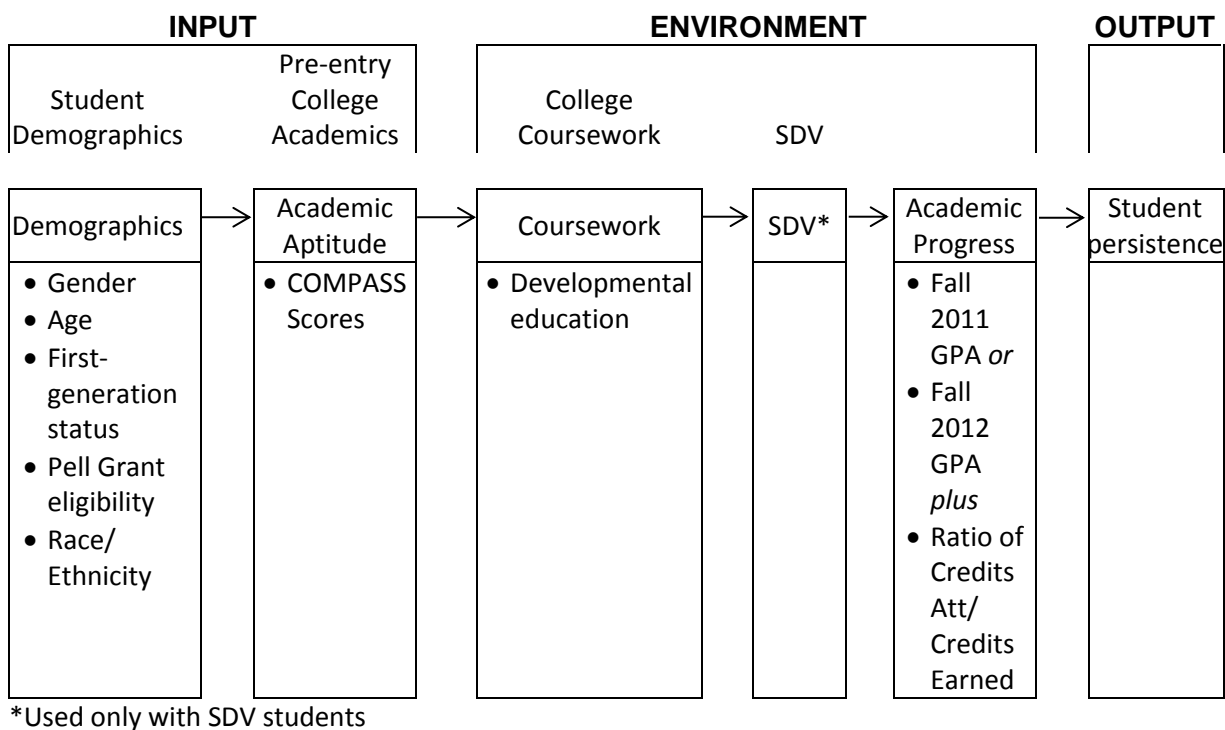


Figure 3.2. Conceptual model for community college student persistence.

population residing within the 11-county district. The college offers 130 programs and certifications across a wide range of disciplines. Awards offered include: less than a one-year certificate, one but less than two-year certificate, and an associate's degree. CCC has six campuses: three urban college campuses, one rural college campus, and two small-town campuses. In addition, CCC has two educational centers that are used for adult basic education and high school dual-credit programming.

CCC has an enrollment of approximately 24,000 full- and part-time students. During the Fall 2011 semester, 37.4% of students attended on a full-time basis, and Fall 2012 semester enrollment was 35.6% full-time students. The ethnic composition of the student body was 74% White in Fall 2011 and 77% White in Fall 2012. The highest non-White population was Black with 8.7% in Fall 2011 and 7% in Fall 2012. The female population was the highest for both fall semesters with 53.8% in Fall 2011; 53.9% in Fall 2012. The average CCC student age was 23.5 years of age in Fall 2011 and 23.2 years of age in Fall 2012. For both Fall 2011 and Fall 2012 semesters, approximately 98% of the students were residents of this midwestern state; less than 1% were foreign/international students and slightly over 1% were out-of-state students.

The data further indicate that 1,234 students enrolled in Fall 2011 and 1,582 students enrolled in Fall 2012 were first-time, full-time, degree-seeking students at CCC. The majority were in the age category of 18 to 24 years old and over 56% self-reported as first-generation students each semester. The mean age dropped to 21.9 years when only considering full-time students for Fall 2012 and remained approximately the same (23 years) for the Fall 2011 semester. When examining only full-time, first-time students, the male population was higher than the female population for both fall semesters at 53.5% in 2011

and 54.5% in 2012. Further analyses of student demographics in relation to student persistence and academic progress will be presented and discussed in chapters 4 and 5.

Population and Sample

The population for this quantitative study included first-time, full-time, degree-seeking students who were enrolled for Fall 2011 or Fall 2012. Full-time status for any semester is determined by a student's enrollment in 12 or more credit hours. The sample for this study is considered a convenience sample as participants were not randomly assigned to a group (Creswell, 2009). The sample groups were created by using data retrieved from student records of first-time, full-time, degree-seeking students. One group consisted of 821 first-time, full-time, degree-seeking students enrolled Fall 2011 who did not participate in the student success course. The other two groups were drawn from 525 first-time, full-time, degree-seeking students enrolled in the student success course in Fall 2012.

The 2012 group was divided into two subgroups: successful completers of SDV 108 receiving a grade C or higher (309 students) and unsuccessful completers, as defined by receiving a grade C- or below (216 students). Students who received a "W," designating withdrawal from the course, also were included in the unsuccessful completer's group. Students who dropped the course during the official drop/add period in the first days of the semester were excluded from this study. Once the official drop/add date passes, a student is not able to drop a course but is allowed to withdraw up until the 14th week of the semester. Students who withdrew from the course after the official drop/add period received a W as a grade and were included in this study. This inclusion addressed the concern that selecting just those who completed the course would bias the data set. Students who withdrew on the

last possible date might have gained information that helped them transition to the college environment through skills acquired in the student success course.

The Hosmer–Lemeshow test, a statistical test for goodness of fit, recommends a sample should have 10 cases per independent variable (Tabachnick & Fidell, 2007). For this study, the nine independent variables used in the model met the 10:1 ratio as the sample size was 1,416 students.

In this study, a secondary dataset was used to determine whether students at CCC persisted between fall and spring semester. Student academic progress, as defined by GPA and the percentage of credits attempted/credits earned also was examined and was used either as an independent variable when running the regression for persistence or as the dependent variable when running the regression for academic progress. First-time students, per CCC policy, were defined as individuals who had never been enrolled for credit at a college/university. Also per this policy, an individual who took college classes while in high school was also considered a first-time student. Only students who met the following criteria were included in the sample selection: had completed no college work previously (dual courses excluded) and were enrolled on lock-in/census date in the fall semester. Most students had completed the ACT or the COMPASS test for academic entrance scores. For the 119 cut score values missing, a multinomial regression was employed to impute predicted values for the variables.

Variables

The demographic and pre-academic variables examined in this study were chosen based on previous research studies that suggested these variables can individually influence student success. Controlling for these independent variables allowed the researcher to

answer the research questions to determine if there was a statistically significant relationship between participation in the student success course and the two dependent variables, academic progress and persistence. This research attempted to determine whether and to what extent a relationship exists between two or more of the quantifiable (numerical) variables in this study, although a correlation between variables does not mean causation (Shadish et al., 2002) but does enable predicting the value of one variable for a participant if one knows the value on the other variable.

The visual model of the variables, adapted from Astin's (1993) I-E-O model, guided the ordering of the independent variables (Figures. 3.1 and 3.2)). The "I," or input, is represented by the following five demographic independent variables used in this study: gender, age, Pell grant eligibility, race/ethnicity (White, Black, Hispanic, Native American, Asian, and unknown), and first-generation status. Also used as an input variable was the pre-academic characteristic of COMPASS cut score, which represented student aptitude. The "E" (environment) variables were the college coursework experiences and college performance. The college coursework experiences were developmental courses in reading, writing, and/or math, and/or SDV 108. College performance, called academic progress, was used as an environment independent variable when predicting persistence and as a dependent variable (outcome). Academic progress was defined by a GPA of 2.0 (grade C) or better and 67% credits attempted/credits earned. Another outcome variable was the dependent variable student persistence. The variable coding can be found in Appendix B. Descriptive statistics of frequencies and cross-tabulations, and also, Pearson Point-biserial correlations were used to gain an understanding of the demographic variables that were used to explore the data and examine the differences.

Data Collection

The students in this study were enrolled in a large, multicampus, public community college located in the Midwest. This study analyzed historical data collected from the Fall 2011 and Fall 2012 semesters. The CCC Institutional Effectiveness Executive Director collected and provided data from all campuses through using Banner, a comprehensive student computer information system. Completed student admissions applications, along with the academic records, were then compiled electronically. Prior to examining data, an application for approval to conduct research involving human subjects was submitted to the Office of Research Compliance at Iowa State University. Upon review, the Institution Review Board (IRB) determined this study indeed met their requirements. On May 22, 2012 the researcher was notified by the IRB that the study was exempt from the requirements as described in 45 CFR 46.101(b) (Appendix C). At no time were individually identifiable data disclosed. A modification was submitted at a later date in order to use CCC student survey data from Fall 2012. Approval was granted on January 28, 2013 (Appendix C).

Executive Summary Report

In Fall 2012, CCC initiated a new policy that all first-time arts and sciences (A.A. and A.S. degree) students and students pursuing an AGS degree would take The College Experience: Planning Your Success course (SDV 108) as a degree requirement (Appendix D). Students were informed of the new graduation requirement during New Student Orientation, and approximately 90% of students enrolled in the course. Even though CCC advised students to enroll in the SDV 108 during their first semester, it was left to the student's discretion when to take the SDV 108 course.

The curriculum for the student success course, slightly changed for Fall 2012, was designed to introduce students to college resources, services, and expectations and to assist them in gaining maximum benefit from their college experience. Students learn skills needed for college success, such as academic planning, utilizing resources, and managing life/work/school conflicts. This course, taught by a combination of full-time faculty, counselors, adjuncts, and other CCC staff members, was designed to contribute to increasing the persistence, retention, and completion rates of CCC students. SDV 108 is offered as a 1-credit, 15-week semester course. CCC's newly adopted policy is consistent with the findings of the 2006 National Survey on First-Year Seminars (National Resource Center for the First-Year Experience and Students in Transition, 2006), which found that 42.5% ($n = 313$) institutions offered seminars carrying 1 credit, 46% of those institutions requiring their first-year seminar for all first-year students.

CCC compiled student mid-semester and end-of-semester course evaluation information about the SDV 108 course. Other data collected included student achievement and persistence. The information, in the form of an executive summary report ([Midwestern community college task force], 2013), was provided to this researcher by CCC.

Information provided. As of September 4, 2012, 105 sections of the SDV 108 course were being offered across six campuses with just over 2,500 full-time and part-time students enrolled. Of the 2,500 initial students, 2,003 completed, 86% passing with a grade of D– or better and 74% earning a C grade or better; 354 students received a W, one student received an incomplete, and 284 received an F. A district-wide retention rate of 80% was achieved by students taking this course; the retention rate for all courses during Fall 2012 was reported to be 69%.

Full-time students enrolled for spring term classes (as of January 28, 2013), were characterized as follows: 89% of fall students who took and passed SDV 108 enrolled for spring term classes; 47% of fall students with an F in SDV 108 enrolled for spring term; 100% of fall students with an incomplete (I) in SDV 108 enrolled for spring term; 39% of fall students with a W in SDV 108 enrolled for spring term classes.

The CCC student survey. The student survey, written by CCC personnel, was designed to measure the student's knowledge of various student services; to gauge the rate of the student's use of CCC tools, resources, and services; and to solicit feedback on the course itself (Table 3.1). The response rate of the online survey was approximately 50% of students

Table 3.1

Responses to Open-Ended Questions on the CCC Student Survey

Question	At midterm		At end of term	
	Response	<i>n</i>	Response	<i>n</i>
1. What was the most useful part of the class?	Completion plans	54	Learning about CCC	174
	Knowing where to get help	43	Completion plans	89
	Learning about CCC	32	Everything	44
	Website/technology	29	Website/technology	33
	"Nothing"	24	"Nothing"	33
2. What parts of this class should we change?	"Nothing"	292	"Nothing"	197
	Shouldn't be required	83	Shouldn't be required	89
	Make more interesting	37	Waste of time/money	38
	Change quizzes	30	Hold the class more than once a week	23
	Change textbook	24	Change textbook	20

currently enrolled in the SDV 108 (1,000 responders) at midterm, and a smaller response rate of 550 responders at the end of the semester. The most common responses and the frequency of those responses to the two open-ended questions asked on the survey as of midterm and at the end of the term, noted in order for each question are shown in Table 3.1.

This executive summary ([Midwestern community college task force], 2013), provided useful information for the overall results of this research study and will be discussed further in the study findings.

Data Analysis

By employing the I–E–O model of Astin (1993), an overall picture for investigating the data in this quasi-experimental study was provided. Statistical Package for Social Sciences® (SPSS) 21 computer software was used to execute the statistical analyses for this study. Student records each were assigned an identification number separate from any CCC institutional identifying number to ensure anonymity. Data were entered for each student pertaining to enrollment status in either Fall 2011 and Fall 2012. Additionally, demographic information of gender, age, first-generation and Pell grant eligibility statuses, race/ethnicity, and COMPASS scores were entered for each student. As environment variables, enrollment in developmental education courses, including reading, writing, math, and enrollment in SDV 108 coursework were recorded. Also, fall semester GPA and the percentage of credits attempted/credits earned were included in the student record.

In order to address research questions 1 and 2, descriptive statistics of frequencies and cross-tabulations were computed to examine the profile of community college students at CCC and the frequencies for the variables of gender; age; race/ethnicity; Pell grant eligibility; first-generation status; and COMPASS cut scores among the SDV+, SDV–, and

non-SDV groups of students. Cross-tabulations revealed relationships between the variables in order to gain further insight about students in this study.

Data analysis also was performed to examine differences in persistence and academic progress of each group. Pearson point-biserial correlations were conducted to identify significant positive linear correlations in persistence and academic progress. Data from students in the designated three groups (SDV+, SDV-, and non-SDV) were analyzed. One of the dependent variables, academic progress, was defined by fall semester GPA and the percentage of number of credits attempted/credits earned. This researcher selected 67% credit retention and a GPA of 2.0 (grade C) or better as successful academic progress, because this is considered the measure for satisfactory academic progress at CCC. These two criteria needed to be met to avoid an academic warning. GPAs were computed by adding the total grade points each student had earned and then dividing this number by the total number of credit hours the student completed during the fall semester. The other dependent variable, persistence, was a dichotomous variable with students categorized into one of two groups, persister or nonpersister.

Astin's (1993) I-E-O conceptual model was used as a guide in order to make sense of the data. Multiple regression, hierarchical regression, was the statistical technique used because the dependent variables of persistence/nonpersistence and academic progress achieved/or not achieved were binary and the independent variables were a mixture of categorical and continuous variables (Tabachnick & Fidell, 2007). In order to address research questions 5 and 6, hierarchical regression analyses were conducted to identify and determine the extent to which differences, if any, in demographics, academic ability, college coursework, and college academic progress (only used when employing the model for

persistence) contributed significantly to the predictability of the dependent variable of fall-to-spring persistence or academic progress. Predictor variables were entered into the hierarchical regression equation in blocks with the significance level established at $p < .05$.

Regressions were employed separately for non-SDV students and SDV students for academic progress and persistence outcomes. To examine academic progress, as defined by a GPA of 2.0 or above and 67% credits attempted/credits earned, a three-block model was used. Entered into the first block were the independent student demographic variables of age, gender, ethnicity, first-generation status, and Pell grant eligibility. In Block 2, the developmental education cut scores, representing pre-entry academic ability were entered. In the third block, college experience variables, which included the developmental education courses and SDV student success course, were added when conducting the regression for SDV students.

A second logistic regression was employed to identify which, if any, variables contributed significantly to the predictability of the fall-to-spring persistence dependent variable. The same first three blocks were used with an added fourth block, which included the independent variable academic progress, which was computed by using fall semester GPA and percentage of credits attempted/credits earned.

