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## Community College Student Retention: Effectiveness of Online Intervention Methods in Retaining Students on Financial Aid Probation

Victor S Parker

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Community college student retention: Effectiveness of online intervention methods in  
retaining students on financial aid probation

By

Victor S. Parker

A Dissertation  
Submitted to the Faculty of  
Mississippi State University  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy  
in Community College Leadership  
in the Department of Educational Leadership

Mississippi State, Mississippi

May 2018

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2018

Community college student retention: Effectiveness of online intervention methods in  
retaining students on financial aid probation

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The role of community colleges is to provide educational opportunities to all segments of a population regardless of academic proficiency or economic ability. This open-access admissions policy is meant to allow equal admission to academic and career-technical programs for all students. Due to open-access admissions, economically disadvantaged community college students find themselves being admissible to community colleges with uncertain financial ability to pay for community college even though it is at a lower cost than 4-year institutions. Community college students historically face more financial and social barriers than 4-year students in attaining higher education and thus have a greater need for federal financial aid assistance. Students attending community colleges participate in federal grant-in-aid and student loan programs at a higher rate than any other type of institution. With this greater need for financial aid assistance, community college students are still held to the same federal financial aid academic standards. Students receiving federal financial aid must meet the same grade-point average, completion rate, and eligibility limit requirements as their

university counterparts. These standards impact students at the community college level at an even higher rate than those at the university.

The purpose of this study was to determine if students who do not meet federal financial aid academic standards and are placed on financial aid probation can be retained at the community college level using an online intervention course. The knowledge obtained from the course could facilitate the selection of optimal and cost-effective intervention strategies. Determination is necessary in order to eliminate current online intervention, adapt the intervention methods, or continue supporting intervention through allocating resources to the program that may allow for expansion and outcome inference to future student populations. This study specifically explored the retention of students who do not meet corresponding Satisfactory Academic Progress (SAP) indicators through the inclusion of an online intervention course. Student data were obtained from online course outcomes over multiple semesters from a community college in the Southern Region of the United States, yielding quantitative data for analysis.

Educational opportunities tend to be viewed in a dramaturgical or symbolic perspective and viewed as successful based on student outcomes. It was assumed that student outcomes are tangible, and the link between means and ends are clear, meaning student outcome attainment equals employment and life success. In this instance, a return on investment study is not intended, but rather program effectiveness in influencing student outcomes. This program can be considered effective as it provides causation for increased performance, subsequent retention, and positive impact on financial aid status. The addition of an online intervention course supports causation linkage. It also supports

the correlation of predicting post-semester cumulative grade point average (GPA), and the performance within the course provides inference to the participant's future status.

## DEDICATION

This dissertation is the result of many years of love and support from my family. I would like to first dedicate my work to my wife Robin. We have been married for over sixteen years, and she was first to expose me to the possibility of a terminal degree. She set an example for me in completing her terminal degree in December 2006 while our two daughters had been born in 2005 and 2006. Ever since that moment, she had the perspective of what was needed to persevere and complete a PhD, and she has been a constant supporter of my progress. I would also like to dedicate my work to my daughters, McKinley and Taylor Shane, as they have observed and supported my journey as only children can in noticing the time and dedication required, with love and admiration. It is because of them that I first sought to enter the PhD program, and it is because of them that I seek to complete the program in hopes of being a future example of the value of life-long learning and self-improvement.

## ACKNOWLEDGEMENTS

I would like to acknowledge my committee members, faculty, and staff at Mississippi State University whom I have encountered along this process. I appreciate the faculty members who provided me instruction and insight into content in the endeavor of expanding my knowledge. I appreciate the staff members who assisted in my navigation along the way. I appreciate each of my committee members who provided me with guidance during a critical time in my completion, and I appreciate my committee chair, Dr. Mark Fincher, whose feedback and guidance was indispensable at each stage. I am thankful to everyone as I believe the culmination of who I am at the completion of this program has been positively impacted.

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## CHAPTER I

### INTRODUCTION

#### **Background**

In 1922, the American Association of Junior Colleges (AAJC) defined an institution offering two years of instruction of college grade coursework as a junior college. In 1925, the definition expanded to meet the larger and changing civic, social, religious, and vocational needs of the entire community in which it was geographically located (Cohen & Brawer, 2014). The original purpose of community colleges was to provide educational access to academically underprepared students through remediation, to provide academic transfer opportunities to universities, to provide low-cost educational options to those with less financial means, to provide lifelong adult education through vocational education, and to provide these services to those within a specific geographic location that meets those specific needs. In founding of the community college movement and its low cost intent, many early administrations of 2-year colleges were advocates of offering no-tuition or low-cost tuition options to students the community college served. This policy was to be perceived as an addition to the free public school offerings already established (Cohen & Brawer, 2014).

With an original mission of providing low-cost educational opportunities, funding for community colleges was not initially considered until public funds began to be required to operate. In 1907, the first state junior college funding was established by the

legislature in the state of California to provide funding for local junior colleges. In 1920, when federal law ruled the money received from mining, oil, and gas production on public land would be provided to the state budget, the California state legislature in turn directed those funds to junior colleges as state appropriations. However, financial support predominantly came from local tax funds that provided a fixed dollar amount for per student attendance with the state providing a small budgetary percentage. Funding proportions have changed over the years due to legislation such as California's Proposition 13 that capped the funds received by community colleges from local districts (Cohen & Brawer, 2014). State funds have become more depended upon to supplement community college budgets as local sources could not increase to meet institutional demand. Community colleges at the national level receive funding from the following sources: state funding 42%, local funding 24%, student tuition and fees 18%, other sources such as foundations 10%, and federal sources 6% (Cohen & Brawer, 2014). In one southern state, community colleges receive funding disproportionately from the following sources: state legislative funding 47.9%, local county funding 9.4%, tuition and fees 33%, auxiliary 3.5%, federal 5.1 % (Mississippi Community College Board, 2016). State funding and student tuition costs in that state are prominently higher than national funding models. It could be anticipated that a larger percentage of those community college students would seek federal financial aid assistance to assist with the higher percentage of tuition and fee charges.

As Cohen and Brawer (2014) explain, John Lombardi originally questioned how much tuition should be charged. In his 1941 national survey of educators and public officials, Lombardi found a small majority supported free tuition for public junior

colleges. However, in 1947, the President's Commission on Higher Education put emphasis on making public education free through grade 14, which included community college grades 13 and 14. Nevertheless, 2-year colleges that organized in the 1950s and 1960s charged tuition as a means of covering instructional costs and being cost effective to the public sector of higher education (Cohen & Brawer, 2014). This became a necessity as growth demands on community colleges escalated due to increased federal financial aid offering through the 1944 G.I. Bill. It expanded through the 1968 National Defense Education Act and the civil rights movement, allowing an influx of students who were previously unable to access higher education. To offset operational cost, community college tuition grew exponentially over time. Average tuition in the 1950s stayed below \$100 per year, 1960s was \$100-\$199 per year, 1970s moved to \$200-299 per year, the late 1980s was just below \$1,000 per year, and by the year 2007, the national average was above \$2,300. Beginning in the fall 2017 semester, largely to compensate for statewide budget cuts to the community college system, those 15 statewide community colleges had an average annual cost over \$3,000 for the first time (Amy, 2017). With the passage of the Basic Education Opportunity Grant (Pell) in 1972, most community colleges created financial aid offices to offer these programs at the source of the institution. By the 1980s, federal and state aid had become an established source of community college funding as institutional financial aid offices could direct grants and loans to students based on need (Cohen & Brawer, 2014). Recent trends continue to show federal financial aid as essential to community college students. From the 2010-11 to the 2013-14 award years, public 2-year institutions received more Pell grant distribution than

any other type of institution at about 36% of total grant dollars (National Association of Student Financial Aid Administrators, 2013).

In October 2010, the Secretary of Education amended a program authorized under Title IV of the Higher Education Act of 1965 (U.S. Department of Education, 2012a). The Satisfactory Academic Progress (SAP) regulation broke the requirements down into three parts. An institution would have to establish a SAP policy (if it had not already done so), the policy would need to be published and accessed publicly, and a reasonable standard of measurement would have to be applied that includes both qualitative and quantitative measures. It was the Department of Education's intent to have a more comprehensive and structured institutional SAP policy. This amendment would impact the Federal Family Education Loan Program, the William D. Ford Federal Direct Loan Program, the TEACH Grant Program, the Federal Pell Grant Program, and other competitive grant programs including the eligibility to receive them. Institutions have assumed that amended programs were in response to increased federal financial aid usage resulting from the U.S. economic recession in 2008. The number of students who applied for federal financial aid in 2008-09 award year was 16.4 million which increased to over 21.4 million in the 2012-13 award year. That was an increase of over 33% in applicants. The actual dollar amount increased in the 2001-02 award year from \$72.3 billion to \$173.8 billion in the award year of 2011-12. The additional dollar amount awarded shows a 140% increase during that time period (National Association of Student Financial Aid Administrators, 2013). The U.S. Department of Education was charged with reforming and strengthening federal aid programs. This reform defined the Cohort Default Rate and made clear the institutions' role in the SAP. This regulation became effective in July of

2011 (U.S. Department of Education, 2012a). Each collegiate institution was given the responsible for putting a SAP policy in place that defined what performance indicators would be established, the timeframe in which SAP would be measured as it corresponds with the academic calendar, how students would be categorized and notified of their financial aid status, and the process of a specific course of action for students not meeting SAP.

### **Statement of the Problem**

The problem in this study was a response to the enhanced federal regulations enforcing SAP standards at the institutional level. New federal regulation requirements were added at the institutional level to regulate SAP standards in the Higher Education Act 2010. In order to effectively propose policy, the institution would focus on evidence-based policy making where student outcomes and results are of a higher consideration than inputs as it pertains to meeting SAP indicators. This allows stakeholders to develop tools to verify and improve program efficiency and effectiveness of interventions. Any evaluation of an intervention program would be used to answer questions regarding intervention design, implementation, and student intervention outcomes (Gertler, 2010). In this instance, cause-and-effect evaluation would be used to evaluate what difference the intervention made in the student outcomes. A retrospective evaluation would be employed as the intervention program is engaged, and program generalizability would rely on assumptions to produce valid evidence of causal impact (Gertler, 2010).

## **Purpose of the Study**

The purpose of this study was to test for the retention of community college students who do not meet SAP indicators of federal financial aid and were categorized as either probationers, appellants, or being suspended. Additionally, it will interpret and infer a causal relationship between independent variables describing SAP indicators and student completion of an online course intervention. This interpretation of student outcomes in an intervention capacity will determine program effectiveness. Program effectiveness studies provide an indication that participation in the intervention under normal conditions impacted participant outcomes. The outcomes will hold correct for the sample participants and also for intended participants outside the sample including an inference of future results (Gertler, 2010). Intervention effectiveness needs an impact evaluation to assess for intervention inefficiency, intervention adaptability, or intervention continuation of support for resource allocation justification. Institutional administrations are held accountable for asset allocation and effectiveness in concluding return on investment as it pertains to student service resources. Generalization of student participant outcomes to larger student populations will be essential to demonstrating sensible resource allocation in a time when community colleges are challenged with federal, state, and local budget reductions.

## **Research Questions**

The following research questions will be established in this study:

1. What is the causal impact of the online intervention course on meeting SAP post-semester indicators?

2. Does a linear relationship exist within the independent variables that can be used to determine program effectiveness?
3. Does student performance in an intervention course correlate with that student meeting Financial Aid SAP?

### **Delimitations**

Under Institutional Review Board categorization, the study was classified Category I as an exempt review. IRB Category I commonly refers to educational settings in which research is utilized to evaluate programs. The study will specifically evaluate the online intervention using ex post facto participant outcomes.

Institutional permission was requested through the corresponding departmental gatekeepers Office of Institutional Research and Office of Financial Aid at the host community college. The Office of Institutional Research is accountable for program design, implementation, and instruction. The Office of Financial Aid is responsible for providing intervention for participants who do not meet SAP academic requirements. Through this intervention, participants are identified and communicated their required participation in an intervention providing participant outcomes. The Institution's portal was used to access participant SAP post-semester indicators and ex post facto online course intervention outcomes.

### **Limitations**

The main challenge in carrying out an effective program evaluation is to identify the causal relationship between the program and the student outcomes of interest.

Focusing on causality of an evaluation determines the methodologies that can be applied.

To estimate the impact of a program, most methods use a counterfactual or non-treatment group that can be used for comparison to the program participants. Group comparison provides the best opportunity to produce valid generalizability. However, retrospective evaluations that evaluate program impact after implementation rely heavily on assumptions (Gertler, 2010).

If a prospective evaluation was designed during implementation of the program, a mean comparison of pre-semester and post-semester indicators between the treatment and non-treatment groups could be employed to determine causal impact. However, a multiple regression analysis was applied to determine correlation between variables allowing the anticipated generalizability, which is the intent of the program evaluation.

### **Assumptions**

The study will be initiated with the following assumptions: 1) all participants are categorized as financial aid probationers, meaning they did not meet SAP academic requirements for at least one of the indicators; 2) all participants share commonalities based on geography and academic profile as they attend a medium-serving rural community college in the southeastern United States; and 3) independent variables are consistent across the participant population allowing the quantitative research design to detect a linear relationship among dependent variables inferring a causal impact. Based on these assumptions, it is possible that outcomes can be generalized throughout the institution's district and statewide community college system, as well as comparable to other state community colleges serving rural areas, thereby strengthening external validity.

### **Significance of the Study**

In one southern state, community colleges receive funding from the following sources: state legislative funding 47.9%, tuition and fees 33%, and local county funding 9.4%, (Mississippi Community College Board, 2016). If that state's legislature were to cut funding to community colleges, institutions would have to obtain funding from other sources. With local economies unable to increase millage support, community colleges are left with the options of budget cuts and/or increased tuition and fees placed on students. State lawmakers cut the state's 15 community colleges by 10% of their expected budget for the 2016-17 fiscal year which was approximately \$28 million, and further cuts began July 1, 2017. Institutions were provided an average of \$1,866,667 per institution less than their expected 2016-17 budget (Amy, 2017).

A cut of this size at the institutional level could mean potential layoffs, hiring freeze, budget reductions, and increased tuition. Institutions are sensitive to increased tuition for their students as slight increases will impact students and families greatly. When tuition dollars replace state funding as the major source of revenue, measures must be taken to recruit and retain students. This program evaluation may allow administrations to make responsible decisions based on asset allocation in a time of budget reductions and realignments. Determining effectiveness of this intervention program may also justify its continuation of providing resources to increase student financial aid literacy.

### **Definition of Terms**

1. Academic Intervention – This includes strategies used in teaching students new skills, building fluency in an existing skill, or the application of an existing skill. For the purpose of this study, an intervention is a specific strategy in teaching postsecondary students financial aid literacy concepts and their application in meeting postsecondary SAP. The strategy is designed to monitor student academic progress and use student academic outcomes to validate student understanding of concepts taught. Outcomes of interest would demonstrate a correlation with impacted indicators once financial aid literacy was realized.
2. Federal Financial Aid – Title IV of the Higher Education Act of 1965 defined specific sections within the act and authorizes the Student Assistance Programs. This section authorizes Pell Grants, the Federal Family Education Program, the Federal Work-Study Program, Federal Direct Student Loans, and Federal Perkins Loans. For each of these programs, it sets a federal funding policy, minimums and maximums, and program prohibitions. As it pertains to student assistance, this section defines and authorizes what federal financial assistance is available to students based on their definition of need analysis (Federal Student Aid, 2017).

3. Financial Aid Awareness – Knowledge and perceptions of college costs, affordability, and financing options based on information and guidance accessible to students and parents (George-Jackson & Gast, 2015).
4. Financial Aid Literacy – Literacy is defined as competence or knowledge in a specialized area. The specialized area in this instance would be Federal Financial Aid as defined in term (2) (NASFAA, 2013).
5. SAP – Section 484(a)(2) of the Higher Education Act of 1965 requires a student to be making SAP in order to be eligible for any Title IV federal student aid. The Federal Title IV funding regulation mandated that academic institutions put a SAP policy in place that defined what the performance indicators would be, at what time along the academic calendar would student SAP be measured, how students are classified and notified of their financial aid status, and any appeal process for students who do not meet these performance indicators. Indicators are as follows: grade-based cumulative grade point average(GPA), completion rate calculated as cumulative passed hours divided by cumulative completed hours, and cumulative hours attempted eligibility limits (U.S. Department of Education, 2012b).

6. Higher Education Act of 1965 (HEA) – This was a legislative document signed into law on November 8, 1965 that offers additional education resources to colleges and universities and provides financial assistance to students seeking postsecondary education. This sentiment was initiated in January 1965 by U.S. President Lyndon Johnson as he expressed the need for more higher education opportunities for lower and middle income families and smaller colleges. There was concern at that time over rising costs of colleges during a time when a college degree was deemed necessary for seeking employment opportunities. Benefits under the HEA may only be received by institutions classified as higher education designed to admit students who already have a high school equivalency, accredited by a nationally recognized agency, or offer an educational program leading to a bachelor’s degree or have a 2-year program awarding credits towards a bachelor’s degree (Cohen & Brawer, 2014).

7. Higher Education Act Reauthorization (HEA) – The HEA has been reauthorized formally by the U.S. governmental agencies nine times since 1965. As part of the reauthorization, the SAP regulation became effective on July 1, 2011. It stated that, as of July 1, 2011, institutions must have a SAP policy that complied with the new regulation. The institutional policy was required to disclose the frequency in which SAP would be measured and if the summer academic term would be included within the time frame. It stated that institutions had to use approved terminology into their policy including categorizing students as financial aid warning or financial aid probation. The regulations also addressed remedial coursework, change of major, and repeated coursework. It was these regulations that detailed acceptable pace standards or completion rates and institutional SAP according to institutional guidelines. According to regulations (34 CFR 668.34(a)(8)(ii)), an academic plan is developed by the institution and student for the purposes of meeting SAP standards (NASFAA, 2013).

### **Summary**

This chapter provides an introduction to the state of community college financial aid SAP policy, including SAP origination, application during time of implementation, and importance of modern SAP-based impacts. This can be recognized through the statement of the problem, the purpose of the study, and the significance of the study stated. To initiate evaluation development, research questions were stated with delimitations and limitations explained. To provide further clarity, assumptions were

expressed and terms were defined in a manner to allow insight into the conceptual intention of descriptive language.

## CHAPTER II

### LITERATURE REVIEW

#### **Community College Financial Aid**

Traditional undergraduate students are categorized as 18–24 years of age, high school graduates, financially dependent on parents, enrolled full-time, and either working full-time hours or not (Juszkiewicz, 2014). Over half (50.3%) of all community college students are age 24 or older, labeling them as non-traditional. Non-traditional student characteristics are associated with lower college persistence and completion rates. Juszkiewicz (2014) describes non-traditional characteristics as being financially independent, in school part-time, delaying enrollment after high school or after early poor performance, employed full-time, having dependents, being a single parent, and not having completed high school. Over 87% of all community college non-traditional students will have two or more of the mentioned at-risk characteristics (Juszkiewicz, 2014).