Summary

Community colleges face unique challenges when addressing persistence. The purpose of this study was to examine how community college student demographics, pre-entry academic characteristics, college coursework, and college performance predict academic progress and persistence. A predictive conceptual model, Astin's (1993) I-E-O model, was used to measure the effect of the environment while controlling for the input

variables. By employing this model, insight was gained as to what variables are predictors of student success. Astin (1993) described inputs as the background and pre-academic characteristics and stated that input and outcome data are of limited usefulness without consideration of the environment. This study examined the input variables, the environmental variables, and the outcome.

In this study, attempts were made to identify specific variables that predict student persistence and academic progress. Because community college research in persistence is scarce, this study contributes to scholarly research literature in the field. Finally, this study provides valuable information to CCC at a time when assessment as to the effectiveness of participation in the SDV 108 course was needed to guide future institutional policy. The statistical analysis models provided insight about the impact of SDV 108 (The College Experience: Planning Your Success) student success course and academic progress and student persistence for CCC.

CHAPTER 4. RESULTS

This chapter provides an overview of the findings from the statistical analyses of the study. To better understand the general demographics of the CCC students in the sample, a profile of age, gender, race/ethnicity, first-generation status, Pell grant eligibility, COMPASS scores, developmental education courses taken, and academic progress and persistence was compiled using frequency analysis. A detailed description of the results is presented in Table 4.1. The study sought to determine if there is a significant relationship between taking the student success course *The College Experience: Planning Your Future*, and academic progress and persistence.

Demographics of Cardinal Community College Students

The first two research questions of this study were:

1. What are the student demographics at a midwestern community college?
2. How do SDV 108 (*College Experience* course) students and non-SDV 108 students differ by age, gender, race/ethnicity, first-generation and Pell grant eligibility status, and COMPASS scores?

The investigation of these questions allows the reader to become familiar with the characteristics of students who take a student success course versus those who do not.

Descriptive analyses using frequencies and percentages were conducted to gain a picture of the student demographics by comparing five groups: total student sample, non-SDV 108 students, all SDV students, SDV+ students and SDV- students.

The total student sample group ($N = 1,416$) included all students who enrolled for the first time in either the Fall 2011 or Fall 2012 semester at CCC. The non-SDV students, who did not enroll in the SDV 108 course, consisted of 891 first-time, full-time, degree-seeking

Table 4.1

Demographics and Frequencies of Total Sample (N = 1,416)

Variable	<i>n</i>	%
Term enrolled as first-time, full-time student		
2011 (non- SDV students)	891	62.9
2012 (SDV students)	525	37.1
Age		
≤24 years	1,157	81.7
25–35 years	182	12.9
≥36 years	77	5.4
Gender		
Male	709	50.1
Female	707	49.9
Race		
White	976	68.9
Black	178	12.6
Hispanic/Latino	90	6.4
Asian	38	2.7
Native American	8	0.6
Unknown	126	8.9
Pell grant eligibility		
Not eligible	634	44.8
Eligible	782	55.2
First generation		
Not first generation	570	40.3
First generation	846	59.7
COMPASS cut scores		
Below cut scores for 3 developmental education courses	347	24.5
Below cut scores for 2 developmental education courses	274	19.4
Below cut scores for 1 developmental education course	327	23.1
Above cut scores for all three courses	468	33.1
Developmental education courses taken		
Math	497	35.1
Writing	242	17.1
Reading	190	13.4
Academic progress		
Progressing	692	48.9
Not-progressing	724	51.1
Persistence		
Persisters	1,038	73.3
Non-persisters	378	26.7

students who were enrolled in the Fall 2011 semester. The success course student group (all SDV) consisted of 525 first-time, full-time, degree-seeking students enrolled Fall 2012 semester. Additionally, two subgroups were formed from the all-SDV student group: (a) those who successfully completed the SDV 108 course (SDV+; $n = 309$), which meant obtaining a grade of C or higher in the course; (b) and those who did not successfully complete the SDV 108 course (SDV-; $n = 216$), receiving a C- or below or a W grade in the course. Descriptive statistics for student demographics are presented next.

Independent Variables

Age. For the purposes of this study, student age was divided into three categories: traditional-age students, defined as those 24 years or younger; nontraditional-age students 25–35 years old; and students 36 years of age or older. The mean age for students in this study was 21.6 years old, which in comparison with the total CCC population was younger than the CCC student mean age of 23.5. The predominant age for students in this study was 18 years ($n = 578$), followed by 19 ($n = 230$), and then 20 ($n = 95$). Overall, 1,157 students were under 24 years or younger and 182 students were 25–35 years old. Less than 6% of the population was 36 years of age or older (Table 4.2). Little difference in the average age of students was found when compared by gender. The average age of both male and female students was between 21 and 22 years old.

For all groups, the highest percentage of students was in the 24 years and younger category. For non-SDV students, 78.8% was in the youngest category, whereas the all-SDV group had a higher percentage (86.7%) in that category. The next highest age category, for all groups, was students 25–35 years of age, with the highest percentage (14.4%) in the non-SDV group.

Table 4.2

Comparison of Age by SDV Group

Group	Total <i>n</i>	Age of students (years)					
		<24		25–35		≥36	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	702	78.8	128	14.4	61	6.8
All SDV students	525	455	86.7	54	10.3	16	3.0
SDV+	309	270	87.4	33	10.7	6	1.9
SDV–	216	185	85.6	21	9.7	10	4.6
Total student sample	1,416	1,157	81.7	182	12.9	77	5.4

Gender. Frequency of each gender within the five groups is shown in Table 4.3.

Approximately one-half of all the community college students in the study was male (50.1%) and one half (49.9%) was female with similar percentages for non-SDV students (51.8% male and 48.2% female). In comparison, the gender split for the CCC general population showed a greater difference between males (46.1%) and females (53.8%). Comparing SDV students, the all-SDV and SDV– groups reported higher male percentages; however, the SDV+ group showed the opposite with a female population approximately 18% higher than male.

Table 4.3

Comparison of Gender by SDV Group

Group	Total <i>n</i>	Male		Female	
		<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	461	51.8	430	48.2
All SDV students	525	248	47.2	277	52.8
SDV+	309	126	40.8	183	59.2
SDV–	216	122	56.5	94	43.5
Total student sample	1,416	709	50.1	707	49.9

Race/ethnicity. Analysis of race/ethnicity within the five sample groups was conducted. Of the total student sample studied, 68.9% were White, 22.2% were minoritized populations, and 8.9% were of unknown race/ethnicity Table 4.4. The racial distribution for CCC's general population during the same time period comprised a higher percentage of White students 73.71% (Fall 2011) and 77.0% (Fall 2012).

Across all groups, the majority of students were White; however, an 8.5% difference of White students was found when comparing SDV students (74.3%) and non-SDV students (65.8%). A similar difference, 8.3%, was found when comparing SDV+ and SDV- students. Comparing the percentage of minorities within groups, 12.6% of the total student sample was Black, but the non-SDV group had a higher percentage at 15.6% and the all-SDV group had a lower percentage at only 7.4% Black. Due to this finding, the minoritized populations were not collapsed in further analyses.

First-generation status. Overall, 846 students from the total student sample self-reported being first-generation college students. For this study, students were asked on their CCC application whether either of their parents attended college, which provided this researcher first-generation status information. The assumption was made that students correctly self-identified as first-generation students.

Of the students in the SDV + sample, 62.5% identified themselves as first-generation as did 59.3 % of the students in the non-SDV sample (Table 4.5). When dividing the students into the sub groups of SDV+ (65.7%) and SDV- (53.2%) a greater difference was found between groups in percentages of first-generation students.

Table 4.4

Comparison of Race/Ethnicity by SDV Group

Group	Total sample <i>n</i>	White		Total non-White		Non-White						Unknown			
		<i>n</i>	%	<i>N</i>	%	Black		Hispanic		Asian		Native American		<i>n</i>	%
Non-SDV students	891	586	65.8	216	24.2	139	15.6	48	5.4	23	2.6	6	0.7	89	10.0
All SDV students	525	390	74.3	98	18.7	39	7.4	42	8.0	15	2.9	2	0.4	37	7.0
SDV+	309	240	77.7	44	14.2	13	4.2	23	7.4	7	2.3	1	0.3	25	8.1
SDV-	216	150	69.4	54	25.0	26	12.0	19	8.0	8	3.7	1	0.5	12	5.6
Total student sample	1,416	976	68.9	314	22.2	178	12.6	90	6.4	38	2.7	8	0.6	126	8.9

Table 4.5

Comparison of First-Generation Status by SDV Group

Group	Total	Not first generation		First generation	
	<i>n</i>	<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	363	40.7	528	59.3
All SDV students	525	207	39.4	319	60.6
SDV+	309	106	34.3	203	65.7
SDV-	216	101	46.8	115	53.2
Total student sample	1,416	570	40.3	846	59.7

Pell grant eligibility. Analysis of the student Pell grant eligibility data is shown in Table 4.6. The majority (55.2%) of the total sample group was Pell grant eligible. Among the students in the all-SDV group, approximately half (50.9%) were eligible and half (49.1%) were not eligible. However, when comparing the subgroups, the SDV+ group had a lower percentage (46.9%) of students with low socioeconomic status, as indicated by being Pell grant eligible, than did the SDV– group (56.5%).

Table 4.6

Comparison of Pell Grant Eligibility by SDV Group

Group	Total	Not eligible		Eligible	
	<i>n</i>	<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	376	42.2	515	57.8
All SDV students	525	258	49.1	267	50.9
SDV+	309	164	53.1	145	46.9
SDV–	216	94	43.5	122	56.5
Total student sample	1,416	634	44.8	782	55.2

COMPASS cut scores. Another pre-entry independent variable examined for each student was the COMPASS and/or ACT entrance assessments scores. The data reflected assessment scores in ACT or COMPASS English (writing), reading, and math. ACT scores ranged from 1–35. There were 507 ACT scores provided in the data for math and writing and 506 ACT scores in reading. COMPASS scores range from 1–99. Math COMPASS scores ($n = 1,029$), writing COMPASS scores ($n = 949$), and reading COMPASS scores ($n = 958$) were recorded. All assessment scores were combined to provide reading, writing, and math cut scores for students. For missing COMPASS cut score cases, an imputed value was used for this variable using a regression model, i.e., replacing missing values with predicted

values from a regression analysis using other predictor variables. The COMPASS cut score variable was the only variable in this study with missing cases.

CCC had determined that cut scores for developmental education reading would be a COMPASS reading score of under 81 or an ACT reading score of under 19. Also, the required writing cut score was set, with a recommendation for taking a writing developmental education course, for students who scored under 70 on COMPASS writing or under 19 on ACT English. Students who assessed at under 76 in COMPASS math or under 19 in ACT math were advised to enroll in a math developmental education course.

The ACT and COMPASS assessment cut scores for the sample were combined to facilitate the analysis of students and to account for duplicate assessments. The COMPASS cut score index variable was coded as follows: 3 represented below cut scores in reading, writing, and math; 4 represented falling below cut scores in two developmental education courses and meeting the cut score for one developmental education course; 5 represented falling below the cut score for one developmental course and meeting the cut scores for the other two developmental education courses; 6 represented meeting all cut scores for developmental education courses.

For all groups, approximately 24–27% of students did not meet cut scores for all three developmental education courses, reading, writing, and math (Table 4.7). A wide range (25.5–36.0%) was reported across groups for students in the above all cut score group who were not required to take any developmental education courses. At CCC, taking needed developmental education courses is encouraged during the first semester, but not mandated.

Table 4.7

Comparison of COMPASS Cut Scores by SDV Group

Group	Total <i>n</i>	Below all cut scores		Below two cut scores		Below one cut score		Above all cut scores	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Non SDV students	891	214	24.0	159	17.8	197	22.1	321	36.0
All SDV students	525	133	25.3	115	21.9	130	24.8	147	28.0
SDV+	309	75	24.3	61	19.7	81	26.2	92	29.8
SDV-	216	58	26.9	54	25.0	49	22.7	55	25.5
Total student sample	1,416	347	24.5	274	19.4	327	23.1	468	33.1

Environment Variables

Developmental education courses. Overall, math was the developmental education course that the largest percentage (35.1%) of students enrolled in across groups (Table 4.8). The group with the highest percentage (49.1%) of students enrolled in math was the SDV- group, and the group with the lowest percentage (30.7%) of students enrolled was the SDV+ group. The percentages of students enrolled in reading, by group, ranged from 11.0% to 24.1% showing, once again, a wide range of academic ability. Comparing enrollment by group, in the reading course, the percentage of non-SDV students (11.7%) and SDV+ students (11.0%) were less than one percentage point different.

For developmental writing, the group of students with the highest percentage enrolled was the SDV- group (28.2%). Once again, the percentage of non-SDV students (14.9%) and SDV+ students (15.5%) taking writing developmental education courses were similar. Students in the SDV- group reported the highest percentage enrolled in all three developmental courses, whereas students in the SDV+ group reported the lowest percentage enrolled in all three developmental courses.

Table 4.8

Comparison of Developmental Education Courses Taken by SDV Group

Group	Total <i>n</i>	Developmental education courses taken					
		Reading		Writing		Math	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	104	11.7	133	14.9	296	33.2
All SDV students	525	86	16.4	109	20.8	201	38.3
SDV+	309	34	11.0	48	15.5	95	30.7
SDV–	216	52	24.1	61	28.2	106	49.1
Total student sample	1,416	190	13.4	242	17.1	497	35.1

Further analyses were conducted to gain insight into and make comparisons about college performance variables and persistence among the five groups: total student sample, non-SDV students, all-SDV students, SDV+ students, and SDV– students. These analyses addressed research questions 1 and 2.

Academic progress. For this study, research question 3 was: What is the difference in academic progress among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course? Descriptive statistics of frequencies and cross-tabulations for the demographic variables of age, gender, race/ethnicity, first-generation status, Pell grant eligibility, COMPASS cut scores, and academic progress are found in Table E.1 (Appendix E).

For the total student sample, the percentages of students progressing academically (51.1%) and not progressing (48.9%) were almost evenly split (Table 4.9). For the full-time CCC general student population as a whole, 45.0% progressed academically in Fall 2011 and 48.7% progressed academically in Fall 2012. For non-SDV students, the data showed the

Table 4.9

Comparison of Academic Progress by SDV Group

Group	Total	Did not progress academically		Progressed academically	
	<i>n</i>	<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	476	53.4	415	46.6
All SDV students	525	248	47.2	277	52.8
SDV+	309	62	20.1	247	79.9
SDV–	216	186	86.1	30	13.9
Total student sample	1,416	724	51.1	692	48.9

difference between academic progress and not achieving academic progress was 46.6% and 53.4%, respectively; however, for all SDV students, nearly the opposite was found with 52.8% progressing academically and 47.2% not progressing academically. In addition, comparing the two groups of SDV students, SDV– students progressed academically at the rate of only 13.9%, whereas SDV+ students progressed at the rate of 79.9%. Further analysis was warranted to gain a better understanding of differences between student groups.

In order to examine characteristics between groups in relation to academic progress, demographic variables and coursework cross-tabulations were run (Appendix E). Across all sample groups, White students were more likely to progress academically and were 24 years old or younger. Females were more likely than were males to progress academically except in the non–SDV group (51.7%). When investigating developmental coursework taken in relation to academic progress, the lowest percentages across groups were found for students who needed to enroll in three developmental courses. Results reported for Pell grant eligibility showed that, across groups, students were more likely to progress academically if they were of higher socioeconomic status.

Conducting the non-SDV logistic model predictions using the SDV+ student demographics showed that 51% of non-SDV students progressed academically compared to 79.9% of the SDV+ students. This provides tentative evidence that, although students with the same demographic characteristics as successful SDV students were already more likely to progress academically, their predicted mean probabilities were still not as high as those students who were successful in the SDV course. By predicting probabilities through this calculation, a relationship of successfully completing the SDV course (SDV+) and progressing academically at a higher rate than the non-SDV students was found.

Persistence. Research question 4 was: What is the difference in persistence among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course? To address this question, descriptive statistics of frequencies and cross-tabulations for the demographic variables of age, gender, race/ethnicity, first-generation status, Pell grant eligibility, COMPASS cut scores, academic progress, and persistence were analyzed (see Table E.2 in Appendix E). Persistence, for this study, was defined as students who were enrolled and attending on the census date in the subsequent semester.

For the total student sample, 1,038 students (73.3%) persisted to the subsequent spring semester. For the full-time CCC student population as a whole, the persistence rate was 76.9% for Fall 2011 and 78.7% for Fall 2012. Comparing persistence rates by sample groups, 78.7% of the all-SDV students persisted and 70.1% (625 of 891) of non-SDV students persisted (Table 4.10). Comparing subgroups of SDV students, the persistence rate of the SDV+ group was 93.5%; 289 of the 309 who successfully completed the SDV course enrolled in spring semester. However, the persistence rate for SDV– students was much

Table 4.10

Comparison of Persistence by SDV Group

Group	Total	Did not persist		Persisted	
	<i>n</i>	<i>n</i>	%	<i>n</i>	%
Non-SDV students	891	266	29.9	625	70.1
All SDV students	525	112	21.3	413	78.7
SDV+	309	20	6.5	289	93.5
SDV-	216	378	26.7	1,038	73.3
Total student sample	1,416	92	42.6	124	57.4

lower (57.4%) with only 124 of the 216 students enrolling in the subsequent spring semester. Examining persistence across demographics through cross-tabulations revealed that females were most likely to persist, although for one group, non-SDV, males persisted at slightly higher rate than did females (70.5% versus 69.8%, respectively). Students who were traditional age (24 years old or younger) were more likely to have persisted, as were students who needed fewer developmental courses. First-generation students, for most sample groups, had a higher level of persistence than did non-first-generation students, although some percentages were similar.

Running the non-SDV logistic model predictions using the SDV+ student demographics revealed that 83% of non-SDV students persisted compared to 93.5% of the SDV+ students. This provides tentative evidence that, although students with the same demographic characteristics as successful SDV students were already more likely to persist, their predicted mean probabilities were still not as high as those students who were successful in the SDV course. By predicting probabilities through this calculation, a relationship of successfully completing SDV course (SDV+) and a higher rate of persistence than the non-SDV students was found.

Multivariate Analyses

The final two research questions for this study were:

5. To what extent, if any, do student demographics and college coursework predict academic progress? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework predict academic progress?
6. To what extent, if any, do student demographics, college coursework, and academic progress predict student persistence? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework and performance predict persistence?

Null hypotheses were developed for research questions 5 and 6 to identify the independent variables of input and/or environment, if any, that showed statistically significant relationships with the dependent variables of academic progress and fall-to-spring persistence. Given that the hypotheses of this study were based on the premise that there was an effect between taking the student success course and academic progress and persistence, the following questions null hypotheses were used:

- H₀₁. None of the seven demographic input or environment variables of age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework predict academic progress.
- H₀₂. None of the seven demographic input or environment variables of age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework or college performance predict persistence.

Pearson point-biserial correlation and hierarchical multiple regression inferential statistical procedures were employed to test hypotheses and study the predictability of variables in relation to academic progress and persistence. Pearson point-biserial correlation, used when one variable is dichotomous, was conducted to measure the size and direction of associations between the independent variables and the dependent variables of academic progress and fall-to-spring persistence. No correlations above .50 were found (see Tables F.1 and F.2 in Appendix F). This indicates that multicollinearity was unlikely to be a problem and that the data were suitably correlated with the dependent variables for examination through multiple regression.

Pearson Point-Biserial Correlations

To investigate if there was a statistically significant association between the input variables of age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework, correlations were computed with the acceptable significance level set at $p \leq .05$. This level of significance allowed for fewer than five chances out of 100 that a relationship between variables occurred due to chance.

Academic progress. The results of the Pearson point-biserial analysis, in regards to the all-SDV group, identified that of the input variables, first-generation status, $r = .11$, $n = 523$, $p < .01$, and COMPASS cut scores, $r = .09$, $n = 523$, $p < .05$, had a positive significant relationship at $p < .05$; gender, $r = .14$, $n = 523$, $p < .001$ (Table 4.11). Moreover, enrolling in the SDV course, $r = .65$, $n = 523$, $p < .001$, had a highly significant relationship with academic progress. Developmental education courses, $r = -.16$, $n = 523$, $p < .001$, and minority status, $r = -.13$, $n = 523$, $p < .01$, showed a negative relationship with academic progress.

Table 4.11

Point-Biserial Correlations of Independent Variables with Academic Progress

Variables	Total sample (N = 1,416)		Non-SDV (n = 891)		All SDV (n = 525)		SDV+ (n = 309)		SDV- (n = 216)	
	Correlation	Sig. ^a	Correlation	Sig. ^a	Correlation	Sig. ^a	Correlation	Sig. ^a	Correlation	Sig. ^a
Inputs										
Age	-.04	.130	-.05*	.150	-.01	.940	.08	.158	-0.02	.780
Gender	.09***	.001	.06	.090	.14***	.001	.08	.170	0.03	.710
First generation	.08**	.010**	.56*	.100	.11**	.010	.10	.088	-0.05	.440
Minority status	-.17***	.001	-.18***	.001	-.13**	.010	-.07	.200	-0.05	.500
Pell grant eligibility	-.10***	.001	-.12***	.001	-.50	.230	-.03	.59	0.08	.230
COMPASS cut scores	.12***	.001	.15***	.001	.09*	.040	.07	.210		
Environments										
Developmental education courses	-.11***	.001	-.07*	.020	-.16***	.001	.01	.800	-0.09	.180
Outputs										
Persistence	.47***	.001	.47***	.001	.45**	.010	.23	.001***	0.29	.001***

^a2-tailed.* $p < .05$. ** $p < .01$. *** $p < .001$.

For non-SDV students, Pell grant eligibility, $r = -.12$, $n = 799$, $p < .001$; minority status, $r = -.18$, $n = 799$, $p < .001$; and developmental education courses, $r = -.07$, $n = 799$, $p < .05$, were identified as having negative linear correlated associations with academic progress. COMPASS cut scores, $r = .15$, $n = 799$, $p < .001$, was identified as having a positive linear correlated association with academic progress. This higher level of significance allows for less than one chance out of 100 or one chance out of 1,000 that the relationship occurred due to chance.

Persistence. The results of the Pearson point-biserial analysis, in regards to the all SDV group, identified that of the input variables, gender, $r = .10$, $n = 523$, $p < .05$; academic progress, $r = .45$, $n = 523$, $p < .001$ had positive linear correlations with persistence (Table 4.12). Taking developmental education courses, $r = -.12$, $p < .01$, $n = 523$, had the only negative linear correlation with persistence.

Conducting the same analysis for non-SDV students on the output variable of persistence revealed that student age, $r = -.09$, $n = 799$, $p < .01$; minority status, $r = -.20$, $n = 799$, $p < .001$; and taking developmental education courses $r = -.08$, $n = 799$, $p < .05$, were identified as having negative linear correlations with persistence. COMPASS cut scores, $r = .16$, $n = 799$, $p < .001$; first-generation status, $r = .11$, $n = 799$, $p < .001$; and academic progress, $r = .47$, $n = 799$, $p < .001$, were identified as having positive linear correlations with academic progress at the highest level of significance ($p < .001$).

Although Pearson point-biserial correlations identified linear correlated associations, multiple regression analyses were conducted in order to study the predictive measures of each input variable on academic progress and fall-to-spring persistence for two groups: non-SDV students and all SDV students.

Table 4.12

Point-Biserial Correlations of Independent Variables with Persistence

Variables	Total sample (N = 1,416)		Non-SDV (n = 891)		All SDV (n = 525)		SDV+ (n = 309)		SDV- (n = 216)	
	Correlation	Sig. ^a	Correlation	Sig. ^a	Correlation	Sig. ^a	Correlation	Sig. ^a	Correlation	Sig. ^a
Inputs										
Age	-.08***	.010	-.09	.010	-.01	.870	.03	.600	.01	.158
Gender	.05	.197	-.01	.810	.10*	.020	.02	.690	.06	.170
First generation	.07**	.010	.11***	.001	.02	.690	-.02	.680	-.06	.088
Minority status	-.17***	.001	.20***	.001	-.09*	.050	-.04	.450	-.02	.200
Pell grant eligibility	-.05	.050	-.06	.070	-.02	.670	-.02	.780	.06	.590
COMPASS cut scores			.16***	.001	.07	.110	.04	.510		.210
Environments										
Developmental education courses	-.09***	.001	-.08	.020	-.16***	.001	.04	.520	-.76	.800
Outputs										
Academic progress	.47***	.001	.47	.001	.45**	.010	.23***	.001	.29***	.001***

^a2-tailed.* $p < .05$. ** $p < .01$. *** $p < .001$.

Regression Analyses

This research focused on academic progress and fall-to-spring persistence of students in the sample studied. Multiple regression analyses were employed for two groups, non-SDV students and all SDV students. Examining the dataset using the SPSS program revealed that no cases needed to be excluded; as a result, the final sample of 1,416 community college students was used for the analyses. Multiple regressions, using the Enter method, were employed to observe changes in significance of variable relationships between models. Astin's (1993) I-E-O conceptual model was used to make sense of the data. The variables used for this study included demographic input factors of age, gender, race/ethnicity, first-generation status, Pell grant eligibility, COMPASS scores, college coursework (i.e., developmental education courses and SDV 108), and academic progress (when employing the regression for persistence). Each dependent variable, academic progress, and fall-to-spring persistence, was used as separate outputs when employing the regression model for the two groups.

Academic progress as the dependent variable

Non-SDV students. Non-SDV students ($n = 891$) was one of the groups examined in this study. The predictor variables entered into the regression equation in three models on the dependent variable are indicated in Table 4.13. In Model 1, student demographic variables were entered into the regression. For Model 2, the pre-entry academic characteristic COMPASS cut scores was added into the equation. For the third model, college coursework (i.e., developmental education courses), was entered. Included in Table 4.13 is the Cox-Snell coefficient of determination (R^2) to indicate how well the linear prediction fit the data and the standardized regression coefficient (β) to show the direct

Table 4.13

Summary of Regression Analysis for Variables Predicting Non-SDV Student Academic Progress (N = 891)

Variables	Standardized regression coefficients (β)		
	Model 1	Model 2	Model 3
Inputs			
Gender	1.42*	1.56**	1.56**
Age category	1.15	1.18	1.18
Pell grant eligibility	0.69*	0.71*	0.71*
First-generation status	1.05	0.97	0.98
Race			
White (indicator variable)			
Black	0.23***	0.27***	0.27***
Hispanic	0.99	1.10	1.10
Asian	1.03	1.08	1.08
Native American	0.48	0.47	0.48
Unknown	0.60*	0.60*	0.60*
COMPASS cut score		1.19	1.15*
Environment			
Developmental education courses			0.92
R^2	0.071	0.078	0.079

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

comparison of the relative strengths of relationships between variables. A complete table of unstandardized (B) coefficients, standard errors, Wald statistics, standardized coefficients (β), and probabilities (p) can be found in Table G.1 (Appendix G).

In Model 1, gender, $\beta = 1.42$, $p < .05$, had a positive beta coefficient. Two race/ethnicity categories, Black, $\beta = .24$, $p < .001$, and unknown, $\beta = .60$, $p < .03$, as well as Pell grant eligibility, $\beta = .60$, $p < .05$, had a negative association with academic progress. After entering the input variable COMPASS cut scores in Model 2, gender, $\beta = 1.56$, $p < .01$, continued to have a positive association along with the added variable, COMPASS cut scores, $\beta = 1.19$, $p < .01$. Pell grant eligibility, $\beta = .71$, $p < .05$, the two race categories of

Black, $\beta = .27, p < .001$, and unknown, $\beta = .61, p < .05$, continued to be negatively associated with academic progress.

In Model 3, of the seven independent variables entered into the regression, three had negative final beta coefficients. Among non-SDV students, Black (race), $\beta = .27, p < .001$, and unknown race, $\beta = .61, p < .05$, students were negatively associated with academic progress. For non-SDV students, race/ethnicity of Black and unknown race were associated (at 73% and 39%, respectively) with lower odds of progressing academically. The independent variable, Pell grant eligibility also resulted in a negative association, $\beta = .71, p < .05$, with the dependent variable of academic progress, which suggests Pell grant eligible students have 29% lower odds of progressing academically.

Two independent variables that had significant positive associations with the dependent variable academic progress, were gender, $\beta = 1.56, p < .01$, and COMPASS cut scores, $\beta = 1.15, p < .05$. This can be interpreted to suggest that female non-SDV students have 56% higher odds of progressing academically. Students who have higher cut scores (not requiring as many developmental education courses) were associated with 15% higher odds of progressing academically. A complete table of unstandardized (B) coefficients, standard errors, Wald statistics, standardized coefficients (β), and probabilities (p) can be found in Table G.1 (Appendix G).

In summary, using age, gender, race/ethnicity, first-generation status, Pell grant eligibility, COMPASS scores, and developmental education courses as predictors, a multiple regression analysis was conducted to predict academic progress for non-SDV students. A test of the full model against a constant-only model was statistically significant, indicating

that, as a set, the predictors reliably distinguished between progressing academically and not progressing academically, $\chi^2 = 72.911$, $df = 13$, $p < .001$.

The Cox–Snell's R^2 was .08, indicating a significant relationship between prediction and grouping. Prediction success overall was 60.3% (59.5% for not progressing academically and 61.2% for progressing academically). The Wald criterion demonstrated that race (negatively) and female and COMPASS cut scores (positively) made a significant contribution to prediction at a level of at least $p < .05$.

SDV students. A regression model, similar to the model for non-SDV students, examined SDV students ($n = 525$) and academic progress (see Table 4.14). In Model 1, student demographic variables were entered into the regression. Gender, $\beta = 1.92$, $p < .001$, and first-generation status, $\beta = 1.65$, $p < .01$ demonstrated the positive influence of the five independent variables. Black students had a statistically significant negative association with academic progress, $\beta = .25$, $p < .001$. In Model 2, the COMPASS cut score variable was added. Gender, $\beta = 1.97$, $p < .001$, and first-generation status, $\beta = 1.60$, $p < .05$, continued to demonstrate significant positive influence, and Black race, $\beta = .28$, $p < .01$, continued to have a statistically significant negative association with academic progress. In Model 3, college coursework (i.e., developmental education courses) was entered and showed a statistically significant negative influence on academic progress, $\beta = .74$, $p < .01$, and Black race continued to have a negative association, $\beta = .32$, $p < .01$, with academic progress. Gender, $\beta = 2.04$, $p < .001$, continued to be a positive influence along with first-generation status, $\beta = 1.56$, $p < .05$.

Table 4.14

Summary of Regression Analysis for Variables Predicting SDV Student Academic Progress (N = 525)

Variables	Standardized regression coefficients (β)			
	Model 1	Model 2	Model 3	Model 4
Inputs				
Gender	1.91***	1.97***	2.04***	1.45
Age category	1.27	1.26	1.36	1.47
Pell grant eligibility	0.85	0.87	0.83	1.13
First-generation status	1.65**	1.60*	1.56*	1.34
Race				
White (indicator variable)				
Black	0.25***	0.28**	0.32**	0.36*
Hispanic	1.04	1.07	1.24	1.26
Asian	0.70	0.71	0.66	1.14
Native American	0.00	0.00	0.00	0.00
Unknown	1.61	1.62	1.54	1.62
COMPASS cut score		1.09	0.99	1.13
Environment				
Developmental education courses			0.74**	1.00
SDV course				23.89***
R^2	0.074	0.076	0.09	0.39

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

In Model 4, of the eight independent variables entered into the regression, only one had a negative final beta coefficient, $\beta = .36$, $p < .05$. Among SDV students, Black students were associated with 64% lower odds of progressing academically. One independent variable that had a positive statistically significant influence on the dependent variable, academic progress, was enrolling in the SDV course, $\beta = 23.89$, $p < .001$, with the significance at the more stringent significance level of $p < .001$. A complete table of unstandardized (B) coefficients, standard errors, Wald statistics, standardized coefficients (β), and probabilities (p) can be found in Table G.2 (Appendix G).

In summary, a multiple regression analysis was conducted to predict academic progress for SDV students using age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and college coursework as predictors. A test of the full model against a constant-only model was statistically significant, indicating that, as a set, the predictors reliably distinguished between students who were progressing academically and those who were not, $\chi^2 = 258.731$, $df = 12$, $p < .001$.

The Cox–Snell's R^2 of .39 indicated a significant relationship between prediction and grouping. Prediction success overall was 82.5% (75.8% for not progressing academically and 88.4% for progressing academically). The Wald criterion demonstrated that race (negatively) and taking the SDV course (positively) made significant contributions to the prediction ($p < .05$). The odds ratio indicates that, when successful in the SDV course, a student is 23 more times likely to progress academically.