#### **Impact of Financial Aid on Student Persistence**

Murdock (1989) determined that larger amounts of financial aid increased student persistence. He further summarized the effect of financial aid in his assumption that it is targeted to lower-income students, allowing them to persist at a level equivalent to middle- and upper-income students. He concluded that part-time, non-traditional students were not having their financial needs met, impacting a student population that composed

64% of the community college student body (Murdock, 1989). George-Jackson and Gast (2015) indicate that low-income, minority families are the most impacted by restricted financial aid support. The authors determine linkages between pre-college financial aid awareness and student preparedness. They identify three sources of financial aid support for students including parents, secondary school counselors and higher education websites (George-Jackson & Gast, 2015). When students are unable to access these sources of financial aid support, their ability to increase financial aid understanding is limited impacting their understanding of the necessary academic standards needed to continue receiving financial aid. As defined by Juskiewicz (2014), non-traditional students may be financially independent with limited parental support and may have delayed collegiate enrollment limiting secondary school support. It is widely known in public higher education that problems exist at the community college level due to insufficient state support in attempting to educate underprepared students (Ramirez, 2015).

### **Opportunity Cost of Debt Accumulation**

Opportunity cost is the loss of a potential gain from choosing between alternatives, including possible forgone educational opportunities. These costs take on different forms. Direct costs take on the form of tuition, fees, room and board paid directly to the institution and can usually differ based on the type of institution. Indirect costs are experienced based on the specific individual's decision and measured in terms of a lost potential employment or wages forgone to seek higher education that could possibly reduce individual and family security (Fincher, 2017a). George-Jackson and Gast (2015) express how the previous decade has seen increased barriers to college

affordability as all types of educational institutions have raised tuition cost at a faster pace than inflation and the median family income. This result not only from the Great Recession of 2008, but also from a complex cost and financial aid structure. Financial aid programs have gone from offering grants first to a larger offering of student loans with the student loan volume having tripled over the last decade. Currently, one in five households have student loan debt (George-Jackson & Gast, 2015). The average community college tuition is equivalent to one-third of college tuition at a 4-year institution; however, community college tuition and fees only account for about 20% of the total cost of attendance. Community college students still must consider non-tuition expenses such as off-campus housing and board, books and supplies, and transportation which would be uncontrollable without financial aid assistance (McKinney, Mukherjee, Wade, Shefman, & Breed, 2015). In 2012, 30% of full-time equivalent students were at community colleges and received 33% of Pell grant funds (Juszkiewicz, 2014). Even when community college students receive federal Pell grants, 80% of those recipients will still have unmet need and turn to federal student loans for supplemental aid. Roughly 30% of full-time community college students take out federal student loans, which leads to higher student loan default rates. Nearly one in every three (31%) community college students default on their student loans within 15 years of entering repayment. Only borrowers at for-profit institutions default at a higher rate than community college students. This leads to the need for an increased understanding of how community college students assess the costs and benefits of using student loans to finance higher education. The student perception of affordability in receiving federal student loans has to be equal to or greater than the perceived cost and consequences of long-term debt as

community college students have less financial options to gain access (McKinney et al., 2015). Fincher (2017b) states there is a senseless expectation that individuals who lack financial resources are able to access education without experiencing substantial debt.

### **Community College Academic Intervention**

Ramirez (2015) identified financial aid as a component of student development and parallels its importance to student success with ancillary services such as advising or tutoring. He also provides ideas to improve student learning, retention, and graduation but does not offer guidance in improving student financial aid competence due to the possibility of additional funding for community colleges becoming limited in the future (Ramirez, 2015). Coria and Hoffman (2015) similarly set out to determine if relationships exist between financial aid awards and measures of student academic achievement. Their study was a result of California Governor Jerry Brown signing into law in 2012 a Senate Bill that for the first time created academic achievement requirements to receive the Board of Governors fee waiver. This new law was key in the state's financial aid offerings for community college students. Academic standards to receive the waiver included a GPA and completion rate requirements comparable to federal SAP standards. The authors examined a large urban community college in southeast Los Angeles with a population identified as 72% Hispanic. Findings noted those students classified in the highest need category had larger differences in academic achievement than those non-financial aid requiring students. The purpose of the study was a fiscal response to providing additional advising and academic support or academic interventions to allow underprivileged students the same opportunity to be academically successful (Coria & Hoffman, 2015). It was determined that measuring success for community college

students cannot be based solely on 2-year completion or transfer rates to a 4-year institution. A combination of alternatives, including workforce outcomes of student employment, would need to be considered as community colleges provide a wider variety of educational programs such as continuing education, career and technical education, and high-school equivalency that often lead to employment, not higher education (Clotfelter, Ladd, Muschkin, & Vigdor, 2013).

### **Student Success Indicators**

Ellis-O'Quinn (2012) found there to be a gap in research when studying the impact of an academic intervention, orientation classes in this occurrence, on student success factors at the community college level as previous research focused on success at 4-year institutions. He attempted to assess whether a relationship existed between student success indicators, including GPA and retention, and a predictive student success factor of completion of an orientation course taken by first semester entering rural community college students. Community colleges have fewer accessible student support services compared to 4-year institutions, steering them to offer student support services through orientation course mediums as a means to reach students with limited resources. This was found to be more cost effective, and the orientation could be deemed effective through community college student GPA comparison (Ellis-O'Quinn, 2012). He observed that the majority of first-semester, full-time students chose not to enroll in the orientation course during their first semester, leading to no significant findings in student retention. However, a significant relationship was found to exist between orientation enrollment and GPA performance as students with higher GPAs were more likely to be retained.

Ellis-O'Quinn (2012) similarly pointed out the importance of program evaluation at the community college level for effectiveness when considering institutional resources.

### **Student Success Indicators Impacted by Debt**

The impact of federal student loans on community college student persistence has only been a recent focus. Like Ellis-O'Quinn (2012), McKinney and Burrige (2014) thought previous inquiry was limited to the effects of student loans on student persistence at the 4-year institution level. In order to determine if a relationship exists between financial aid and student persistence, McKinney and Burrige (2014) chose to study the impact of financial aid on community college student persistence and non-completers. McKinney and Burrige (2014) did note that previous research suggests a possible non-linear relationship between student loans and student persistence. They stated that compared to their more fortunate student peers, loans have a greater negative effect on student persistence among low-income, part-time, minority students, which are consistent with community college student characteristics. This provided McKinney and Burrige (2014) justification to further examine community college student persistence as it had been given less attention. Their findings revealed that a student's ethnicity, attendance, and Pell grant status were not significant predictors of first year dropout, but GPA or academic performance was given as a significant indicator of dropout within the first year. It was observed that students from similar ethnic backgrounds who borrow federal loans within the first year have higher odds of dropping out than non-borrowers within their first year. Also noted, debt level was not a significant predictor of persistence as it has become accepted by students as a necessity (McKinney & Burrige, 2014).

## **Current Trend**

A general trend occurring in educational research has been the philosophy of using institutional data to aid in teaching and learning initiatives in the identification of at-risk students. The potential is to increase effectiveness and student success in higher education, specifically in community colleges where the online learning environments have the greatest potential for growth (Smith, Lange, & Huston, 2012). The authors' study found a strong correlation existing in the student's online activity indicators and course outcomes. As a medium for student intervention, online delivery offers log-in frequency, site engagement, student pace, and grades as effective predictors of course outcome (Smith et al., 2012).

## **Financial Aid Free Application for Federal Student Aid (FAFSA)**

No college student can receive federal student financial aid assistance without completing the FAFSA. FAFSA simplification and assistance has been a HEA reauthorization issue each time it is reviewed. The paper FAFSA contains 108 numbered questions, but applicants will actually view 142 questions, even though some may not apply to every applicant. The U.S. Department of Education says that less than 1% of FAFSA applicants submit a paper version as the majority complete the department's electronic option. The electronic option contains skip logic allowing some non-applicable questions to be omitted (Madzellan, 2015). Students receive federal and state need-based aid based on this FAFSA information combined with tax information (Olbrecht, Romano, & Teigen, 2016).

## **FAFSA Filing Behavior**

McKinney and Novak (2014) investigated FAFSA filing behavior among students attending community colleges, public 4-year institutions, and private 4-year institutions. It was determined that students who do not complete the FAFSA or file the FAFSA late are considered at risk of not receiving grant aid necessary for completion. It was estimated that 40% of all U.S. undergraduates do not file the FAFSA, 44% of first-year community college students compared to 26% public 4-year and 18% private 4-year students. It is anticipated that these non-filers are from low-income households that would qualify for need-based aid. The authors' intention was to allow for a better understanding of factors that predict FAFSA filing behavior among first-year college students and identify a relationship between timing of completion and the students' grant aid award. It was determined that delayed enrollment, part-time enrollment, and undecided majors are all strong indicators of not filing the FAFSA or filing late and that they influence student behavior. On average, late filers receive less state and institutional aid than students who complete the FAFSA early. Community college students exhibit the greater number of influential factors placing them at-risk of not completing the FAFSA or completing late as these students are characterized more often as delayed enrollment into college after high-school (28%) and/or enroll part-time (39%), in addition to being undecided of their major their first year (39%) (McKinney & Novak, 2014). Among those students deciding to file the FAFSA, 24% of public 4-year and 17% of private 4-year filed their FAFSA late compared to 54% of community college students filing late, demonstrating a greater need to provide financial aid awareness, especially deadlines, at the community college level. It was McKinney and Novak's (2014)

intention to influence policy makers on the importance of early FAFSA completion and increasing efforts to promote financial aid awareness.

### **FAFSA Current Trends**

Castleman and Page (2015) reiterated that students from low-income backgrounds commonly lack an understanding of financial aid. The students may receive initial secondary school assistance in completing the FAFSA but lack or do not seek out postsecondary school assistance in FAFSA refiling or completion of new requirements. Castleman and Page's (2015) study concerning promotion of FAFSA completion and renewal concluded they have a positive impact on students enrolled in community colleges.

### **Financial Aid Social Capital**

Previous research has given limited focus to how American community college students gained understanding of the use of federal financial aid and the resources they have access to in order to gain additional knowledge. McKinney and Roberts (2012) conducted a study to improve financial aid awareness among community college students to increase college access, persistence, and degree attainment. The study was a result of the realization that some community college students were not fully utilizing federal financial aid or completing the FAFSA even though a significant population of these students were lower-income, ethnic minorities, or first generation college students. The financial aid counselors' perspective and experiences were given limited consideration by previous research when examining why eligible students do not complete the FAFSA. McKinney and Roberts (2012), using the theory of social capital,

realized that community college students characterized as lower-income, first generation, and coming from secondary schools with fewer resources had less social networks to access information regarding college-related decisions. Community college financial aid counselors offer accessible sources of social capital in relation to financial aid. However, financial aid demographic data taken from California, Texas, and Florida showed a counselor-to-student ratio of one counselor to every 1,000 students, leading to a theme of community colleges being understaffed or underprepared to serve students. 94% of counselors studied perceived the most common reason for students not applying was their perception of not qualifying, and 66% of counselors said students felt the FAFSA was too difficult. The research provided community college and system administration justification for additional resources as this would equate to increased student enrollment due to lower counselor-to-student ratios and increased FAFSA understanding resulting in more federal financial aid (McKinney & Roberts, 2012).

### **Sources of Social Capital**

George-Jackson and Gast (2015) identified three main information sources available to be accessed by students to gain financial aid knowledge including parental, secondary school guidance counselors and teachers, and collegiate institutional internet sources. Parents are noted as the most important for informational support to students in completing the financial aid process at 4-year institutions (George-Jackson & Gast, 2015). Yet for those first-generation, low-income, non-traditional community college students, parents may not be a reliable source of social capital as they may be less knowledgeable or accessible to the student. McKinney (2015) later examined borrowers at an urban community college in a Texas metropolitan area in the spring 2013 semester

to show how community college students gained information about student loans and what factors they considered before accessing federal aid. McKinney (2015) mentioned that students had insufficient information and guidance when accessing student loans. Students borrowed out of perceived necessity to access higher education, and they had specific views of life after they had accumulated student loan debt. It was determined that community college students collectively expressed a willingness to borrow as they had limited options to gain access to higher education, and they did not adequately evaluate long-term consequences of debt.

### **Financial Aid SAP**

#### **SAP Implementation**

Robert Evans (1985), Director of the Office of Student Financial Assistance at Kansas State University, reviewed the institutional policy on SAP at his institution, and found that like at other universities, it was not clearly defined. A policy was developed that quantitatively measured the students' academic work through grade point average and quality of work through measurable progress towards a degree. It took into consideration how underrepresented student groups would be impacted and emphasized that those students who were having academic difficulty would need additional student services or risk losing their financial aid. Student categories, including minority, non-traditional age over 25, and part-time students, were anticipated to have an ineligibility rate approximately four or five time higher than other student groups (Evans, 1985). University constituents holistically wanted to hold students accountable in receiving financial assistance but desired flexibility in the policy to meet individual student needs especially in the appeal process. The approach Kansas State used to review the revised

policy recognized the policy implementation would have immediate implications as students would potentially lose their financial aid. Students would need to be made aware of the new policy as future enrollment would certainly be affected. Academic advisors would be key as they would work closely with students to resolve academic shortcomings (Evans, 1985). For Kansas State University, student awareness of the new policy implementation in fall 1982 became a primary focus. Departments on campus called students individually to discuss their financial aid status and informed new students of the policy during the enrollment process (Evans, 1985). Although Evans (1985) states that there was no statistical information to support his conclusion, he believed those students who received early intervention could correct their situation. He also admitted that the study did not reflect a significant number of students being able to correct their academic deficiencies before the following fall semester (Evans, 1985).

### **Institutional SAP Reaction**

In 1976, the U.S. government regulated that a student had to meet SAP towards a degree in the student's course of study in order to receive financial assistance under Title IV and stated an institutional policy had to be in place. McNair and Taylor (1988) conducted a study to determine if a student's grade point average could be used to measure academic improvement of students affected by the satisfactory academic policy. No statistical significance was found in comparing the mean GPA of students before financial aid suspension to that after financial aid suspension. It was noted that socioeconomic indicators such as marital status, sex, admission type, age, and financial need were significant factors in student success, and academic achievement of the students was influenced by receiving financial aid (McNair & Taylor, 1988). Racial

background led to a significant difference as more black students than white students were suspended from financial aid as black students made up 56% of those students suspended from receiving financial aid and 73% of white students maintained SAP (McNair & Taylor, 1988). The academically disadvantaged students characterized by low grades and low verbal SAT scores also comprised the majority of the students suspended from receiving financial aid. McNair and Taylor (1988) observed the socioeconomic factors as the major barrier to student success and stated that academic achievement is impacted by the receipt of financial aid as well as the combination of these factors.

### **Transient Students**

More recently, Baum (2015) stated SAP requirements to maintain financial aid eligibility in general as a minimum 2.0 GPA and completing at least two-thirds of enrolled hours. She further stated that SAP requirements could be made more effective if students were tracked across institutions. Baum (2015) does not mention the GPA and completion hours needed to meet cumulative standards, which is an issue community colleges face with transient populations. The concern is that transient students who lose financial aid eligibility at one institution can transfer to another institution and receive federal financial aid on probationary status until academic progress is shown at that institution. For example, an institution may not classify a student's financial aid status until that student has taken six credit hours of institutional coursework, which allows students to bounce their enrollment among various institutions. Student success, as it relates to financial aid, is lacking a focus of tracking students across institutions (Baum, 2015). The student's pace of completion would eventually stop the receiving of aid as they must complete within 150% of the length of their program (Porter, 2016). At the

community college level, that length is generally 60 hours, and it is typically 120 hours at the university level. Without SAP requirements, a student could receive federal aid without ever making progress towards completing a degree (Porter, 2016).

### **Higher Education Reauthorization**

Each time the Higher Education Act of 1965 nears reauthorization, the legislative process makes attempts to address higher education and societal issues of that time period. Madzelan (2015) contemplated future HEA reauthorization by examining previous occurrences. The Education Amendments of 1972 established a portable grant program currently known as Federal Pell Grants. Its original intent was to allow students and parents more options in choosing an institution (Madzelan, 2015). The author describes the Pell Grant program as directing funds to students rather than institutions and setting the federal government's role in providing resources toward higher education (Baum, 2015). The Higher Education Amendments of 1992 simplified and streamlined the FAFSA process to establish accountability of recipients. Madzelan (2015) conveys that reauthorization is needed to meet constituent needs and policy objectives while considering budgetary priorities.

### **Student Loan Debt Focus**

In 2003, the U.S. Congress, in its reauthorization of the Higher Education Act that governs the administration of federal financial aid programs, focused on student loans. Some entities called for increased limits on student loans but were concerned that funding would be taken from Pell grants that served low-income students. Community college entities argued that borrowing excessive student loans at the community college level

added more financial risks to those students as community college students had higher drop out and higher default rates. This was consistent for community colleges as they historically tried to put less financial burden on students, but others argued community colleges were not as affordable as they were previously (Dowd & Coury, 2006). Dowd and Coury (2006) found limited research on the effects student loans had on community college student persistence. The authors found that student loans were negatively associated with student persistence and dependent financial aid status. Whereas, academic performance were strong positive indicators of persistence and degree attainment (Dowd & Coury, 2006).

### **SAP Focus**

The Secretary of Education in October of 2010 amended programs authorized under Titles IV of the HEA. With these amendments, the SAP Title IV regulation became effective July 2011. This mandated that institutions put a SAP policy in place that defined performance indicators, when SAP would be measured on the academic calendar, how students would be classified and notified of the financial aid status, and which processes and channels for those students who did not meet SAP requirements would be used to appeal the decision (U.S. Department of Education, 2012a).

### **Summary**

The Higher Education Act was last reauthorized in 2008 and has continued to operate since without being reauthorized. On the fall 2017 agenda for Congress is the reauthorization of the Higher Education Act. Reauthorization would allow Congress to assess potential changes to the program and appropriate the level of funding the program

receives, which is pivotal as parties compete for fiscal support. There are interest groups that have made recommendations to Congress concerning changes to the HEA as institutions are now seen as dependent on federal funding and students continue to sink further into insupportable debt. One of their recommended solutions would be for institutions to be liable for a percentage of student loan debt in cases of default due to degree non-completion in a certain time frame after exiting the institution. Liability exemption would exist based on institutional retention of these students, which would again support the notion that financial aid operations focusing on student retention is a budgetary discussion.

The current study is in reaction to the enforcement of SAP standards at the institutional level. A valid intervention needs to be developed to support a wide range of student outcomes. Institutions need to have a SAP policy in place that is accessible and understandable to students. Students need to be informed of their SAP status and become knowledgeable of their status origin and future impact. Institutional administration needs a tool to assist them in the SAP appeal process, allowing for a more objective decision-making procedure that can be applied across a diverse student population. Determining the effectiveness of this intervention program will provide justification to continue financial aid intervention in a time when efficiency in budgetary decisions is critical.

Factors that influence student retention have previously been a focus of research and continue to increase in importance to institutions financially as state financial support decreases. Tuition gained from retaining students has become a budget discussion at the community college level as student enrollment fluctuates semester to semester. Universities can easily outcompete and out recruit community colleges to get higher

qualified and higher achieving students who have the financial resources to pay tuition and fees and are more likely to be retained. Financial aid operations have become a strategic part of student recruitment and maximizing institutional revenues (Olbrecht et al., 2016).

Madzellan (2015) expresses his position most accurately on pages 74-75 saying “declining financial support provided directly to colleges and universities by states is properly identified as the primary cause of rising college prices.” With the majority of K-12 students nationally attending public schools, college is the first time parents and students receive a tuition bill and gain an understanding of the cost of higher education. Resources have to be used in an efficient manner to best serve the identified student population that produces desired student outcomes (Madzellan, 2015). Baum (2015) echoes that sentiment of providing resources to low-income students and getting them in the door of postsecondary education is not enough. Ways to support student success and educate students on financial aid are simultaneously needed. Programs should be required to not only be effective in assisting students but also efficient in spending tax dollars (Baum, 2015).