Persistence as the dependent variable

Non-SDV students. Non-SDV student demographic variables were entered into the regression in Model 1 (see Table 4.15). Only one predictor was indicated, Black (race), and it had a significant negative association, $\beta = .30$, $p < .001$. In Model 2, the pre-entry academic characteristic COMPASS cut scores was entered into the equation. Black (race) continued to have a significant negative association, $\beta = .35$, $p < .001$, with persistence. The variable COMPASS scores, $\beta = 1.16$, $p < .05$, was added and showed a significant positive association with the dependent variable. In Model 3, college coursework (i.e., developmental education courses) was added. Black (race) continued to have a significant negative association, $\beta = .34$, $p < .001$, with persistence, but the COMPASS scores variable was no longer a significant predictor.

Table 4.15

Summary of Regression Analysis for Variables Predicting Non-SDV Student Persistence (N = 891)

Variables	Standardized regression coefficients (β)			
	Model 1	Model 2	Model 3	Model 4
Inputs				
Gender	1.01	1.087	1.09	0.87
Age category	0.91	0.922	0.92	0.84
Pell grant eligibility	1.08	1.116	1.12	1.39
First-generation status	1.36	1.281	1.28	1.39
Race				
White (indicator variable)				
Black	0.29***	0.34***	0.34***	0.53**
Hispanic	0.87	0.946	0.95	0.89
Asian	0.52	0.544	0.54	0.44
Native American	0.62	0.610	0.62	0.87
Unknown	0.89	0.895	0.89	1.10
COMPASS cut score		1.160*	1.13	1.07
Environment				
Developmental education courses			0.93	0.95
Academic progress				13.14***
R^2	0.055	0.059	0.059	.243

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

In Model 4 college performance (i.e., academic progress, as defined by a GPA greater than or equal to a 2.00 and 67% of credits attempted were earned) was entered. Of the nine independent variables entered into the regression, only one had a negative final beta coefficient. Black (race) continued to report a negative association, $\beta = .53$, $p < .01$, only at a lower level in relation to the dependent variable. Among non-SDV students, Black students were associated with 47% lower odds of persisting. Academic progress, $\beta = 13.14$, $p < .001$, was the only significant positive predictor on the dependent variable. A complete table of unstandardized (B) coefficients, standard errors, Wald statistics, standardized coefficients (β), and probabilities (p) can be found in Table G.3 (Appendix G).

In summary, a multiple regression analysis was conducted to predict persistence for non-SDV students using age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, college coursework, and academic progress as predictors. A test of the full model against a constant-only model was statistically significant, indicating that, as a set, the predictors reliably distinguished between students who were progressing academically and those who were not, $\chi^2 = 248.116$, $df = 12$, $p < .001$.

The Cox–Snell's R^2 of .24 indicated a significant relationship between prediction and grouping. Prediction success overall was 75.6% (46.2% for not persisting and 88.0% for persisting). The Wald criterion demonstrated that race (negatively) and progressing academically (positively) made significant contributions to prediction ($p < .05$). The odds ratio indicates that a student progressing academically was 13 more times likely to persist.

SDV students. For this analysis, student demographic variables were entered into the regression for all SDV students in Model 1 (see Table 4.16). One variable, gender, $\beta = 1.66$, $p < .05$, had a statistically significant positive association with the dependent variable and another variable, Black (race), $\beta = .31$, $p < .001$, had a significant negatively association. For Model 2, the pre-entry academic characteristic COMPASS cut scores was added to the equation. Gender, $\beta = 1.71$, $p < .05$, continued to have a statistically significant positive association with the dependent variable, and Black, $\beta = .35$, $p < .01$, continued to have a significant negative association with the dependent variable but at a higher level of significance. For the third model, college coursework (i.e., developmental education courses) was entered. Again, gender, $\beta = 1.75$, $p < .05$, continued to have a significant positive association and Black, $\beta = .41$, $p < .05$, continued to have a statistically significant negative association, but at a lower level of significance once again. Another statistically

Table 4.16

Summary of Regression Analysis for Variables Predicting SDV Student Persistence (N = 525)

Variables	Standardized regression coefficients (β)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Inputs					
Gender	1.66*	1.71*	1.75*	1.24	1.15
Age category	1.13	1.11	1.16	1.15	1.11
Pell grant eligibility	0.92	0.94	0.89	1.10	1.07
First-generation status	1.10	1.07	1.03	0.82	0.80
Race					
White (indicator variable)					
Black	0.31***	0.35**	0.41*	0.50	0.58
Hispanic	1.27	1.30	1.48	1.47	1.39
Asian	0.88	0.91	0.86	1.27	1.29
Native American	0.18	0.19	0.20	0.22	0.46
Unknown	0.66	0.66	0.63	0.48	0.39
COMPASS cut score		1.10	1.01	1.11	1.08
Environment					
Developmental education courses			0.77*	0.97	0.98
SDV course				10.72***	3.82***
Academic progress					7.51***
R^2	0.035	0.036	0.045	0.193	0.241

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

significant negative predictor, developmental education courses, $\beta = .77$, $p < .05$, was reported in this block.

The fourth block added the SDV 108 course. The only statistically significant positive association with the dependent variable was the SDV course, $\beta = 10.72$, $p < .001$. The independent variable academic progress was entered in Model 5. Of the nine independent variables entered into the regression, two independent variables had significant positive final beta coefficients. Taking the SDV course was positively associated, $\beta = 3.82$, p

< .001, with the dependent variable as was academic progress, $\beta = 7.51$, $p < .001$. This can be interpreted to suggest students who are progressing academically (maintaining a GPA of 3.0 or above and completing 67% of credits attempted) and were successful in the SDV course had a higher level of persistence. A complete summary table of unstandardized (B) coefficients, standard errors, Wald statistics, standardized coefficients (β), and probabilities (p) can be found in Table G.4 (Appendix G).

In summary, a multiple regression analysis was conducted to predict persistence for SDV students using age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, college coursework, and academic progress as predictors. A test of the full model against a constant-only model was statistically significant, indicating that, as a set, the predictors reliably distinguished between students who persisted and those who did not, $\chi^2 = 144.579$, $df = 13$, $p < .001$.

The Cox–Snell’s R^2 value of .24 indicated a significant relationship between prediction and grouping. Prediction success overall was 80.4% (24.1% for not persisting and 95.6% for persisting). The Wald criterion demonstrated that successful completion of the SDV course and progressing academically made significant contributions to prediction ($p < .05$). Students who successfully completed the SDV 108 were three times more likely to persist than were those students who were unsuccessful in the course. Also, students who were progressing academically at the end of their fall semester were 7.5 times more likely to persist than those students who were unsuccessful in the course.

SDV 108 as the dependent variable. A multiple regression analysis was conducted to determine which independent variables predict SDV course success. The predictor

variables entered into the regression equation in three models on the dependent variable are indicated in Table 4. 17. In Model 1, student demographics were entered into the regression. Of the five independent variables entered into the regression, one out of three statistically significant predictors had a negative beta coefficient. In the race category, Black (race) was negatively associated with success in the SDV course, $\beta = .36, p < .01$. Gender, $\beta = 2.06, p < .001$, and first-generation status, $\beta = 1.23, p < .01$, had statistically significant positive associations with the dependent variable.

For the second model the pre-entry academic student characteristic COMPASS cut scores was added. Gender, $\beta = 2.07, p < .001$, and first-generation status, $\beta = 1.61, p < .05$, had statistically significant positive associations with the dependent variable. Black (race) had a statistically significant negative association, $\beta = .37, p < .01$. In Model 3, developmental education courses were entered. In that model, the two significant positive indicators were gender, $\beta = 2.22, p < .05$, and first-generation status, $\beta = 1.52, p < .05$. The two statistically significant negative predictors were developmental education courses, $\beta = .62, p < .001$, and Pell grant eligibility, $\beta = .67, p < .001$. One negative predictor, Black (race) was just beyond being significant ($p = .06$), having been statistically significant throughout the regression. In Model 4, the academic progress variable was entered. The only negatively statistically significant association in Model 4 was developmental education courses, $\beta = .62, p < .001$. Two positive statistically significant associations with SDV course success were gender, $\beta = 1.77, p < .05$, and academic progress, $\beta = 23.83, p < .001$.

In block five, persistence was entered into the regression. Of the nine independent variables entered, only one had a negative final beta coefficient, $\beta = .62, p < .001$. That

Table 4.17

Summary of Regression Analysis for Variables Predicting SDV Success (N = 525)

Variables	Standardized regression coefficients (β)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Inputs					
Gender	2.06***	2.07***	2.22***	1.77*	1.75*
Age category	1.01	1.01	1.12	0.88	0.88
Pell grant eligibility	0.73	0.73	.67*	0.63	0.61
First-generation status	1.23**	1.61*	1.52*	1.29	1.36
Race					
White (indicator variable)					
Black	0.36**	0.37**	0.47	0.93	1.07
Hispanic	0.89	0.90	1.14	0.98	0.90
Asian	0.52	0.52	0.45	0.43	0.44
Native American	0.37	0.38	0.40	1.89	2.41
Unknown	1.36	1.37	1.26	0.93	1.10
COMPASS cut score		1.03	0.89	0.83	0.83
Environment					
Developmental education courses			0.62***	0.62***	0.62***
Academic progress				23.83***	16.74***
Persistence fall to spring					3.90***
R^2	.069	.069	.105	.399	.420

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

negative relationship suggests that a student who is at a lower level of academic ability, thus taking developmental education courses, also was challenged in the SDV 108 course.

Three variables had a significant positive association with the dependent variable. Female students, $\beta = 1.75$, $p < .05$, had 75% higher odds of being successful in SDV 108. Academic progress, $\beta = 16.74$, $p < .001$, and a higher level of persistence, $\beta = 3.90$, $p < .001$, also showed significant positive associations with success in SDV 108, indicating that students who showed academic progress and persistence were students who were more successful in the SDV 108 course.

In summary, a multiple regression analysis was conducted to predict student success in the SDV 108 course using age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and college coursework as predictors. A test of the full model against a constant-only model was statistically significant, indicating that, as a set, the predictors reliably distinguished between successful and unsuccessful students, $\chi^2 = 285.969$, $df = 13$, $p < .001$. A table summarizing the unstandardized (*B*) coefficients, standard errors, Wald statistics, standardized coefficients (β), and probabilities (*p*) can be found in Table G.5 (Appendix G).

The Cox–Snell R^2 of .420 indicates a significant relationship between prediction and grouping. Prediction success overall was 82.9% (81.9% for unsuccessful SDV students and 83.5% for successful SDV students). The Wald criterion demonstrated that gender ($p = .03$), academic progress ($p = .001$), and persistence ($p = .001$) made significant positive contributions to prediction. The one negatively associated predictor, developmental courses ($p = .001$) can be interpreted to suggest that students who enroll in developmental education courses were associated with 38% lower odds of success in the SDV course.

Summary of regression analyses for academic progress and persistence. In summary, research questions 5 and 6 asked to what extent, if any, do student demographics (students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility) and/or college coursework predict academic progress or persistence, respectively.

Pearson point-biserial correlation analysis indicated that for the non-SDV group, three variables (Pell grant eligibility, $r = -.12$, $p < .001$; minority status, $r = -.18$, $p < .001$; and developmental education courses, $r = -.07$, $p < .001$), were identified as having negative linear correlated associations with academic progress and only one variable (COMPASS cut

scores, $r = .15, p < .001$), was identified as having a positive association with academic progress. Three out of the four variables, gender excluded, retained their significance throughout the regression. Furthermore, for the SDV group, point-biserial correlation analysis indicated that four variables (first-generation status, $r = .11, p < .05$; COMPASS cut scores, $r = .09, p < .05$; gender, $r = .14, p < .001$; and enrolling in the SDV course, $r = .65, p < .001$), demonstrated statistically significant positive relationships with academic progress and two variables (developmental education courses, $r = -.16, p < .001$, and minority status, $r = -.13, p < .01$), demonstrated statistically significant negative relationships with academic progress. Four of the five variables, COMPASS scores excluded, retained their significance. Other variables that demonstrated no significant effect were age categories and Pell grant eligibility. Thus, the first null hypothesis was rejected.

Regarding persistence, the point-biserial correlation analysis indicated that for the non-SDV group, three variables (age, $r = -.09, p < .01$; minority status, $r = -.20, p < .001$; and developmental education courses, $r = -.08, p < .05$) had statistically significant negative associations with persistence and three variables (COMPASS cut scores, $r = .16, p < .001$; first-generation status, $r = .11, p < .001$; and academic progress, $r = .47, p < .001$), were identified as having statistically significant positive associations with persistence. Only two variables, Black race and academic progress, retained their statistical significance in the regression. For the SDV group, point-biserial correlation analysis indicated that three variables (gender, $r = .10, p < .05$; academic progress, $r = .45, p < .001$; and taking the SDV course, $r = .43, p < .001$) had statistically significant positive linear correlated associations with persistence and that taking developmental education courses, $r = -.12, p < .01$, was the only statistically significant negative linear correlation for persistence. Of the variables, only

two, academic progress and the SDV course, retained their statistical significance ($p < .001$). Thus, the second null hypothesis was rejected.

Summary

This study examined the academic progress, as measured by GPA and credits earned, and persistence of first-time, full-time, degree-seeking students who enrolled in the student success course SDV 108 versus those who did not enroll in SDV 108. The outcomes were also studied for their relationship to demographics including age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework. Data were collected on students who did not take the SDV course (Fall 2011) and students who enrolled in the SDV course (Fall 2012). This chapter presented findings from this quasi-experimental study using descriptive statistics including frequencies and cross-tabulations, Pearson point-biserial correlations, and hierarchical regression. Findings showed that students who participated in SDV 108 persisted at higher rate than did students who did not participate in the course. Moreover, students who enrolled in the SDV 108 had a higher level of academic progress than did students who did not participate in the course. Two null hypotheses were tested and ultimately rejected. Chapter 5 includes a discussion and implications of the findings as well as recommendations and conclusions.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

Introduction

Although student persistence has long interested institutions of higher education, pressure has increased in recent years to find strategies to make a positive impact. As stated in Provasnik and Planty's (2008) report, *Community Colleges: Special Supplement to the Condition of Education*, the average nationwide 2007 attrition rate, which included both full-time and part-time students, was 45% for first-time community college students. Research on retention has focused on 4-year residential institutions, the findings of which are not easily generalized to the diverse population of community colleges. Mohammadi (1996) stated that two primary reasons that the traditional theories developed at universities are not well suited for retention studies in community colleges are that demographic and socioeconomic factors differ between 4-year and 2-year institutions. The present study adds to the existing literature on community college student academic progress and persistence.

The overall purpose of this study was to identify, and further understand, key factors that influence academic progress and persistence at the community college. Two theories were used for the framework for this study: (a) Rendón's (1994) validation theory and (b) Van Maanen and Schein's (1979) organizational socialization theory. In addition, Astin's (1993) I-E-O model was used as the basis for the inquiry into individual variables and to make sense of the data. This model asserts that the impact on a given outcome of the college experience generally, or a specific activity within the college experience, is a function of (a) the precollege characteristics of the student and (b) the college environment within which the student engages in a given program, activity, or curriculum.

This quasi-experimental research study used descriptive statistics with frequency distributions and cross-tabulations to provide a profile of the population and sample and to investigate relationships. Pearson point-biserial correlation and multiple regression inferential statistical procedures were employed to study the predictability of the variables for academic progress and persistence from fall to spring semesters. Hierarchical logistic regression was used to observe changes in the significance of relationships of the variables between models. Variables that could impact student academic progress and persistence were identified based on a review of the available literature. The I–E–O model, which includes input and environmental factors, is a model used for predicting retention. Effective assessment findings should provide greater understanding of connections between the practice and outcomes of education (Astin, 1993).

This study was conducted at a midwestern community college and included a sample of 1,416 community college students who were categorized into two separate samples, with one sample group further divided into subgroups, for further analysis. The samples studied were designated as non-SDV students and SDV students. SDV students were then further subdivided into successful SDV students (SDV+) and unsuccessful students (SDV–). The non-SDV sample consisted of 891 first-time, full-time, degree-seeking students who did not enroll in the SDV course in Fall 2011. The SDV sample consisted of 525 first-time, full-time, degree-seeking students who enrolled in the SDV course in Fall 2012. The SDV subgroups consisted of 309 SDV+ and 216 SDV– students.

The following research questions were addressed in this study: (1) What are the student demographics at a midwestern community college? (2) How do SDV 108 (College Experience course) students and non-SDV 108 students differ by age, gender, race/ethnicity,

first-generation and Pell grant eligibility status, and COMPASS scores? (3) What is the difference in academic progress among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course? (4) What is the difference in persistence among students who successfully completed the success course, students who did not successfully complete the success course, and students who did not enroll in the success course? (5) To what extent, if any, do student demographics and college coursework predict academic progress? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework predict academic progress? (6) To what extent, if any, do student demographics, college coursework, and academic progress predict student persistence? Specifically, do students' age, gender, race/ethnicity, COMPASS scores, first-generation status, Pell grant eligibility, and/or college coursework and performance predict persistence?

The statistical research of the College Experience: Planning Your Future Now course was designed to provide insight into the effectiveness of instituting the mandatory graduation requirement for first-time, full-time, degree-seeking students. Specifically, this study was initiated as a follow-up to a previous study, the Mandatory Placement Project, to provide further analysis of the student success course environment. It also was intended to identify predictors of academic progress and fall-to-spring persistence. Included in this final chapter is a discussion of the key findings; limitations of the study; implications for policy, practice, and future research; and conclusions.

Discussion

This discussion section is organized in the following manner. First, a comparison is made between the demographics of two groups: non-SDV students and SDV students. Second is a discussion regarding how the dependent variable, academic progress, compares between SDV and non-SDV groups, considering the demographic variables along with the regression results. Third, the dependent variable, persistence, is discussed regarding the differences in the demographic variables and regression results between SDV and non-SDV groups.

Demographics

To analyze the demographics, descriptive statistics with frequencies were used. For most comparisons, the two groups studied were non-SDV students ($n = 891$) and SDV students ($n = 525$). The majority of the non-SDV group comprised students who were male, 24 years of age or younger, White, first generation, and Pell grant eligible. Their academic aptitude, as defined by if they met all COMPASS cut scores was higher (36%) than that of the SDV students, of which only 28% met all cut scores for developmental education courses.

The two developmental education courses with the highest percentage of enrollment across groups was mathematics; writing had second highest percentage. This study found that, comparing fall GPA between groups, even though non-SDV students tested higher on the COMPASS test, student fall semester GPA was lower ($M = 1.72$) as compared with SDV+ students ($M = 2.73$), with the lowest GPA for SDV- students ($M = 0.80$). This suggests that pre-entry academic ability does not necessarily predict student success during students' first semester, as SDV students reported a higher level of persistence. Research

released in 2012 found that commonly used placement tests, such as the COMPASS, fail to adequately determine whether incoming college students need remedial work (Fain, 2012). However, Scott-Clayton (2012) found COMPASS test scores as being predictive of success in math and also was more predictive of who was likely to do well in college-level coursework than of who was likely to fail.

When examining student demographics and characteristics for the SDV group of students, the majority was female, 24 years of age or younger, White, first generation, and Pell grant eligible. Comparing race/ethnicity, 65.8% of non-SDV students were White as were 74.3% of the SDV students. Noteworthy in this particular study is that minoritized population participation in the student success course for Black students was not in proportion to overall enrollment at the institution. CCC Black student enrollment was 17.6% fall 2011 and 11.6% in fall 2012. Black students were twice as likely to be in the non-SDV sample group; however, a third more Hispanic students enrolled in SDV course. CCC students were advised to take this course their first semester. This suggests CCC should explore strategies to increase Black student participate in SDV 108 their first semester. Jacobs and Bowman (2003) stated that a separate student success course for a specific group of students may be warranted if that student population is recognized as a more at-risk population. The role of academic advising in student retention has seen relatively little exploration (Hossler, 2005).

In summary, this study's findings of demographic and characteristic differences between sample groups guided this study in employing hierarchical regressions for each dependent variable by group.

Academic Progress

Student academic progress was analyzed using student demographics and characteristic cross-tabulations, Pearson point-biserial correlations, and regression. Non-SDV students progressed academically at a lower rate compared with SDV students. Results showed that approximately 47% of non-SDV students progressed and 52.8% of SDV students progressed academically. Further examining the results, all age categories in the SDV group progressed academically at a higher rate than did the non-SDV group. This suggests that enrolling in the SDV course has a positive relationship for all ages of students. First-generation SDV students also had a higher level of success (57.2%), than did the non-SDV group (48.9%). First-generation students may not have the resources, outside of the classroom, for support or to answer questions about the unknown environment, which is one objective of the SDV course. Contrary to this study's findings, Pike and Kuh (2005) found that first-generation students were much less likely than their continuing-generation counterparts to be academically or socially engaged and also were less likely to integrate their college experiences successfully.

Most of the students in both the non-SDV and SDV groups were Pell grant eligible, which is indicative of socioeconomic status. The SDV group Pell grant eligible students reported higher academic progress. Under new U.S. Department of Education regulations, students lose their eligibility for aid, such as a Pell grant, if they are on academic probation for more than one semester and do not file a successful appeal. The previous limit was two semesters. To avoid academic probation, students should achieve a cumulative GPA of at least 2.0, successful completion of a certain percentage (usually 67%) of classes attempted (Ashford, 2012). Community colleges are going to be hurt by these changes, as a large

number of high-need students are unable to find other ways to pay tuition. This suggests that the SDV course may have a broader impact, as students need to meet the more stringent academic requirements set by the U.S. Department of Education.

Examining persistence in relation to academic progress revealed that persistence in both the SDV and non-SDV groups was over 60%. Approximately 10% of both groups were progressing academically but did not choose to enroll in the subsequent spring semester. This lack of persistence for community college students could suggest they are transferring to another institution, stopping out (possibly returning in a future semester), or dropping out of college. Students leave college for a mix of individual and institutional reasons: change of major, lack of money, and family demands, among others (Kuh et al., 2008; Braxton et al., 2004). Tracking what happens to community college students once they leave the college continues to be a challenge for most institutions.

Comparing regression results, the student characteristic that had a statistically significant negative association with academic progress for both groups was Black minority status. Grunder and Hellmich's (1996) study found that Black students who participated in a community college's college success program had a higher fall GPA and lower fall course failure than did those who did not participate, which is consistent with this study's findings for academic progress.

This study also found a positive association between females and academic progress. Making a comparison in the complete regression non-SDV model with the SDV model (without entering the SDV course), findings revealed that gender (female) had a statistically significant association with academic progress. Overall, females are more likely to progress

academically; however, gender did not remain statistically significant for the SDV group when entering the SDV course into the regression.

The overall academic progress for SDV students was 52.8%, compared to 46.6% for those in the non-SDV group. Comparing the subgroups of SDV students, SDV+ students progressed academically at a higher rate (79.9%) than did SDV– students (13.9%). In summary, the academic progress for SDV students was higher than for non-SDV students, with the lowest group being SDV– students. Why SDV– students did not succeed in the course was not investigated in the current study. In order to gain insight about the SDV– group, further information is needed to understand why these students did not succeed in the SDV course or progress academically. Possible factors for lack of SDV– progress or success include failure to attend class, failure to withdraw, or failing the coursework.

Persistence

Student persistence was analyzed through fall-to-spring persistence demographics and characteristics, Pearson point-biserial correlations, and regression. Research on the persistence of community college students is scarce, and even fewer studies address the differential predictors of persistence between adult and traditional-age students (Bers & Smith, 1991). The present study found that students 24 years of age or younger had a persistence rate between 70 and 80%. The nontraditional SDV student (25 years of age or older) reported higher persistence, which suggests nontraditional students acquire some benefit in taking the SDV course. Whether the student was first generation or not, for the SDV group, similar rates of persistence were reported; however, first generation non-SDV students had a higher persistence rate than did students from that group who were not first

generation. This finding is contrary to the literature, as Thayer (2000) found first-generation students, who are more concentrated in community colleges, are less likely to persist.

For gender, results for males and females in the non-SDV group were similar with approximately 70% of both males and females persisted. A greater difference was found in the SDV group, with males persisting at 74.2% and females persisting at 82.7%. Previous research has shown mixed results about gender and persistence. Three decades ago, males had a higher persistence rate than did females (Tinto, 1993). In 1998, Sydow and Sandel found that women persisted at a higher rate than did men. A more recent report by the U.S. Department of Education (Snyder & Dillow, 2010) stated that, in 2006–07, females of any race/ethnic group generally earned more degrees, including the community college associate's degree, than did their male counterparts.

Comparing Black and Hispanic students, the two largest minoritized populations groups, Hispanic students reported a higher persistence rate than did Black students. This finding should be investigated further to determine how to meet the needs of each minoritized population subgroup. Gaining an understanding of why certain subgroups of students are not persisting compared to other groups should be a priority for higher education institutions. Examining the subgroups, SDV+ Black students had a higher level of persistence than did non-SDV Black students. This is in agreement with Fidler and Godwin (1994), who found that Black students who completed a first-year orientation course persisted at a higher rate than did those who did not take the course.

Another noteworthy finding is the level of academic progress achieved by students who persisted from fall to spring semesters. Persisting, but not progressing academically, suggests that these students are motivated to continue despite their academic challenges. The

results of this study indicate that the students in the group that successfully completed the SDV course had the highest persistence to the spring semester compared to both those in the unsuccessful SDV group and those in the non-SDV group in relation to students who were not progressing academically. For SDV+ students, 82.3 % who were not progressing academically persisted from the fall to spring semester, whereas only 51.6% of SDV– students persisted.

Sidele and McReynolds (1999) found that students who enrolled in an orientation course earned higher cumulative GPAs as well as a higher ratio of credit hours and persisted at a higher rate than did students who did not enroll in an orientation course. Overall, in this study, persistence was reported as 70.1% for non-SDV students and 78.7% for SDV students. For the SDV subgroups, SDV+ student persistence was 93.5% and SDV– student persistence was only 57.4%. Rodriguez's (2003) study found that persistence from fall to spring semester for first-time, full-time, community college students is higher for students who enroll in the student success course than for those who do not enroll in the course.

Comparing other results, one student characteristic that was a negative predictor of persistence, similar to academic progress, was minoritized population status; for non-SDV students only, Black minority status represented a statistically significant negative association. Comparing the two largest race/ethnic groups, White and Black, White students persisted at a higher rate. Leppel (2002) also found that White students had higher persistence rates than did Black students, who are more likely to come from lower socioeconomic backgrounds.

The positive statistically significant association for students in both the non-SDV and SDV groups was academic progress. This suggests that students who are moving forward

academically toward their educational goals are more likely to return in the spring semester. As other research studies have shown, fall GPA is a predictor of persistence. Kahn and Nauta (2001) and Lufi, Parish-Plass, and Cohen (2003) found that first-year GPA is a strong predictor of second-year retention in face-to-face education programs. Contradictory findings have been reported in other studies. Robles's (2002) community college study found that there was no relationship between a first-year seminar and GPA, but that there was a relationship between enrollment in the course and persistence. The findings from Hall's (2007) study agreed with the relationship between increased persistence and first-year seminar participation, but once again, there were no significant differences found in GPA.

In summary, CCC has made the College Experience (SDV 108) student success course a mandatory graduation requirement for all full-time students seeking an Associate of Arts, Associate of Science, or an Associate of General Studies degree. Findings of this study suggest that, by taking the SDV 108 course, students are more likely to progress academically and persist from fall to spring semester. Further, findings show that certain subgroups of the population (i.e., Black students, nontraditional students) benefit from taking this course. This is in agreement with other research studies, such as those conducted by Derby and Smith (2004) and Zeidenberg et al. (2007), who found that students who enrolled in an orientation course were retained and succeeded at a higher level than did students who hadn't enrolled in an orientation course. Goodman and Pascarella (2006), through review of relevant studies, found that "evidence indicates that students who have benefited from participation in first-year seminars include both males and females; both minority and majority students; students of various ages; students living on or off campus; and regularly admitted students and at-risk students" (p. 27).

Theoretical Framework

For this study, two theories were used for the framework: (a) Rendón's (1994) validation theory and (b) Van Maanen and Schein's (1979) organizational socialization theory. First, in a validation model, institutional agents, not students, are expected to take the first step to not only promote involvement, but also to affirm students as knowers and valuable members of the college learning community. As of Fall 2012, with the newly implemented mandatory requirement of The College Experience (SDV 108) course, CCC has shown an institutional commitment by taking an active role in reaching out to students instead of assuming students will take the initiative. In addition, students are being advised to take SDV 108 their first semester; although some students choose to take it in a future semester. Validation is most effective when offered early on in a student's college experience, during the first year of college and during the first weeks of class.

Rendón (1994) found that students are more likely to persist if institutions help them be successful at negotiating the transition to college, becoming involved in campus academic and social life, and developing positive attitudes about their learning ability. The student success course is one strategy, an in-class opportunity, used to facilitate negotiating this transition. Many student success course competencies directly align with Rendón's (1994) validation theory. These competencies are that the student will be expected to: (a) demonstrate an understanding of program requirements, (b) demonstrate an understanding of essential academic information, (c) identify and learn academic skills necessary for student success, and (d) demonstrate knowledge of campus opportunities and resources. Another objective of this course is "to demonstrate the life skills necessary for student success," which includes understanding the importance of the development of supportive peer

relationships and which aligns with becoming involved in campus social life. The SDV 108 course curriculum addresses the two critical phases suggested by the validation theory that affect student retention: making the transition to college and making academic and social connections in college. The SDV course also includes objectives that incorporate student organizational socialization.

Organizational socialization is the process by which people “learn the ropes” of a particular organizational role. Historically, organizational socialization theory has been defined as “the manner in which the experiences of people learning the ropes of a new organizational position, status, or role are structured for them by others within the organization” (Van Maanen, 1978, p. 19). Socialization tactics are the ways in which the experiences of individuals in transition from one role to another are structured by others in the organization. CCC has incorporated socialization tactics into the SDV 108 course. The objectives that are in alignment with learning the ropes are described as: The student will be expected to (a) demonstrate an understanding of how to navigate basic information as a CCC student, (b) demonstrate the use of college technology, and (c) demonstrate knowledge of campus opportunities and resources. If successful, these experiences (as the organizational socialization theory predicts) foster the new student’s college identity and connection to the organization and increase their academic progress and persistence.

Voices of Students

Through the SDV 108 course survey, administered at midterm and again at the end of the semester, students had the opportunity to provide feedback about the course. Students reported the areas of strength for the course were the opportunity provided to complete an academic plan and to learn skills required for success, such as note taking, increased reading

rate, and time management (Midwestern community college task force, 2013). Rendón (1994) found that students are more likely to persist if they become involved in academic life, which is in alignment with the student responses to the SDV 108 course survey. Students reported that the socialization tactics learned were: knowing where to get help, learning about CCC, and learning about website/technology in order to navigate life on campus. Student self-reported responses of desirable academic behaviors, between midterm and end of semester, were: increased percentage in checking e-mail, using the library, meeting with an academic advisor outside of class, reading a campus newspaper, and talking to an instructor (other than the SDV instructor) outside of class. The increases in these behaviors suggest that students had been informed about how to become more academically engaged.

Related Research

Results of this study support claims made by educational researchers that increased academic progress and student persistence is realized by students taking a student success course. In this study, by targeting specific groups of students, insight was gained regarding the outcomes of academic progress and persistence; students who successfully completed the College Experience course academically progressed and persisted at a higher level than did those who did not successfully complete the course or participate in the course. The findings also revealed the impact of students' demographic and other characteristics on academic progress and persistence.

The findings of this study are consistent with previous research about the impact of participation in a first-year student success course in community colleges, including the research of two 21st Century Initiatives organizations, CCCSE and Achieving the Dream.

Colleges use CCCSE research results as a guide in evaluating their own implementation of the 13 promising practices, one of which is the student success course. The findings of this study's evaluation of the impact of CCC's student success course align with CCCSE's (2012) findings: Taking the student success course positively impacts student achievement and retention.

Furthermore, this study's findings showed that the impact of CCC's student success course aligns with the five measures of success outlined by Achieving the Dream (2012b) as those for which institutions need to "move the needle": (a) completion of developmental courses and progress to credit-bearing courses, (b) completion of gatekeeper courses, (c) completion of attempted courses with a grade of C or better, (d) persistence from semester to semester, and (e) attainment of a college credential. Aligning with these measures of success is important for community colleges as they strive to reach the goal of graduating more students.

Finally, Wild and Ebbers (2002) recommended that institutions establish appropriate baseline data to determine the current level of effectiveness. Making comparisons between students who had and those who had not successfully completed the College Experience course, in addition to allowing for the review and evaluation of the retention strategy, also provides baseline data for future research. Additionally, this study contributes to the limited research regarding community college student retention.