Olbrecht, et al. (2016) summarize in their explanation that state funding to institutions has shifted based on measurable outcomes, and it indicates a future change in how higher education will be funded. The focus will be less on quantity of students and more on quality of the student experience, including retention and completion. It is fundamental for those working in institutional financial aid offices to connect financial aid practices to other institutional operations along with student retention and success (Olbrecht et al, 2016).

In Chapter 3, the Theoretical Framework will be presented to confirm the intent of the research and the linkage of the literature review provided. The study's approach will be explained as it was determined by the implementation of a retrospective evaluation and quantitative data collected. It is the intention of the researcher to simply interpret and communicate the data without bias or corruption as either would diminish the purpose of the study to establish program effectiveness.

## CHAPTER III

### METHOD

#### **Research Design**

This study uses a quantitative approach along with a positivism theoretical paradigm. Sipe and Constable (1996) state that in a positivist paradigm, the researcher determines in advance what is going to occur and how the design is implemented. The subject matter does not determine the design or its modification if necessary. The subject matter is only there to be observed and uncovered. Positivism is viewed as scientific because a reality does exist and the researcher seeks to identify cause and effect of that reality. It is common practice in quantitative studies while following procedural steps to produce objective results that can be generalized to a larger population. The ontology of positivism, or questioning of its existence, reveals the reality of research is objective and needs only to observe or discover what is already in existence. The epistemology of positivism, or purpose of truth, lies with the researcher's ability to observe truth and communicate the truth in a way that others can gain understanding as the truth should be consistent for all observers (Sipe & Constable, 1996). Positivism is conventional and applies to this study as it is observational to discover if academic performance in an online intervention course is a significant predictor of a student's post-semester cumulative GPA and post-semester completion rate which are used to indicate satisfactory academic performance in receiving federal financial aid. The analysis was

used to determine relationship correlation between independent variables and program effectiveness.

A Multiple Linear Regression was used to analyze the linear combination of pre-existing student academic performance indicators, online intervention completion, and institutional SAP indicators to determine whether a student's completion and academic performance in the online intervention correlated with the student meeting SAP standards therefore being retained by the institution. The independent variables included pre-semester cumulative GPA (Variable 1), pre-semester completion rate (Variable 2), current semester GPA (Variable 3), current semester hours attempted (Variable 4), current semester hours completed (Variable 5), current semester completion rate (Variable 6), and completion of an online intervention (Variable 7). These independent variables were studied to determine if there was a variable correlation that can be utilized in predicting a students' post-semester cumulative GPA and post-semester completion rate, which were the dependent variables. These dependent variables indicate if a student has met SAP standards. Meeting or approaching post-semester SAP indicators defines student outcome success.

A Standard Multiple Linear Regression Model with the ENTER Method was used to examine the linear combination of these seven independent variables. With seven variables utilized, a model sample size consists of ten participants per variable or a minimum cohort sample of seventy participants. The null hypothesis states that the linear combination of these seven variables as predictors of a students' post-semester GPA and post-semester completion rates are not significant. A Standard Multiple Regression Model with the STEPWISE Method was also applied to rule out any inferior predictors.

In this method, the seven variables are included one at a time to determine significance of each variable and the primary goal is to infer if the online intervention course performance is a significant predictor of the students' post-semester cumulative GPA and post-semester completion rate, which are SAP indicators. When the online intervention course was examined in combination with the other indicators, a high level of variance in the student's post-semester GPA and post-semester completion rate should be accounted for by the students' linear combination of all variables.

### **Research Questions**

The following research questions were established in this study:

1. What is the causal impact of the online intervention course on meeting SAP post-semester indicators?
2. Does a linear relationship exist within the independent variables that can be used to determine program effectiveness?
3. Does student performance in an intervention course correlate with that student meeting Financial Aid SAP?

### **Participants**

Howell (2013) states that our estimate of correlation depends on the size of our sample (N) and the number of predictors (p) we have. It is stated that a study should have at least 10 observations or participants for each predictor. In the first instance, with seven independent variables as predictors, this study should have at least 70 participants.

Howell (2013) further states in his rule that N should exceed p by a least 50. Based on

the second rule,  $N$  should exceed  $p(7)$  by 50 so this study should have at least 57 participants. These two rules are related to the reliability of the correlation; however, this study chose to approach sample size to use statistical power to address population correlation (Howell, 2013).

The sample population consists of students attending a rural, medium-serving, 2-year community college in a state in the southeastern United States. The public community college is classified as an Associate's Degree College with mixed Transfer/Career & Technical programs and mixed Traditional/Non-traditional student populations (Carnegie Commission on Higher Education, 2016). The community college district encompasses nine counties, which is the largest geographic community college district in that state. The historical main campus is located in the geographic middle of the district and serves approximately 20-25% of the total student population. Two additional campuses opened in 1985; the northern commuter campus is at the most northern county of the district and serves approximately 25% of the total student population, and the most southern commuter campus is located in the most heavily populated county in the district, is in close proximity to the capital city of the state and consequently serves over 50% of the total student population. The total district-wide student population approaches approximately 6,000 students. One limitation stated was that this study estimates the impact of a program without the use of a counterfactual or non-treatment group; thus the extensive participant description is provided to support generalizability of the linear relationship between variables. Transferability of participant characteristics can be assumed throughout the state community college system as the institution contains the largest geographic district within the state system in serving both

areas considered rural and affluent, as well as the highest populated district in the state. It can be inferred that it represents a sufficient cross-section of the state population allowing individual institutional results to be transferred to comparable institutions using like independent variables within the state. This design will produce results that could be used toward future consideration for national transferability should that become a focus if program effectiveness is determined and deemed credible. Testing across other state populations with consistent use of independent variables should be conducted as financial aid issues impact institutions nationally.

Participants are designated categorically as financial aid probationers who are required to complete an online intervention course as part of their academic plan in regaining or maintaining their financial aid awards. The course contains four week-long modules consisting of financial aid literacy, academic and career planning, developing a comprehensive education plan, and student self-actualization. The institutional population incorporates all genders, multiple ethnicities, and an age range between traditional 18-year-old college students and non-traditional age college students with a mean age of 25 years old. The population consists of those students who have completed a minimum of six institutional hours with less than a pre-semester cumulative 2.00 GPA, have a pre-semester completion rate of less than 67 %, and have completed the financial aid appeal process to be granted an additional provisional semester of federal financial aid. The population also consists of those students having transferred from another institution meeting the same GPA and pre-semester completion rate, who have not yet completed institutional hours. Students categorized as financial aid probationers would account for approximately 500 students per semester or roughly 7-10% of the district student

population. It is mandated for this population to participate in an online course intervention on financial aid literacy as part of their academic plan for reinstatement of their federal financial aid award, but it is anticipated that not all designated will participate.

### **Intervention Course**

The online intervention course served as the means used to measure academic performance in assessing the students' comprehension of financial aid literacy. The course was delivered via an online Canvas® medium, and it had a 4-week academic start and end date occurring during the second and third 4-week semester terms. The course counts for one credit hour, and there was an academic grade awarded impacting the students' GPA and completion rate. The course contains four week-long modules consisting of financial aid literacy, academic and career planning, developing a comprehensive education plan, and student self-actualization. The student outcomes express how each of these aspects impacts their ability to acquire and utilize federal financial aid for the purposes of educational expenses. The grading scale is consistent with that of the institution and shows the levels of satisfactory or unsatisfactory academic performance allowing the one credit-hour online intervention outcomes to provide an inference that students either increased their level of understanding of each module and its application or remained unchanged.

### **Data Collection**

Data collection consisted of pre-existing student indicators of those participating in the online intervention as well as indicators collected once the online intervention had

been completed. For the independent variables, pre-existing data included pre-semester cumulative GPA and pre-semester completion rate defined as GPA hours divided by total cumulative hours. As well as data collected at the conclusion of the semester including current semester GPA, current semester hours attempted, current semester hours completed, current semester completion rate, and current semester academic performance and completion in the online intervention as defined on a 10-point grading scale in the one hour credit course. In addition to collecting data for the seven independent variables, at the conclusion of the semester, the post-semester dependent variable were collected as participant outcomes. Post-semester cumulative GPA and post-semester completion rate are student indicators in meeting SAP for federal financial aid. Both pre-existing and outcome data were accessed directly through the institution's data portals BANNER and Argos reporting. In Argos reporting, data is tracked specifically on student cohorts as they are identified and given a student attribute as a Financial Aid Probationer. The data collection process was completely non-invasive to the participant.

Data confidentiality is of the highest concern at the institutional level even though no data threat would be anticipated. Data were accessed only by internal stakeholders for the purpose of program effectiveness determination. Communication was streamlined as the institution's Department of Financial Aid delivered correspondence to the participants concerning their financial aid status and their compliance in participating in the online intervention course as part of their educational plan. At the completion of the semester, student outcomes were communicated only to appropriate corresponding institutional departments for recording purposes. Student names and financial aid status were not disclosed as only institutionally-generated identification was provided to the researcher

and used as participant identifiers. It was not the purpose of this study to examine individual participant circumstances, but the purpose was to ascertain a relationship between independent variables to be inferred on future population with like indicators. It is allowed by FERPA for institutions to disclose student records, without consent, to institutional parties with education interest in making administrative decision (FERPA, 2015).

### **Data Analysis**

The data collected were analyzed and interpreted using numerical, categorical, and frequency descriptive statistics. Additionally, variables are defined within correlation of linear combinations to determine the existence of relationships. This analysis provided central tendencies to allow inference among participants and probability of equally expected outcomes.

Research Question 1) What is the causal impact of the online intervention on meeting SAP indicators? SAP determination is derived from post-semester indicators of cumulative GPA and completion rate. Descriptive statistics of participant baseline pre-semester indicators were compared to post-semester indicators. They were examined using paired sample t-tests to compare sample means of the same participant cohort with the primary focus to determine the significance of the mean difference in both cumulative GPA and completion rate. The null hypothesis states that completing the intervention course yields no change from pre-semester to post-semester indicators.

Research Question 2) Does a linear relationship exist within the independent variables that can be used to determine program effectiveness? In using a standard multiple regression procedure with the ENTER Method, it is determined if independent

variables 1, 2, 3, 4, 5, 6, and 7 could predict a students' post-semester GPA and post-semester completion rate at a significance level of 0.05. The null hypothesis states that the linear combination of those independent variables as predictors of student's post-semester GPA and post-semester completion rate are not significant. It was the intention to determine if a positive correlation exists between all independent variables and predicting post-semester indicators. Additionally, it was determined if the level of variance in the students' post-semester indicators accounted for by the linear combination of the independent variables.

In addition to the ENTER Method, the STEPWISE Method was calculated using the same significance level of 0.05 to determine if any independent variables could be excluded. The null hypothesis remained constant in addition to the intention to determine if a positive correlation exists between all independent variables and predicting post-semester indicators with the exception of allowing certain independent variables being identified as insufficient predictors. With the study focusing on effectiveness of the online intervention strategy, it is essential to determine that independent variable's significance.

Research Question 3) Does student performance in an intervention course correlate with meeting Financial Aid SAP? Descriptive statistics of participant intervention outcomes and participants being categorized post-intervention as good standing, probationary standing, and appeal standing towards SAP were examined using cross tabulation.

## **Summary**

Information presented in this chapter described a quantitative research design and the reasoning for its approach. Research design and research questions were stated in relation to the performance of an impact evaluation on an institutional program. A description of participants and description of an effective sample size were given to produce reliable findings. The intervention course and participant outcomes were described as were their significance as they relate to the findings. Data collection and data analysis were explained to be non-invasive as post participant outcomes were the focus in determining program effectiveness.

## CHAPTER IV

### RESULTS OF THE STUDY

#### **Findings**

A relationship between the online intervention and SAP indicators was found. Completing the intervention course enabled the participants to expand their understanding of financial aid requirements and had a positive relationship on their post-semester SAP indicators. First, in both cumulative GPA and completion rate increased from pre-semester to post-semester following course completion. Second, a linear relationship was found to exist within the independent variables. The linear combination of completing the intervention course along with the independent variables had a positive impact on predicting one of the two post-semester indicators: cumulative GPA. The combination of pre-semester cumulative GPA, current semester GPA, pre-semester completion rate, and intervention course completion had a significant role in predicting post-semester cumulative GPA, providing the simplest combination with the maximum prediction. Finally, a student's performance in the intervention course was determined to impact the student meeting SAP. A direct correlation was observed that students with higher grades in the intervention course had higher percentages of retention the following semester.

### Summary Descriptive Statistics (Intervention Course)

Data were collected from 204 participants across three campuses in an online intervention course during the fall 2016 and spring 2017 semesters at a public, rural, medium-serving community college in a southeastern state. Total enrollment for the intervention course during the fall 2016 and spring 2017 semesters was 210 students, but six students were not categorized as financial aid probationers and determined to be outliers as they were allowed to take the 1 hour course credit to assist in graduation elective requirements. Approximately half of the student participants were from the southern satellite campus as shown in Table 1. The southern satellite campus is designated a commuter campus and is in close geographic proximity to the state's capital and most populated city within the state. Table 2 shows the semester breakdown of participants in the intervention course. The fall 2016 semester historically has a higher district-wide enrollment, but in this instance has a slightly lower course enrollment than the spring 2017. The inverse relationship can be inferred from student outcomes of the fall 2016 semester resulting in larger enrollment in the spring 2017 semester.

Table 1

#### *Campus Breakdown*

<b>Campus</b>	<b>Number</b>	<b>Percentage</b>
Historical Main	60	29.4%
Northern Satellite	45	22.1%
Southern Satellite	99	48.5%
District Wide Total	204	100%

Table 2

*Semester Breakdown*

<b>Semester</b>	<b>Enrollment</b>	<b>Percentage</b>
Fall 2016	95	46.6%
Spring 2017	109	53.4%
Academic Year	204	100%

**Summary Descriptive Statistics (Participants)**

The summary descriptive statistics provided for the 204 participants were further observed regarding participant inputs and outputs. Table 3 displays the independent variables examined to determine participant SAP status. For the pre-semester cumulative GPA range, participants had a minimum of 0.00, a maximum of 3.86, and a mean GPA of 1.896. For the pre-semester completion rate range, participants had a minimum of 0% completed, a maximum of 100% completed, and a mean of 55.57% of coursework completed. For current semester GPA range, participants had a minimum GPA of 0.00, a maximum GPA of 4.00, and a mean of 2.229. For current semester hours attempted range, participants attempted a minimum of 5 hours, a maximum of 34 hours, and a mean of 17.36 hours of coursework. For current semester hours completed range, participants completed a minimum of 0 hours, a maximum of 21 hours, and a mean of 12.77 hours of coursework. For the current semester completion rate range, participants completed a minimum of 0%, a maximum of 100%, and a mean completion of 74.65% of coursework.

Table 3

*Participant Breakdown*

<b>Variables</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std Dev</b>
Pre-Sem Cum GPA	0.00	3.86	1.896	.57668
Pre-Sem Comp Rate	0%	100%	55.57%	.15308
Current Sem GPA	0.00	4.00	2.229	1.06483
Curr Sem Hours Att	5	34	17.36	3.39
Curr Sem Hours Comp	0	21	12.77	5.524
Curr Sem Comp Rate	0%	100%	74.65%	.31443
Post-Sem Cum GPA	0.37	3.76	2.0436	.56719
Post-Sem Comp Rate	11%	100%	60.04%	.15046

Table 4 shows participant variance of pre-semester, current semester, and post-semester indicators. SAP indicators were noted as below 2.00 GPA and/or below a 67% completion rate. Of the course intervention participants, 73.5% had below a 2.00 pre-semester GPA, 35.8% had below a 2.00 current semester GPA, and 52.9% consequently had below a 2.00 post-semester GPA. Of the course intervention participants, 81.4% had below a 67% pre-semester completion rate, 30.4% had below a 67% current semester completion rate, and 65.7% consequently had below a 67% post-semester completion rate.

Table 4

*Participant Variance*

<b>Variables</b>	<b>Frequency</b>	<b>Cumulative Percentage</b>
Below 2.00 Pre-Sem GPA	150	73.5%
Above 2.00 Pre-Sem GPA	54	26.5%
Below 67% Pre-Sem Comp	166	81.4%
Above 67% Pre-Sem Comp	38	18.6%
Below 2.00 Curr Sem GPA	73	35.8%
Above 2.00 Curr Sem GPA	131	64.2%
Below 67% Curr Sem Comp	62	30.4%
Above 67% Curr Sem Comp	142	69.6%
Below 2.00 Post-Sem GPA	108	52.9%
Above 2.00 Post-Sem GPA	96	47.1%
Below 67% Post-Sem Comp	134	65.7%
Above 67% Post-Sem Comp	70	34.3%

The remaining independent variable, intervention course outputs, is shown in Table 5. 98 (48%) Of participants, earned a letter grade of “A”, 46 (22.5%) participants earned a letter grade of “B”, and 21 (10.3%) earned a letter grade of “C.” Cumulatively, 165 (80.8%) of participants earned a letter grade of “C” or higher with 39 (19.2%) total participants earning a letter grade of “D” or lower and 1 participant withdrawing from the intervention course.

Table 5

*Participant Outcomes*

<b>Letter Grade</b>	<b>Number</b>	<b>Percentage</b>
A	98	48%
B	46	22.5%
C	21	10.3%
D	9	4.4%
F	29	14.2%
Withdrew	1	0.5%
Total	204	100%

**Summary Descriptive Statistics (Participants Status)**

The summary descriptive statistics provided for the 204 participants were further observed established on participant post-semester status. Table 6 breaks down student retention based on participating in the intervention course. 108 (52.9%) Of participants, were retained the semester following their participation in the intervention course. Table 7 illustrates the student participants' following-semester SAP status associated with participating in the intervention course. 47 (23%) Of participants were in good SAP standing, and 62 (30.4%) of participants were in probationary SAP standing post-semester. 95 (46.6%) Of total participants, would be on appeal SAP post-semester and would need to appeal their financial aid award. Table 8 shows that 19 (9.3%) participants in the intervention course were able to graduate and complete their degree.

Table 6

*Next Semester Retention*

	<b>Outcome</b>	<b>Percentage</b>
Yes	108	52.9%
No	96	47.1%
Total	204	100%

Table 7

*Next Semester SAP Status*

<b>Status</b>	<b>Outcome</b>	<b>Percentage</b>
Good	47	23%
Probation	62	30.4%
Appeal	95	46.6%
Total	204	100%

Table 8

*Graduated / Completed*

	<b>Outcome</b>	<b>Percentage</b>
Yes	19	9.3%
No	185	90.7%
Total	204	100%

### **Data Analysis: Effect Size**

A measure of effect size is intended to provide a degree of significance of the treatment effect. Effect size can show the strength of the relationship depending on the sample size and level of alpha. A large enough sample size and large enough alpha level makes it easier to reject the null hypothesis. The alpha level used in this study was 0.05, which is commonly used in educational studies.

In determining power analysis of the effect size to compare sample means using paired sample t-tests, a type I error of 0.05 was used. Power = 1 – type I error for a power of 0.95, and 0.8 would be a needed power to show a large effect size. The primary focus is to determine the significance of the independent mean differences in both cumulative GPA and completion rates.