Limitations of the Study

The sample for this study included only first-time, full-time, degree-seeking students. If part-time students had been included, the scope of the study would have been much larger and provided additional information that could be meaningful. Attending college part time is

considered to put students at a greater risk of not reaching their educational goals (CCSSE, 2007). This study focused on only one strategy to increase persistence, the student success course, for a multicampus community college. Jenkins (2007) found that the overarching key to a college's effectiveness is aligning all programs and services to support student success, not trying just one strategy to make a direct impact on overall institutional effectiveness. Another limitation of this research is the study design. A quasi-experimental design does not provide researchers with true experimental data due to the inability to manipulate the variables. This study did not use a random selection process for the students in each group; instead, all first-time, full-time students enrolled in the Fall 2011 semester were assigned to one group, and those students who enrolled in the SDV 108 course in Fall 2012 were assigned to the other group. Using a sample of convenience prevents the results from being generalized to the larger student population, as doing so poses a threat to external validity (Creswell, 2009).

Implications for Future Research

The findings of this study present a number of opportunities for future research. Those interested in investigating the relationship between community college student participation in a success course and academic progress and persistence should consider the following suggestions. Researchers should explore a more in-depth study of all students, including part-time students, as this study examined only first-time, full-time, degree-seeking students. First-year programming effectiveness may evolve over time and, although this study offers a snapshot of one academic year, a longitudinal analysis would be beneficial. Pascarella and Terenzini (1998) found that the positive impact of taking a student success course is not long lasting and diminishes over time. Future studies should focus on an

extended longitudinal analysis. Specifically, Cardinal Community College should conduct a research study that investigates the previous five years in regard to student persistence in comparison to persistence from fall 2012 and the subsequent four years. This longitudinal design would provide a clear picture of the student success course's possible long-term effect.

Another suggestion for community colleges is to administer a pre- and post-course assessment, to determine whether there are changes in behaviors, such as time management and study skills, in students enrolled in the student success course. In this current study, a survey, only given at midterm and at the end of the course during the Fall 2012 semester at CCC gained feedback from students about the SDV 108 course. By conducting interviews with Fall 2012 student success course participants, more information would be obtained regarding their thoughts regarding the pros and cons of taking the student success course. For instance, in the executive summary that reported the findings of Fall 2012 survey (Midwestern community college, 2013), students reported needing a textbook change, which should guide investigating why students were reporting this concern.

Another research opportunity would be to investigate how students connect with faculty through participating in this course. Faculty–student interaction has been positively related to overall first-year student satisfaction (Astin, 1993) and plays a major role in the academic integration of students (Tinto, 1993). Faculty, who are seen as an important resource, should be interviewed to gain insight about what instructional strategies and activities are the most useful and relevant.

The present study did not use a random sampling method. Students at CCC were given the option of what semester to enroll in the student success course, even though it had

become a mandatory graduation requirement. The students who enrolled in the course might have had more motivation than did students who chose not to enroll. To avoid this possible bias, a study using a matched comparison group sampling technique, matching on variables such as age, gender, and race/ethnicity, could be conducted. Glass and Garrett's (1995) study, using a matched pairs sample, found that students who completed an orientation course had higher GPAs and number of credits completed than did those students who did not enroll in the course.

Implications for Policy and Practice

Community colleges are seen as critical to this nation's economic recovery. In recent years, community colleges have received national attention in terms of their potential to produce graduates and assist in the revitalization of the national economy; however, simply offering programs and practices does not guarantee that they will have the intended effects on student success (Kuh et al., 2008). Wild and Ebbers (2002) explained, "Whoever references it—internal administrators, faculty, taxpayers, legislators, state policy makers, and so forth—student retention is significant for measuring institutional effectiveness in the prevailing environment of accountability and budgetary constraints" (p. 503).

A growing number of researchers, policymakers, and institutional leaders are addressing the question of how to boost retention rates. Increasing the college completion rate is a national and state priority designed to ensure economic competitiveness and growth. Community colleges need to participate and embrace state and national completion agendas by incorporating initiatives into the college's institutional and strategic plans. The pursuit of initiatives that are most relevant to each college's priorities and challenges, as determined by

institutional leadership, should be a top priority along with assessing the impact of each initiative.

Many times the student success problem is actually an institution structural problem, where change needs to happen at the institutional level. What are institutions doing to foster success for students? Institutional programs and practices must be high quality, customized to meet the needs of students they are intended to reach, and firmly rooted in a student success-oriented campus culture. Educators and policy makers need to think more deeply about what it means to be an educated person in the world today (Rendón, 2006). The challenge is to think in a broader scope, creating an inclusive environment for community college students.

As a gateway, the community college offers educational opportunities for those who might not otherwise have a postsecondary option; however, open access does not guarantee success. Improving the educational attainment of minoritized populations in the United States is critical not only for the sake of those individuals but also for the general health and competitiveness of the U.S. economy. Some efforts over the past decade were initiated to improve how the nation's community college system engages and supports students to strengthen institutional linkages among community colleges and workforce development programs. The economy is driven by globalization and the need for an educated workforce.

The importance of community colleges to the education and vocational training of this nation's low-income, minoritized populations and working adults cannot be overstated. The skills of the new workplace demand a postsecondary vocational curriculum that includes critical thinking skills and a commitment to continuous learning. This on-the-job preparedness will begin to provide industry with needed skilled workers. Predicted labor

shortages in the United States make it essential to increase minoritized populations with the skills necessary to fulfill the labor demand. Many programs provide the postsecondary credentials needed to increase their labor market earnings and the overall skills needed to keep the American workforce productive and competitive.

In addition to knowing the overall success rates of community college students, it is important to recognize the more common obstacles that students confront in their path to certificate/degree completion. A range of barriers limits students' ability to attend community colleges and to successfully complete programs of study. The barriers, i.e., lack of information about college, lack of family support, the need to work full time, and the absence of role models, continue to challenge minoritized populations. If a person doesn't come from a background of college-educated people, it is hard to understand how the initial investment in education is necessary for better future earning potential. For minoritized populations who do receive a credential, there are labor market rewards in terms of higher salaries, yet research has shown that most students do not complete their studies and suffer economic losses compared to what they would have earned as completers. One minoritized population, Hispanics, is projected to be the fastest growing segment of the labor force in the years ahead. The desire to help support their families is one reason they do not enroll in post-secondary programs, which translates into minoritized populations still having relatively limited community college enrollments and often failing to complete a degree or certificate once they enroll.

Community colleges, with diverse student populations, are challenged to meet the needs of all students. The student success course is one avenue by which all students gain information about college, develop support systems to help with transitions, and learn the

ropes to being successful in the organization. A better understanding of the unique needs of specific student populations can be obtained by investigating the academic performance and retention of student subgroups. By maintaining a special focus on students who face barriers, closing the gap can be achieved. Community colleges, in their strategic planning, should be assessing their current policies and programs, identifying barriers, and developing approaches to address those barriers. This increased understanding can serve as the foundation for policy decisions, curriculum development, and institutional practices.

Another consideration for college leaders and policymakers is the need to determine what increased persistence means in revenue as budget concerns escalate. The financial impact is broader in scope than just increased tuition revenue. The financing of community colleges has changed over time. Currently, a mix of funding sources includes state revenue, federal and local funding, and student fees and tuition. With a continued decline in funding and budgeting becoming difficult, institutions are challenged to determine what strategies will be most cost effective. Recruiting student cost is higher than retaining students. Funding for community colleges is based largely on enrollments rather than on completions or other outcomes, which is why it is not surprising that community colleges often pay more attention to enrollments (Jenkins, 2007). If community college retention rates were increased, graduates would become part of a wholly different income bracket, and taxpayers in the nation and the states would likewise experience substantial monetary gains. In making the commitment to student persistence, by implementing the student success course, more students are persisting, which means more student tuition in the subsequent spring semester.

Furthermore, community colleges cannot ignore the potential revenue to be gained by retaining students from fall to spring and from first year to second year. Student tuition,

along with state funding per student, represents thousands of dollars. Assessing the cost–benefit ratios of initiatives is necessary for institutions to determine the economic impact of new initiatives. The investment of personnel and funds by implementing a mandatory student success course is an example of a low cost–benefit ratio option with financial impact for the institution in revenue. CCC proactively addressed the issue of retention by implementing the mandatory graduation requirement student success course policy.

Summary and Conclusion

Approximately 45% of students enrolled in 2-year colleges depart college between their first and second years, and approximately 35% of students depart from a 4-year college or university (ACT, 2010). Despite the extensive efforts at many institutions to address retention issues, reaching a diverse student community college population is a challenge fraught with obstacles that are difficult to overcome. Due to this challenge of reaching a diverse population, community colleges must address student persistence strategically. Dr. Kay McClenney (2013), Director of the CCCSE, stated that the first 15 weeks are the make-or-break retention time for community colleges. Dr. Vincent Tinto was quoted as stating in *A Matter of Degrees*: “If we are going to make a substantial dent in completion rates, we must ask, ‘How can we reshape students’ experience in the one place where they will be while they are on campus: in the classroom?’” (CCCSE, 2012, p. 2). In an attempt to shape students’ experiences, many institutions have implemented some type of first-year experience or student success course. McClenney stated that college students don’t “do” optional. If a college wants students to participate, it must make it mandatory. CCC acted upon what researchers found, implementing a policy that requires students to take The

College Experience course, which provides that classroom opportunity where community colleges can shape student experiences.

Hossler (2005) found that most colleges and universities “do not conduct studies of the efficacies of retention intervention programs” (p. 13). The purpose of this study was to assess the effectiveness of participating in a student success course at a midwestern community college on first-time, full-time, degree-seeking students’ academic progress and persistence. The results of this study suggest, when an institution supports offering a student success course, not only will student persistence increase, but the college will experience a more successful student population. As evidenced by this study, the students successful in the student success course persisted at a higher rate and achieved a higher level of academic progress, than did students who did not take or were unsuccessful in taking the course. Therefore, institutions that require a student success course, which has a limited cost of implementation, will realize a higher student persistence rate; thus, making their contribution by providing a better educated and more diverse workforce.

APPENDIX A. COLLEGE EXPERIENCE COURSE SYLLABUS

Cardinal Community College

Course Information – EFFECTIVE FL 2013-01
Acronym/Number SDV 108 Historical Ref SDV 108
Title: The College Experience
Credit breakout 1 1 0 0 0
(credit lecture lab practicum work experience)

PREREQUISITE(S):

COURSE DESCRIPTION:

The goals of the course are to connect students to faculty, peers, and college resources, while introducing students to the college's expectations and environment and to strategies that promote and encourage student success in college and life.

COURSE COMPETENCIES:

During this course, the student will be expected to:

1. Demonstrate an understanding of how to navigate basic information as a CCC student.
 - 1.1 Locate information in the College catalog, course schedule, Student Handbook and CCC website.
 - 1.2 Define graduation requirements at CCC.
 - 1.3 Compute GPA.
2. Demonstrate an understanding of program requirements.
 - 2.1 Identify core courses for chosen program of study.
 - 2.2 Identify college preparatory courses and other prerequisites needed to build skills for subsequent courses in chosen program of study.
 - 2.3 Determine elective courses for chosen program of study.
 - 2.4 Summarize course requirements based on the Program Information Brief.
 - 2.5 Meet with a CCC Academic Advisor for course planning and support in developing a semester schedule.
 - 2.6 Learn how to build a course schedule and register for courses for the following semester.
 - 2.7 Summarize the process to change from one academic program to another academic program at CCC.
 - 2.8 Identify needed resources for program completion in regards to career plans and/or transfer planning.
3. Demonstrate an understanding of college expectations and essential academic information.
 - 3.1 Define the role of the course syllabus and course competencies.
 - 3.2 Summarize the policies governing student academic standards, including satisfactory academic progress and the policies governing personal conduct.
 - 3.3 Summarize the policies governing student financial aid, as needed.
 - 3.4 Define the values of academic integrity and scholarship, particularly related to cheating and plagiarism. SDV 108
 - 3.5 Define instructor expectations regarding student conduct and student success including attendance, classroom behavior, professionalism, and ethics.
4. Demonstrate the use of college technology.
 - 4.1 Use the CCC email system to retrieve messages, contact instructors, and send homework assignments as attachments.
 - 4.2 Use the Blackboard online platform to complete assessments, participate in discussion questions and forums, and gather needed materials for courses.
 - 4.3 Demonstrate how to login to course companion sites such as WileyPlus and MyMathLab.
 - 4.4 Demonstrate how to use the CCC Web Info System to view unofficial transcripts, locate grades, request a Degree Audit, and view financial aid.
 - 4.5 Demonstrate how to use the CCC Web Info System to register for semester courses.
 - 4.6 Demonstrate how to access CCC Tech Support.
 - 4.7 Demonstrate how to access the CCC network from campus and from home.
 - 4.8 Demonstrate how to access the P-drive.
5. Demonstrate knowledge of campus opportunities and resources.
 - 5.1 Identify the academic resources and services specific to the campus, including the library, computer lab, Academic Achievement Center, and tutoring.
 - 5.2 Identify additional campus-specific educational activities and opportunities for student involvement in organizations.
 - 5.3 Locate college resources available regarding career decision-making and financial aid.
6. Introduce the academic skills necessary for student success.
 - 6.1 Describe the characteristics of active listening.
 - 6.2 Identify the skills involved in time management and making the most out of on-campus time for use of academic resources.
 - 6.3 Determine one's style for using a planner (i.e., paper vs. electronic, monthly vs. weekly) for organization.
 - 6.4 Survey important study skills in the areas of reading, writing, note-taking, memory, and test-taking.

- 6.5 Identify the skills needed to effectively work as a team on group projects and labs.
- 6.6 Explore one's individual learning style and the value of multisensory learning.
7. Demonstrate the life skills necessary for student success.
- 7.1 Identify the skills which will enhance one's ability to combine the competing priorities of college, family and work.
- 7.2 Identify the skills required for effective leadership and citizenship.
- 7.3 Describe the impact of physical and mental health on student success including the importance of sleep, nutrition, exercise, and the value of staying healthy.
- 7.4 Identify the interpersonal skills necessary for student success.
- 7.5 Describe how valuing diversity in culture, race, gender, orientation, disability, and age can enhance student and personal success. SDV 108
- 7.6 Recognize the value of supportive faculty and staff relationships, including Counselors, Advisors, Career Services, Campus Health, Academic Support Services, and Student Activities personnel.
- 7.7 Identify the socially appropriate ways to ask others for assistance with problem-solving.
- 7.8 Understand the importance of the development of supportive peer relationships.
- 7.9 Develop skills related to financial literacy.
- 7.10 Increase awareness of community through on-campus/off-campus learning opportunities outside the classroom. SDV 108

COMPETENCIES REVIEWED AND APPROVED BY:

DATE: May 2012

FACULTY:

COMPETENCIES REVIEWED AND APPROVED BY:

DATE: September 2008

FACULTY:

COMPETENCIES REVIEWED AND APPROVED BY:

DATE: December 2009

FACULTY:

Effective date: August 2012

APPENDIX B. STUDY CODEBOOK

Variable Name	Definition	Scale
Enrollment Term (first_term)	Term of enrollment	Fall 2012 = 0 Fall 2011 = 1
Age Categories	Student age at term of Enrollment	0 = ≤ 24 1 = 25 thru 35 2 = ≥ 36
Race	Ethnicity categories	1 = White 2 = Black 3 = Hispanic 4 = Asian 5 = Native American 6 = Native Hawaiian/Pacific Islander 7 = Unknown
Race Grouped Min_stat	White/unknown and Minorities category	1 = W/U 2 = M
Gender	Student gender	1 = Male 2 = Female
Pell Grant Status	Need based financial aid Eligibility	0 = No 1 = Yes
SDV_stat	College Experience course	0 = non participant 1 = participant
Dev_mat	College Prep Math Developmental courses in Math	0 = No 1 = Yes
Dev_eng	College Prep Writing Developmental courses in Writing	0 = No 1 = Yes
Dev_rdg	College Prep Reading Developmental courses in Reading	0 = No 1 = Yes
Rdg_cut	ACT/COMPASS assessment Scores in reading for entering Students	1 = Below Cut 2 = Above Cut
Eng_cut	ACT/COMPASS assessment Scores in writing for entering Students	1 = Below Cut 2 = Above Cut
Mat_cut	ACT/COMPASS assessment Scores in math for entering Students	1 = Below Cut 2 = Above Cut
GPA_cut	Accumulated grade point Average earned by student in The first term of enrollment	1 = Below C 2 = C or above

Crs_retain_100	100% credits retained from Initial enrollment to end of fall semester	1 = No 2 = Yes
All_courses	Courses taken	Number of credits enrolled in
All_retained	total number of courses	Courses passed D– or better
f2s	Persistence of students fall to spring semester	0 = No 1 = Yes
First Generation	Self-reported parents did not have college experience	0 = not first generation 1 = first generation
Academic Progress	Student GPA C or better and 67% of credits attempted were earned	0 = not academically progressing 1 = academically progressing
Cut_Index	Cut scores for developmental Education courses	3 = below all cut scores 4 = below two cut scores 5 = below one cut score 6 = above all cut scores

APPENDIX C. INSTITUTIONAL REVIEW BOARD APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Date: 7/26/2012

To: Laurel Klinkenber
3536 Stoneview Circle SW
Cedar Rapids, IA 52404

CC: Dr. Larry Ebbers
N256 Lagomarcino Hall
Marie Moser
3536 Stoneview Circle SW

From: Office for Responsible Research

Title: A quantitative analysis of a mandatory orientation course on first-time college student persistence and academic progress

IRB ID: 12-315

Study Review Date: 7/25/2012

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (1) Research conducted in established or commonly accepted education settings involving normal education practices, such as:
 - Research on regular and special education instructional strategies; or
 - Research on the effectiveness of, or the comparison among, instructional techniques, curricula, or classroom management methods.
- (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified directly or through identifiers linked to the subjects.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Date: 1/28/2013

To: Laurel Klinkenberg
3536 Stoneview Circle SW
Cedar Rapids, IA 52404

CC: Dr. Larry Ebbers
N256 Lagomarcino Hall
Marie Moser
3536 Stoneview Circle SW

From: Office for Responsible Research

Title: A quantitative analysis of a mandatory orientation course on first-time, full-time college student persistence and academic progress

IRB ID: 12-315

Study Review Date: 1/24/2013

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (1) Research conducted in established or commonly accepted education settings involving normal education practices, such as:
 - Research on regular and special education instructional strategies; or
 - Research on the effectiveness of, or the comparison among, instructional techniques, curricula, or classroom management methods.
- (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified directly or through identifiers linked to the subjects.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

APPENDIX D. THE COLLEGE EXPERIENCE COURSE POLICY

CARDINAL COMMUNITY COLLEGE EDUCATIONAL SERVICES PROCEDURES

Section: Student Records
 Subject: The College Experience Course
 Effective Date May 1, 2012
 Number: ES4503
 I. Institutional Regulation

The Board of Directors of CCC confers upon the staff the power to establish academic standards as they related to the educational process.

II. Procedures

A. All first-time CCC Arts and Science (AA and AS) students and students pursuing an AGS degree are required to enroll and successfully complete The College Experience course (SDV 108) as a graduation requirement. It is recommended that students enroll in this course during their first semester at CCC.

1. Students will enroll in SDV 108 on the campus where the majority of their credits will be taken.
2. Students enrolled 100% online will take the course online. (Students enrolled in at least one face-to-face class will enroll in SDV 108 as a face-to-face class.)

B. Definitions:

1. Transfer student – an individual who has attended another college/university prior to enrolling at CCC.
2. First-time student – an individual who has never been enrolled for credit at a college/university. For purposes of this procedure, an individual who took college classes while in high school is also considered a first-time student.
3. Online student – an individual who is taking 100% of his/her courses online.

C. Exemptions:

1. Transfer students who have successfully completed at least 24 credits at another college and have a cumulative GPA of 2.0 or above, as documented on official transcripts.
2. Students registered for the CCC Honors Orientation Course (HON101).
3. Students who meet the definition of Guest Student in ES4100.
4. Students accepted and enrolled in a career education program. A list of career education programs is provided on the CCC webpage. A hard copy can be obtained from the Director of Student Development or the Director of Program Development/Academic Support Services and in the Student Development Office on each CCC campus.

D. Appeals:

Students who wish to appeal this requirement must submit a letter to the Director of Student Development or the Director of Program Development/Academic Support Services.

1. The letter and official transcript(s) must be received no later than fourteen (14) calendar days before the start of the semester.
2. The request will be reviewed and a response will be sent to the student prior to the start of the semester.
3. The decision of the Director of Student Development or the Director of Program Development/Academic Support Services or their designee(s) shall be final.

3/29/12

APPROVED: Date:

Executive Dean, Student Services

3/29/12

APPENDIX E. CROSS-TABULATION TABLES

Table E.1

Cross-Tabulations of Academic Progress by Demographic Inputs (N = 1,416)

Variables	Total sample		Non-SDV		All SDV		SDV+		SDV-	
	n	%	n	%	n	%	n	%	n	%
Persistence fall to spring										
Non-persisters	724	51.1	476	53.4	248	47.2	62	20.1	186	86.1
Persisters	692	48.9	415	46.6	277	52.8	247	79.9	30	13.9
Race/ethnicity										
White	526	53.9	311	52.1	215	55.1	193	80.4	22	14.7
Black	37	20.8	28	20.1	9	23.1	8	61.5	1	3.8
Hispanic	47	52.2	25	52.1	22	52.4	18	78.3	4	2.1
Asian	19	50	12	52.2	7	46.7	6	85.7	1	12.5
Native American	2	25	2	33.3	0	0	0	0	0	0
Unknown	61	48.4	37	41.6	24	64.7	22	88	2	16.7
Age										
≤24 years old	575	49.7	336	47.9	239	52.5	213	78.9	26	14.1
25–35 years old	85	46.7	541	42.2	28	57.4	28	84.8	3	14.3
≥36 years old	32	41.6	25	41	6	43.8	6	100	1	10
First generation										
Not first generation	252	44.2	157	43.3	95	45.9	79	74.5	16	15.8
First generation	440	52	258	48.9	182	57.2	168	82.8	14	12.2
Pell grant eligible										
Not eligible	345	54.4	202	53.7	143	55.4	133	81.1	10	10.6
Eligible	347	44.4	213	41.1	182	50.2	114	79.6	20	16.4
COMPASS cut scores										
3 dev ed courses needed	138	39.7	79	36.9	59	44.4	54	72	5	8.6
2 dev ed courses needed	125	45.6	64	40.3	61	53	53	86.9	8	14.8
1 dev ed course needed	170	52	96	48.7	74	56.7	64	79	10	20.4
0 dev ed courses needed	259	55.3	176	54.8	83	56.5	76	82.6	7	12.7
Gender										
Male	314	44.3	202	51.7	112	45.2	96	76.2	16	13.1
Female	378	53.5	213	48.3	165	59.2	151	82.5	14	14.7
Persistence										
Not persisting	39	5.6	28	10.5	11	9.8	9	45	2	2.2
Persisting	653	94.4	387	61.9	266	64.4	238	82.4	28	22.6

Table E.2
Cross-Tabulations of Persistence by Demographic Inputs (N = 1,416)

Variables	Total sample		Non-SDV		All SDV		SDV+		SDV-	
	n	%	n	%	n	%	n	%	n	%
Persistence fall to spring										
Non-persisters	378	26.7	266	29.9	112	21.3	20	6.5	92	42.6
Persisters	1,038	73.3	625	70.1	413	78.7	289	93.5	124	57.4
Race/ethnicity										
White	760	77.9	444	75.8	316	81	228	95.0	88	58.7
Black	86	48.3	64	46.0	22	56.4	12	92.3	10	38.5
Hispanic	69	76.7	34	70.8	35	83.3	22	95.7	13	68.4
Asian	26	68.4	14	60.9	12	80.0	6	85.7	6	75.0
Native American	5	62.5	4	66.7	1	50.0	0	0.0	1	100.0
Unknown	92	73.0	65	73.0	27	73.0	21	84.0	6	50.0
Age										
≤24 years old	864	83.2	505	71.9	359	78.9	252	93.3	107	57.8
25–35 years old	127	12.2	86	67.2	41	75.9	31	93.9	10	47.6
≥36 years old	77	5.4	34	55.7	13	81.3	6	100.0	7	70.0
First generation										
Not first generation	393	68.9	232	63.9	161	77.8	100	94.3	61	60.4
First generation	645	76.2	393	74.4	252	79.2	189	93.1	63	54.8
Pell grant eligible										
Not eligible	481	75.9	276	73.4	205	79.5	154	93.9	51	54.3
Eligible	557	71.2	349	67.8	208	77.9	135	93.1	73	59.8
COMPASS cut scores										
3 dev ed courses needed	223	64.3	126	58.9	97	72.9	68	90.7	29	50.0
2 dev ed courses needed	193	70.4	102	64.2	91	79.1	59	96.7	32	59.3
1 dev ed course needed	261	79.8	154	78.2	107	82.3	75	92.6	32	65.3
0 dev ed courses needed	361	77.1	243	75.7	118	80.3	87	94.6	31	56.4
Gender										
Male	509	49.0	325	70.5	184	74.2	117	92.9	67	54.9
Female	529	51.0	300	69.8	229	82.7	172	94.0	57	60.6
Academic progress										
Not progressing	385	37.1	476	53.4	248	47.2	30	13.9	186	86.1
Progressing	653	62.9	415	46.6	277	52.8	247	79.9	62	20.1
Developmental ed courses										
0 courses taken	636	76.0	399	72.5	237	82.6	181	93.3	56	60.2
1 course taken	248	71.7	144	67.9	104	77.6	68	93.2	36	59.0
2 courses taken	79	68.1	44	66.9	35	70.0	20	90.9	15	53.6
3 courses taken	75	64.1	38	60.3	37	68.5	20	100.0	17	50.0

APPENDIX F. PEARSON POINT-BISERIAL CORRELATION TABLES

Table F.1

Point-Biserial Correlations for the SDV Group by Inputs for Fall 2012 Semester (n = 525)

Variables	Correlations (significance, 2-tailed)								
	1	2	3	4	5	6	7	8	9
1. Age	—	.098* (.024)	-.167** (.000)	.040 (.364)	.225** (.000)	.134** (.002)	-.040 (.362)	-.003 (.941)	-.007 (.876)
2. Minority status		—	-.104* (.018)	-.027 (.545)	.119** (.006)	.260** (.000)	-.262** (.000)	-.134** (.002)	-.085 (.053)
3. First generation status			—	-.053 (.226)	-.185** (.000)	-.152** (.000)	.183** (.000)	.111* (.011)	.018 (.689)
4. Gender				—	.100* (.022)	.069 (.113)	-.135** (.002)	.144** (.001)	.103* (.018)
5. Pell grant eligibility					—	.041 (.354)	-.166** (.000)	-.052 (.230)	-.019 (.664)
6. Developmental education courses						—	-.409** (.000)	-.164** (.000)	-.124** (.005)
7. COMPASS cut scores							—	.091* (.036)	(.069) .113
8. Academic progress								—	.448** (.000)
9. Persistence fall to spring									—

*Significant at the 0.05 level (2-tailed). **Significant at the 0.01 level (2-tailed).

Table F.2
Pearson Point-Biserial Correlations for the non-SDV Group by Inputs for Fall 2011 Semester (n = 891)

Variables	Correlations (significance, 2-tailed)								
	1	2	3	4	5	6	7	8	9
1. Age	—	.177** (.000)	-.220** (.000)	.017 (.617)	.264** (.000)	.065 (.052)	-.182** (.000)	-.048 (.151)	-.090** (.007)
2. Minority status		—	-.256** (.000)	.035 (.291)	.229** (.000)	.116** (.001)	-.367** (.000)	-.176** (.000)	-.203** (.000)
3. First generation status			—	-.081* (.015)	-.223** (.000)	-.104** (.002)	.295** (.000)	.055 (.099)	.113** (.001)
4. Gender				—	.170** (.000)	.099** (.003)	-.257** (.000)	.057 (.088)	-.008 (.812)
5. Pell grant eligibility					—	.088** (.009)	-.249** (.000)	-.122** (.000)	-.061 (.069)
6. Developmental education courses						—	-.407** (.000)	-.076* (.024)	-.076* (.024)
7. COMPASS cut scores							—	.148** (.000)	.156** (.000)
8. Academic progress								—	.471** (.000)
9. Persistence fall to spring									—

*Significant at the 0.05 level (2-tailed). **Significant at the 0.01 level (2-tailed).

APPENDIX G. SUPPLEMENTAL REGRESSION TABLES

Table G.1

Regression Analysis for Variables Predicting Non-SDV Group Academic Progress (n = 891)

Model	Variables	B	SE	Wald	p	Exp(β)	95% C.I.	
							Lower	Upper
Model 1	gender	0.35	0.14	6.12	.013	1.42	1.08	1.88
	agecat	0.14	0.13	1.17	.280	1.15	0.89	1.50
	pell	-0.37	0.15	5.94	.015	0.69	0.51	0.93
	firstgen	0.05	0.15	0.09	.759	1.05	0.78	1.41
	White (indicator)			39.50	.000			
	Black	-1.45	0.24	36.53	.000	0.24	0.15	0.38
	Hispanic	-0.01	0.31	0.00	.963	0.99	0.54	1.81
	Asian	0.03	0.43	0.00	.949	1.03	0.44	2.39
	Native American	-0.73	0.88	0.70	.403	0.48	0.09	2.68
	Unknown	-0.50	0.23	4.67	.031	0.60	0.38	0.95
Model 2	gender	0.45	0.15	9.13	.003	1.56	1.17	2.09
	agecat	0.16	0.13	1.49	.222	1.18	0.91	1.53
	pell	-0.34	0.15	4.88	.027	0.71	0.53	0.96
	firstgen	-0.03	0.16	0.03	.863	0.97	0.72	1.32
	White (indicator)			31.05	.000			
	Black	-1.29	0.25	26.89	.000	0.28	0.17	0.45
	Hispanic	0.09	0.31	0.09	.770	1.10	0.59	2.02
	Asian	0.08	0.43	0.03	.854	1.08	0.47	2.52
	Native American	-0.76	0.88	0.73	.392	0.47	0.08	2.64
	Unknown	-0.50	0.23	4.50	.034	0.61	0.39	0.96
Model 3	Cut_Index	0.18	0.07	6.64	.010	1.19	1.04	1.36
	gender	0.45	0.15	9.11	.003	1.56	1.17	2.09
	agecat	0.16	0.13	1.52	.218	1.18	0.91	1.53
	pell	-0.34	0.15	4.86	.027	0.71	0.53	0.96
	firstgen	-0.02	0.16	0.02	.876	0.98	0.72	1.32
	White (indicator)			31.51	.000			
	Black	-1.30	0.25	27.33	.000	0.27	0.17	0.44
	Hispanic	0.09	0.31	0.09	.763	1.10	0.60	2.03
	Asian	0.08	0.43	0.04	.851	1.08	0.47	2.52
	Native American	-0.74	0.88	0.70	.404	0.48	0.09	2.70
Unknown	-0.50	0.23	4.56	.033	0.61	0.38	0.96	
	Cut_Index	0.15	0.07	4.04	.044	1.16	1.00	1.34
	dev_courses	-0.08	0.09	0.88	.348	0.92	0.78	1.09

Table G.2

Regression Analysis for Variables Predicting SDV Group Academic Progress (n = 525)