According to Howell (2013), the estimate of correlation depends on the size of the sample ( $N$ ) and the number of predictors ( $p$ ). It is stated that a study should have at least 10 observations or participants for each predictor. For the standard multiple regression analysis, with seven independent variables as predictors, this study should have at least 70 participants and consequently has 204 participants. Howell, (2013) further states in his rule that  $N$  should exceed  $p$  by a least 50. Based on this rule,  $N$  should exceed  $p$  (7) by 50, so this study should have at least 57 participants and has 204 participants. These two rules are related to the reliability of the correlation of variables.

This study's approach to sample size uses statistical power to address population correlation (Howell, 2013). According to G\*Power, the sample size necessary for this standard multiple regression analysis study to have at least a power of 0.8 to detect a large effect size of 0.35 using F-test, assuming an alpha of 0.05, is 70 participants. It is

the intention of this multiple regression analysis to determine if a positive correlation exists between all independent variables and predicting post-semester cumulative GPA and completion rate.

### **Examination of Research Question #1**

1) What is the causal impact of the online intervention on meeting SAP post-semester indicators? The research question stated that completing the intervention course enabled the participants to gain understanding of financial aid, having a positive impact on their post-semester SAP indicators. The null hypothesis states that completing the intervention course yields no change from pre-semester to post-semester indicators. SAP determination is derived from post-semester indicators of cumulative GPA and completion rate. Descriptive statistics of participants' baseline pre-semester indicators were compared to post-semester indicators using paired sample T-tests to compare sample means. These indicators would serve as a matching pair of the same participant cohort.

### **Data Analysis: Paired Sample T-test**

Paired-sample T-tests assume the cohort represents a random sample of the categorized participants; however, in this instance, the participant cohort is retrieved from the intervention course rosters. The significance level was set Type I Error =  $\alpha = 0.05$ , meaning that only 5% of the mean difference is by chance or sampling error. This significance level is typical for educational testing. The data set contains 204 participants or observations and degrees of freedom (df) equals the number of pairs minus 1. Estimating variability using degrees of freedom for this study would be  $df = 204 - 1 =$

203. The critical value is identified from the t table, critical value  $[t^*] = \pm 1.645$ , and it is a two-tailed test.

Table 9

*Paired Sample Statistics*

<b>Pairs</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
Pre-Semester Cumulative GPA	1.8960	.57668	.04038
Post-Semester Cumulative GPA	2.0436	.56719	.03971
Pre-Semester Completion Rate	.5557	.15308	.01072
Post-Semester Completion Rate	.6004	.15046	.01053

As indicated in Table 9, paired samples statistics, the means for both comparison groups are stated. The mean for pre-semester cumulative GPA is 1.896, the mean for post-semester cumulative GPA is 2.044, and the mean difference of -0.148. The mean of pre-semester completion rate is .556 or 55.6%, and mean of the post-semester completion rate is .600 or 60.0%, and the mean difference is -.044 or 4.4%.

In determining effect size using Cohen's d, the calculation takes the difference in each pairs' mean and divides by the population standard deviation to determine if the effect is small, medium, or large. The effect size of cumulative GPA is calculated as  $d = (1.896 - 2.044)/.424 = -0.148/.424 = -0.349$ . In examining effect size of completion rate, it is calculated as  $d = (.556 - .600)/.119 = -.044/.119 = -0.370$ . When d is greater than 0.2

but less than 0.8, it is determined to be a moderate effect size. In order to attain a desired large effect size, the sample size could be increased to reach a larger mean difference.

Table 10

*Paired Sample Test*

<b>Pairs</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t</b>	<b>df</b>	<b>Sig (2-tailed)</b>
Pre-Semester & Post-Semester Cumulative	-.14760	.42404	.02969	-4.971	203	.000
Pre-Semester & Post-Semester Completion	-.04475	.11904	.00833	-5.370	203	.000

Based on Table 10, paired sample T test, for the cumulative GPA indicator  $t = -4.971$  which is greater than the critical value  $[t^*] = \pm 1.645$ , and the completion rate indicator  $t = -5.370$  which is also greater than the critical value  $[t^*] = \pm 1.645$ . The  $t$  values of both indicators fall within the rejection region; therefore, the null hypothesis is rejected that completing the intervention course yields no change from pre-semester to post-semester indicators. The significant values or  $p$ -values for both cumulative GPA and completion rate are less than (.001) which is less than  $\alpha = 0.05$ , allowing the null hypotheses to be rejected for a second time. Both cumulative GPA and completion rate increased following the course intervention completion.

**Examination of Research Question #2**

2) Does a linear relationship exist within the independent variables that can be used to determine program effectiveness? The research question stated that using the

intervention course along with the independent variables has a positive impact on predicting post-semester SAP indicators. SAP determination is derived from post-semester indicators of cumulative GPA and completion rate. In using a standard multiple regression procedure with the ENTER Method, it is determined if independent variables 1, 2, 3, 4, 5, 6, and 7 could predict a student's post-semester GPA and post-semester completion rate at a significance level of 0.05. The null hypothesis states that the linear combination of those independent variables as predictors of student's post-semester GPA and post-semester completion rate are not significant.

In addition to the ENTER Method, the STEPWISE Method was calculated using the same significance level of 0.05 to determine if any independent variables could be excluded. The null hypothesis remained constant in addition to the intention to determine if a positive correlation exists between all independent variables and predicting post-semester indicators with the exception of allowing certain independent variables being identified as insufficient predictors.

### **Data Analysis: Standard Multiple Regression Analysis**

A multiple linear regression assumes there is a linear relationship between the dependent and independent variables. It assumes there is equal variance and random errors are normally distributed. It also assumes there is at least 10 participants for each predictor. In using a standard multiple regression procedure with the ENTER Method, it was determined if independent variables pre-semester cumulative GPA, pre-semester completion rate, current semester hours attempted, current semester hours completed, current semester completion rate, current semester GPA, and the intervention completion could predict a student's post-semester GPA and post-semester completion rate at a

significance level of 0.05. Dependent variables post-semester cumulative GPA and post-semester completion rate were both examined.

Table 11

*ENTER Method Model Summary*

<b>Dependent Variable</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of Estimate</b>
Post-Semester Cumulative GPA	.780	.772	.27064
Post-Semester Completion Rate	.804	.797	.06777

Results from Table 11 Model Summary indicates that 78% of variance in predicting post-semester cumulative GPA can be accounted for by the linear combination of the seven independent variables. In relation to post-semester completion rate, 80.4% of variance in predicting post-semester completion rates can be accounted for by the linear combination of the seven independent variables.

Table 12

*ENTER Method ANOVA*

<b>Dependent Variable</b>	<b>df</b>	<b>df Total</b>	<b>F</b>	<b>Sig.</b>
Post-Semester	7	203	99.371	.000
Cumulative GPA				
Post-Semester	7	203	114.958	.000
Completion Rate				

The Analysis of Variance (ANOVA) result is used first to test for the existence of a linear relationship between the dependent variable and any of the independent variables. Based on the ANOVA results illustrated, Table 12,  $F_{(7, 203)} = 99.371$ ,  $p < .001$  indicating the regression model as being significant in predicting post-semester cumulative GPA. Concerning post-semester completion rate,  $F_{(7, 203)} = 114.958$ ,  $p < .001$  also indicated the regression model as being significant in predicting post-semester completion rates.

Table 13

*ENTER METHOD Coefficients*

<b>Independent Variable</b>	<b>Post-Semester Cumulative GPA Sig</b>	<b>Post-Semester Completion Rate Sig</b>
Pre-Semester Cumulative GPA	.000	.310
Pre-Semester Completion Rate	.027	.000
Current Semester GPA	.000	.009
Current Semester Hours Attempted	.270	.007
Current Semester Hours Completed	.095	.000
Current Semester Completion Rate	.163	.728
Intervention Completion	.047	.817

Coefficients as listed in Table 13, it was determined that pre-semester cumulative GPA  $p < .001$ , pre-semester completion rate  $p = .027$ , current semester GPA  $p < .001$ , and intervention completion  $p = .047$  were statistically significant. Current semester hours attempted  $p = .270$ , current semester hours completed  $p = .095$ , and current semester completion rate  $p = .163$  as related to post-semester cumulative GPA were not statistically significant. Regarding post-semester completion rate, Table 13 shows that pre-semester completion rate ( $p < .001$ ), current semester GPA ( $p = .009$ ), current semester hours attempted ( $p = .007$ ), and current semester hours completed ( $p < .001$ ) were statistically significant. Pre-semester cumulative GPA ( $p = .310$ ), current semester completion rate ( $p = .728$ ), and intervention completion ( $p = .817$ ) were not statistically significant.

The results illustrated in Table 14 Correlations, indicated that pre-semester cumulative GPA (.725), current semester GPA (.606), current semester hours completed (.393), current semester completion rate (.401) and intervention completion (-0.219) all had significant correlation with predicting post-semester cumulative GPA. Pre-semester cumulative GPA and current semester GPA were variables noted to have a strong correlation when predicting post-semester cumulative GPA. Regarding post-semester completion rate, the results indicated that pre-semester cumulative GPA (.151), pre-semester completion rate (.693), current semester GPA (.542), current semester hours completed (.624), current semester completion rate (.645), and intervention completion (-0.389) all had significant correlation with predicting post-semester completion rate. Pre-semester completion rate, current semester GPA, current semester hours completed, and current semester completion rate were variables noted to have strong correlation in predicting post-semester completion rate. Intervention course completion has a significant negative correlation in predicting both post-semester indicators. As intervention completion goes from completion to non-completion, a student's post-semester cumulative GPA and completion rate both decrease. Current semester hours attempted also has a negative correlation; as a student's current semester hours attempted decrease, so does post-semester indicators of cumulative GPA and completion rate. The two asterisks indicates significance at the 0.01 level and one asterisks indicates significance at the 0.05 level.