Model	Variables	B	SE	Wald	p	Exp(β)	95% C.I.	
							Lower	Upper
Model 1	gender	0.65	0.19	12.44	.000	1.92	1.34	2.76
	agecat	0.24	0.22	1.24	.265	1.28	0.83	1.96
	pell	-0.17	0.19	0.76	.385	0.85	0.58	1.23
	firstgen	0.50	0.19	6.72	.010	1.65	1.13	2.40
	White (Indicator)			14.26	.014			
	Black	-1.39	0.41	11.53	.001	0.25	0.11	0.56
	Hispanic	0.04	0.34	0.02	.903	1.04	0.54	2.01
	Asian	-0.36	0.54	0.44	.507	0.70	0.24	2.02
	Native American	-21.86	28399.53	0.00	.999	0.00	0.00	0.00
	Unknown	0.48	0.37	1.67	.196	1.61	0.78	3.30
Model 2	gender	0.68	0.19	13.14	.000	1.97	1.37	2.85
	agecat	0.23	0.22	1.10	.295	1.26	0.82	1.94
	pell	-0.15	0.19	0.57	.449	0.87	0.60	1.26
	firstgen	0.47	0.19	5.86	.016	1.60	1.09	2.34
	White (Indicator)			12.01	.035			
	Black	-1.29	0.42	9.24	.002	0.28	0.12	0.63
	Hispanic	0.07	0.34	0.04	.833	1.07	0.55	2.08
	Asian	-0.34	0.54	0.39	.534	0.71	0.25	2.07
	Native American	-21.81	28420.41	0.00	.999	0.00	0.00	0.00
	Unknown	0.48	0.37	1.72	.190	1.62	0.79	3.33
Model 3	Cut_Index	0.08	0.09	0.92	.337	1.09	0.92	1.28
	gender	0.71	0.19	14.05	.000	2.04	1.40	2.95
	agecat	0.31	0.22	1.91	.167	1.36	0.88	2.11
	pell	-0.19	0.19	0.98	.323	0.83	0.56	1.21
	firstgen	0.44	0.20	5.01	.025	1.55	1.06	2.28
	White (Indicator)			10.09	.073			
	Black	-1.15	0.43	7.08	.008	0.32	0.14	0.74
	Hispanic	0.22	0.35	0.40	.527	1.24	0.63	2.45
	Asian	-0.42	0.55	0.58	.447	0.66	0.22	1.93
	Native American	-21.76	28388.16	0.00	.999	0.00	0.00	0.00
Unknown	0.43	0.37	1.33	.249	1.54	0.74	3.18	
Model 4	Cut_Index	-0.01	0.09	0.01	.928	0.99	0.83	1.19
	dev_courses	-0.30	0.11	8.02	.005	0.74	0.60	0.91
	gender	0.37	0.24	2.35	.125	1.45	0.90	2.33
	agecat	0.38	0.29	1.71	.191	1.47	0.83	2.60
	pell	0.12	0.25	0.22	.639	1.13	0.69	1.84
	firstgen	0.29	0.25	1.35	.246	1.34	0.82	2.20
	White (Indicator)			5.72	.335			
	Black	-1.03	0.52	3.90	.048	0.36	0.13	0.99
	Hispanic	0.23	0.45	0.26	.610	1.26	0.52	3.04
	Asian	0.13	0.73	0.03	.855	1.14	0.28	4.72
Native American	-21.95	24084.32	0.00	.999	0.00	0.00	0.00	
Unknown	0.48	0.47	1.05	.305	1.62	0.65	4.06	
Model 4	Cut_Index	0.12	0.12	1.03	.310	1.13	0.90	1.42
	dev_courses	0.01	0.14	0.01	.945	1.01	0.77	1.32
Model 4	SDV_course	3.17	0.26	152.71	.000	23.89	14.44	39.52

Table G.3

Regression Analysis for Variables Predicting Non-SDV Group Persistence (n = 891)

Model	Variables	B	SE	Wald	p	Exp(β)	95% C.I.	
							Lower	Upper
Model 1	gender	0.01	0.15	0.00	.966	1.01	0.75	1.36
	agecat	-0.09	0.13	0.50	.482	0.91	0.70	1.18
	pell	0.08	0.17	0.22	.642	1.08	0.78	1.51
	firstgen	0.31	0.16	3.60	.058	1.36	0.99	1.87
	race (White as indicator)			34.34	.000			
	Black	-1.20	0.21	32.93	.000	0.30	0.20	0.45
	Hispanic	-0.14	0.34	0.18	.671	0.87	0.45	1.68
	Asian	-0.65	0.44	2.18	.140	0.52	0.22	1.24
	Native American	-0.48	0.88	0.29	.588	0.62	0.11	3.47
	Unknown	-0.12	0.26	0.22	.639	0.89	0.53	1.47
Model 2	gender	0.08	0.16	0.28	.599	1.09	0.80	1.48
	agecat	-0.08	0.13	0.37	.546	0.92	0.71	1.20
	pell	0.11	0.17	0.42	.517	1.12	0.80	1.56
	firstgen	0.25	0.17	2.26	.133	1.28	0.93	1.77
	race (White as indicator)			24.77	.000			
	Black	-1.06	0.22	23.20	.000	0.35	0.22	0.53
	Hispanic	-0.06	0.34	0.03	.872	0.95	0.48	1.85
	Asian	-0.61	0.44	1.90	.169	0.54	0.23	1.29
	Native American	-0.49	0.88	0.32	.574	0.61	0.11	3.42
	Unknown	-0.11	0.26	0.18	.668	0.90	0.54	1.49
Model 3	Cut_Index	0.15	0.07	4.06	.044	1.16	1.00	1.34
	gender	0.08	0.16	0.27	.605	1.09	0.80	1.48
	agecat	-0.08	0.13	0.36	.547	0.92	0.71	1.20
	pell	0.11	0.17	0.41	.522	1.12	0.80	1.56
	firstgen	0.25	0.17	2.29	.131	1.28	0.93	1.77
	race (White as indicator)			25.15	.000			
	Black	-1.08	0.22	23.59	.000	0.34	0.22	0.53
	Hispanic	-0.05	0.34	0.02	.878	0.95	0.49	1.86
	Asian	-0.61	0.44	1.89	.169	0.54	0.23	1.30
	Native American	-0.47	0.88	0.29	.590	0.62	0.11	3.50
Model 4	Unknown	-0.12	0.26	0.20	.655	0.89	0.54	1.48
	Cut_Index	0.13	0.08	2.48	.115	1.13	0.97	1.32
	dev_courses	-0.07	0.09	0.61	.436	0.93	0.79	1.11
	gender	-0.14	0.18	0.59	.441	0.87	0.61	1.24
	agecat	-0.17	0.15	1.24	.266	0.84	0.62	1.14
	pell	0.33	0.19	2.86	.091	1.39	0.95	2.02
	firstgen	0.33	0.18	3.22	.073	1.39	0.97	1.99
	race (White as indicator)			9.20	.101			
	Black	-0.64	0.25	6.70	.010	0.53	0.32	0.86
	Hispanic	-0.12	0.39	0.09	.759	0.89	0.41	1.92
Asian	-0.83	0.54	2.35	.125	0.44	0.15	1.26	
Native American	-0.14	0.97	0.02	.886	0.87	0.13	5.82	
Unknown	0.10	0.28	0.12	.731	1.10	0.63	1.92	
Cut_Index	0.07	0.09	0.66	.416	1.08	0.90	1.28	
dev_courses	-0.05	0.10	0.23	.629	0.95	0.79	1.16	
AcademicProgress	2.58	0.22	134.47	.000	13.14	8.50	20.31	

Table G.4
 Regression Analysis for Variables Predicting SDV Group Persistence (n=525)

Model	Variables	B	SE	Wald	p	Exp(β)	95% C.I.	
							Lower	Upper
Model 1	gender	0.51	0.22	5.22	.022	1.66	1.08	2.56
	agecat	0.12	0.26	0.21	.647	1.13	0.68	1.86
	pell	-0.08	0.23	0.13	.714	0.92	0.59	1.44
	firstgen	0.10	0.23	0.20	.658	1.11	0.71	1.73
	White (indicator)			13.10	.022			
	Black	-1.16	0.36	10.36	.001	0.31	0.15	0.63
	Hispanic	0.23	0.44	0.28	.599	1.26	0.53	2.98
	Asian	-0.13	0.67	0.04	.844	0.88	0.24	3.23
	Native American	-1.72	1.43	1.46	.228	0.18	0.01	2.94
	Unknown	-0.42	0.40	1.14	.287	0.66	0.30	1.42
	Model 2	gender	0.53	0.22	5.67	.017	1.71	1.10
agecat		0.11	0.26	0.17	.684	1.11	0.67	1.84
pell		-0.07	0.23	0.08	.772	0.94	0.60	1.47
firstgen		0.07	0.23	0.10	.758	1.07	0.68	1.69
White (indicator)				10.24	.069			
Black		-1.05	0.39	7.42	.006	0.35	0.17	0.75
Hispanic		0.26	0.44	0.36	.549	1.30	0.55	3.09
Asian		-0.10	0.67	0.02	.881	0.91	0.25	3.34
Native American		-1.67	1.43	1.36	.244	0.19	0.01	3.12
Unknown		-0.42	0.40	1.10	.295	0.66	0.30	1.44
Cut_Index		0.09	0.10	0.77	.381	1.10	0.89	1.34
Model 3	gender	0.56	0.23	6.20	.013	1.75	1.13	2.73
	agecat	0.15	0.26	0.34	.562	1.16	0.70	1.93
	pell	-0.12	0.23	0.26	.613	0.89	0.56	1.40
	firstgen	0.03	0.23	0.02	.901	1.03	0.65	1.63
	White (indicator)			9.16	.103			
	Black	-0.90	0.39	5.34	.021	0.41	0.19	0.87
	Hispanic	0.39	0.45	0.78	.378	1.48	0.62	3.56
	Asian	-0.16	0.67	0.05	.817	0.86	0.23	3.20
	Native American	-1.63	1.43	1.31	.253	0.20	0.01	3.22
	Unknown	-0.47	0.40	1.38	.241	0.63	0.29	1.37
	Cut_Index	0.01	0.11	0.01	.929	1.01	0.81	1.25
dev_courses	-0.26	0.12	4.85	.028	0.77	0.61	0.97	
Model 4	gender	0.24	0.25	0.89	.346	1.27	0.77	2.08
	agecat	0.06	0.29	0.04	.837	1.06	0.60	1.87
	pell	-0.01	0.26	0.00	.965	0.99	0.60	1.64
	firstgen	-0.21	0.26	0.63	.426	0.81	0.49	1.35
	White (indicator)			6.17	.290			
	Black	-0.55	0.43	1.64	.200	0.58	0.25	1.34
	Hispanic	0.33	0.48	0.48	.489	1.39	0.54	3.57
	Asian	0.02	0.73	0.00	.975	1.02	0.25	4.23
	Native American	-0.48	1.44	0.11	.737	0.62	0.04	10.31
	Unknown	-0.93	0.48	3.70	.054	0.39	0.15	1.02
	Cut_Index	0.02	0.12	0.04	.844	1.02	0.81	1.30
dev_courses	-0.13	0.13	1.02	.312	0.88	0.68	1.13	
AcademicProgress	2.78	0.35	64.84		16.17	8.21	31.83	
Model 5	gender	0.14	0.26	0.30	.582	1.15	0.69	1.92

agecat	0.11	0.29	0.14	.712	1.12	0.63	1.99
pell	0.07	0.26	0.06	.805	1.07	0.64	1.79
firstgen	-0.23	0.27	0.72	.396	0.80	0.47	1.35
White (indicator)			6.29	.279			
Black	-0.54	0.44	1.53	.216	0.58	0.25	1.37
Hispanic	0.33	0.49	0.45	.502	1.39	0.53	3.63
Asian	0.26	0.74	0.12	.728	1.29	0.30	5.51
Native American	-0.77	1.55	0.25	.620	0.46	0.02	9.65
Unknown	-0.95	0.50	3.66	.056	0.39	0.15	1.02
Cut_Index	0.08	0.13	0.40	.527	1.08	0.84	1.40
dev_courses	-0.02	0.14	0.02	.887	0.98	0.75	1.29
AcademicProgress	2.02	0.39	26.84	.000	7.51	3.50	16.11
SDV_course	1.34	0.33	16.68	.000	3.82	2.01	7.28

Table G.5

Regression Analysis for Variables Predicting SDV Student Success (n=525)

Model	Variables	B	SE	Wald	p	Exp(β)	95% C.I.	
							Lower	Upper
Model 1	gender	0.72	0.19	14.72	.000	2.06	1.42	2.97
	agecat	0.01	0.22	0.00	.950	1.01	0.66	1.55
	pell	-0.32	0.19	2.74	.098	0.73	0.50	1.06
	firstgen	0.49	0.19	6.36	.012	1.63	1.12	2.38
	White (indicator)			10.43	.064			
	Black	-1.03	0.37	7.67	.006	0.36	0.17	0.74
	Hispanic	-0.12	0.34	0.11	.735	0.89	0.46	1.73
	Asian	-0.65	0.54	1.45	.228	0.52	0.18	1.51
	Native American	-1.00	1.43	0.49	.486	0.37	0.02	6.07
	Unknown	0.31	0.38	0.68	.409	1.36	0.65	2.84
Model 2	gender	0.73	0.19	14.75	.000	2.07	1.43	3.01
	agecat	0.01	0.22	0.00	.969	1.01	0.66	1.54
	pell	-0.31	0.19	2.60	.107	0.73	0.50	1.07
	firstgen	0.48	0.20	5.97	.015	1.61	1.10	2.36
	White (indicator)			9.16	.103			
	Black	-0.99	0.39	6.54	.011	0.37	0.17	0.79
	Hispanic	-0.10	0.34	0.09	.760	0.90	0.46	1.76
	Asian	-0.65	0.54	1.42	.234	0.52	0.18	1.52
	Native American	-0.98	1.43	0.47	.494	0.38	0.02	6.18
	Unknown	0.31	0.38	0.69	.406	1.37	0.65	2.85
Model 3	Cut_Index	0.03	0.09	0.11	.745	1.03	0.87	1.22
	gender	0.80	0.20	16.63	.000	2.22	1.51	3.26
	agecat	0.12	0.22	0.30	.586	1.13	0.73	1.75
	pell	-0.41	0.20	4.14	.042	0.67	0.45	0.99
	firstgen	0.43	0.20	4.58	.032	1.53	1.04	2.27
	White (indicator)			6.77	.239			
	Black	-0.76	0.40	3.61	.057	0.47	0.21	1.02
	Hispanic	0.13	0.35	0.13	.719	1.14	0.57	2.27
	Asian	-0.80	0.56	2.06	.151	0.45	0.15	1.34
	Native American	-0.92	1.44	0.41	.524	0.40	0.02	6.75
Model 4	Unknown	0.23	0.39	0.35	.554	1.26	0.59	2.67
	Cut_Index	-0.12	0.10	1.61	.204	0.89	0.73	1.07
	dev_courses	-0.49	0.11	20.01	.000	0.62	0.50	0.76
	gender	0.57	0.25	5.18	.023	1.77	1.08	2.89
	agecat	-0.13	0.30	0.20	.659	0.88	0.48	1.59
	pell	-0.47	0.26	3.35	.067	0.63	0.38	1.03
	firstgen	0.26	0.26	0.99	.319	1.29	0.78	2.13
	White (indicator)			1.62	.899			
	Black	-0.07	0.50	0.02	.889	0.93	0.35	2.47
	Hispanic	-0.02	0.44	0.00	.962	0.98	0.41	2.33
Model 5	Asian	-0.83	0.71	1.39	.239	0.44	0.11	1.73
	Native American	0.64	1.47	0.19	.663	1.89	0.11	33.53
	Unknown	-0.07	0.51	0.02	.889	0.93	0.35	2.51
	Cut_Index	-0.19	0.12	2.41	.120	0.83	0.65	1.05
	dev_courses	-0.48	0.14	12.07	.001	0.62	0.47	0.81
	AcademicProgress	3.17	0.26	152.76	.000	23.83	14.41	39.39
	gender	0.56	0.26	4.76	.029	1.75	1.06	2.90
	agecat	-0.13	0.31	0.17	.680	0.88	0.48	1.61

pell	-0.49	0.26	3.49	.062	0.61	0.37	1.02
firstgen	0.31	0.26	1.41	.235	1.36	0.82	2.27
White (indicator)			1.75	.883			
Black	0.07	0.52	0.02	.900	1.07	0.39	2.96
Hispanic	-0.10	0.44	0.06	.813	0.90	0.38	2.14
Asian	-0.82	0.72	1.31	.252	0.44	0.11	1.80
Native American	0.88	1.66	0.28	.596	2.41	0.09	62.38
Unknown	0.10	0.51	0.04	.844	1.11	0.41	3.01
Cut_Index	-0.19	0.12	2.30	.129	0.83	0.65	1.06
dev_courses	-0.47	0.14	11.10	.001	0.62	0.47	0.82
AcademicProgress	2.82	0.27	112.55	.000	16.74	9.95	28.17
f2s_persistence	1.36	0.33	16.91	.000	3.90	2.04	7.45
Cut_Index	0.08	0.13	0.40	.527	1.08	0.84	1.40
dev_courses	-0.02	0.14	0.02	.887	0.98	0.75	1.29
AcademicProgress	2.02	0.39	26.84	.000	7.51	3.50	16.11
SDV_course	1.34	0.33	16.68	.000	3.82	2.01	7.28

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