Table 14

*ENTER Method Correlations*

<b>Independent Variable</b>	<b>Post-Semester Cumulative GPA Correlation</b>	<b>Post-Semester Completion Rate Correlation</b>
Pre-Semester Cumulative GPA	.725**	.151*
Pre-Semester Completion Rate	.099	.693**
Current Semester GPA	.606**	.542**
Current Semester Hours Attempted	-.044	-.014
Current Semester Hours Completed	.393**	.624**
Current Semester Completion Rate	.401**	.645**
Intervention Completion	-.219**	-.389**

*\*significant at 0.01 level*

*\*\*significant at 0.05 level*

The STEPWISE Method was calculated using the same significance level of 0.05 to determine if any independent variables could be excluded as predictors of post-semester GPA and post-semester completion rate. If all possible regression models were completed to find the best combination of independent variables, there would be 128 possible regression models to run built upon the seven indicators. In using the STEPWISE Method, it was desired to find the simplest combination of independent variables to make the best prediction of dependent variables. In using a standard multiple regression procedure with the STEPWISE Method, it was determined if independent variables pre-semester cumulative GPA, pre-semester completion rate, current semester hours attempted, current semester hours completed, current semester completion rate,

current semester GPA, intervention completion, or some combination thereof could predict a student's post-semester GPA and post-semester completion rate at a significance level of 0.05. Dependent variables post-semester cumulative GPA and post-semester completion rate were both examined.

Using the Model Summary of the STEPWISE Method, 52.6% of variance in predicting post-semester cumulative GPA can be accounted for by using only the pre-semester cumulative GPA. The combination of pre-semester cumulative GPA, current semester GPA, pre-semester completion rate, and intervention completion provides variance of 77.7% in predicting post-semester cumulative GPA. Within this created model the intervention is associated with a statistically significant improvement and provides the simplest combination of indicators for maximum prediction. Concerning post-semester completion rate, 48.0% of variance in predicting post-semester completion rates can be accounted for by using only the pre-semester completion rate. The combination of pre-semester and current semester completion rate provides 78.2% of variance in predicting post-semester completion rate. The combination of pre-semester completion rate, current semester GPA, current semester hours attempted and current semester hours completed provides 80.3% of variance in predicting post-semester completion rate. The STEPWISE Method noted that intervention completion was not a substantial indicator of predicting post-semester completion rate.

If the ANOVA result is significant, it is then examined for which of the predictors there is evidence of a linear relationship with the dependent variable. Based on ANOVA of the STEPWISE Method,  $F_{(4, 203)} = 173.181$ ,  $p < .001$  indicating the regression model with the combination of pre-semester cumulative GPA, current semester GPA, pre-

semester completion rate, and intervention completion as being significant in predicting post-semester cumulative GPA. Within that same combination, pre-semester cumulative GPA ( $p < .001$ ), current semester GPA ( $p < .001$ ), pre-semester completion ( $p = .017$ ), and intervention completion ( $p = .038$ ) were all statistically significant. Intervention completion was noted in having a positive relationship in predicting post-semester cumulative GPA. Concerning post-semester completion rate,  $F_{(4, 203)} = 202.600$ ,  $p < .001$  indicating the regression model with the combination of pre-semester completion rate, current semester GPA, current semester hours completed and current semester hours attempted as being significant in predicting post-semester completion rates. Within that same combination, pre-semester completion rate ( $p < .001$ ), current semester GPA ( $p = .006$ ), current semester hours completed ( $p < .001$ ), and current semester hours attempted ( $p < .001$ ) were statistically significant. It is noted that intervention completion was not statistically significant in predicting post-semester completion rate.

### **Examination of Research Question #3**

3) Does a students' performance in an intervention course correlate with that student meeting Financial Aid SAP? Descriptive statistics of participant intervention outcomes and participants retention status being categorized post intervention as good standing, probationary standing, and appeal standing towards SAP were also examined using cross tabulation.

### Data Analysis: Cross Tabulation

The probability of an event is predicated on situations or the combination of events. It was determined if the combination of participant performance in the intervention correlated to the participants' post-semester retention and SAP status.

Table 15

#### *Next Semester Retention*

<b>Intervention Grade</b>	<b>Total</b>	<b>Retained</b>	<b>Percentage</b>
A	98	66	67.3%
B	46	27	58.7%
C	21	4	33.3%
D	9	3	33.3%
F	29	8	27.6%
W	1	0	0%

As illustrated in Table 15, participants who earned a grade of “A” in the intervention course were retained at a rate of 67.3% and those who earned a grade of “B” were retained at a rate of 58.7%. A direct relationship is observed that as performance outputs go from “A” to non-completion, the probability of next semester retention decreases accordingly. Of the 108 participants retained the following semester, 92.6% completed the intervention with a grade of “D” or higher. Those students who succeeded to earn either an “A” or a “B” showed increased financial aid literacy in navigating the financial aid system and being retained the following semester at a higher rate than students earning lower grades.

Table 16

*Next Semester SAP Status*

<b>Intervention Grade</b>	<b>Total</b>	<b>Good Status</b>	<b>Percentage</b>
A	98	29	29.6%
B	46	13	28.3%
C	21	3	14.3%
D	9	1	11.1%
F	29	1	3.4%
W	1	0	0%

As illustrated in Table 16, participants who earned a grade of “A” in the intervention course attained good SAP status the following semester at a rate of 29.6%. A direct relationship is observed that as performance outputs go from “A” to non-completion, the probability of attaining good SAP status decreases accordingly. Of the 47 participants attaining good SAP status the following semester, 97.9% completed the intervention with a grade of “D” or higher. Those students who succeeded to earn either an “A” or a “B” showed increased financial aid literacy in understanding SAP limits at a higher rate than students earning lower grades. The academic year of fall 2016 and spring 2017 was the initial year of the intervention course offering and as such will act as a baseline to determine future 1-semester impacts on SAP status. This baseline report and comparison to future semesters will provide validity of program design.

## **Summary**

This chapter described the results of the statistical analysis for each of the three research questions. Founded on these analyses, it was concluded that participants in the online financial aid intervention course during the fall 2016 and spring 2017 semester were significantly impacted by participating in the intervention. Furthermore, it was determined that the program was deemed effective as it provided a positive causal impact on meeting post-semester SAP indicators; a relationship did exist within the independent variables and intervention completion as predicting the post-semester SAP indicator of cumulative GPA; and the participants' performance in the intervention correlated with them meeting Financial Aid SAP.

CHAPTER V  
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

**Summary of the Study**

This chapter includes the summary, conclusions, and recommendations based on the results of the study and statistical analysis. This chapter also details the limitations, implications, and recommendation for future considerations concerning the subject matter. The Higher Education Act was last reauthorized in 2008 and has continued to operate since without being reauthorized. On the fall 2017 agenda for Congress is the reauthorization of the Higher Education Act (NASFAA, 2013). Reauthorization would allow Congress to assess potential changes to the program and appropriate the level of funding the program receives which is pivotal as parties compete for fiscal support. Recommendations have been made to Congress concerning changes to the Higher Education Act as institutions are now seen as dependent on federal funding while students continue to sink further into insupportable debt.

This study is reactionary to the enforcement of SAP standards at the institutional level. A valid intervention was developed to support a wide-range of student outcomes. Institutions need to have a SAP policy in place that is accessible and understandable to students. Students need to be informed of their SAP status and become knowledgeable of the short-term origin and future impact of SAP. Decisively, institutional administration needs a tool to assist them in the SAP appeal process, allowing for a more objective

decision-making procedure that can be applied across a diverse student population. Determining effectiveness of this intervention program provides justification to continue financial aid intervention in a time when efficiency in budgetary decisions is critical. Factors that influence student retention have previously been a focus of research but it continues to increase in importance to institutions financially as tuition gained from retaining students has now become a budget discussion. Financial aid operations have become a strategic part of student recruitment and maximizing institutional revenues (Olbrecht et al., 2016).

Chapters one through four of this dissertation presented the introduction, review of literature, method of research, and statistical analysis results. Chapter one provided an introduction to the state of community college financial aid dependence, institutional SAP policy, SAP origination, SAP application during time of its implementation, and the importance of modern SAP based impacts on community college students. Chapter two included a review of literature to assist the audience in comprehending issues associated to financial aid SAP. There continues to be limited research available solely concerning SAP at the community college level. It was essential for the reader to gain understanding of the community college students' dependence on federal financial aid, as well as how institutional SAP policy and academic intervention impact continued financial aid eligibility to receive federal financial aid. The literature supports the belief of institutions focusing on student retention in order to improve budgetary concerns; however, students on financial aid probation had not been a primary cohort. Chapter three outlined the methods of processes used to analyze the impact of an online intervention course during the fall 2016 and spring 2017 semesters on participants designated categorically as

financial aid probationers who were required to complete an online intervention course as part of their academic plan in regaining or maintaining their financial aid awards. Chapter four described the results of statistical analysis used to examine each research question and why each particular analysis was chosen. Based on the analyses, statistically significant findings were established.

### **Summary of Findings and Conclusion**

Determining effectiveness of this intervention program justifies its continuation of providing resources to increase student financial aid literacy. The research questions used were as follows:

1. What is the causal impact of the online intervention course on meeting SAP post-semester indicators?
2. Does a linear relationship exist within the independent variables that can be used to determine program effectiveness?
3. Does student performance in an intervention course correlate with that student meeting Financial Aid SAP?

Examination of Research Question 1: What is the causal impact of the online intervention on meeting SAP post-semester indicators? The research question states that completing the intervention course enabled the participants to gain understanding of financial aid having a positive impact on their post-semester SAP indicators. The null hypothesis stated that completing the intervention course yields no change from pre-semester to post-semester indicators.

In first observing the descriptive statistics of participant variance, 150 (73.5%) of participants had a pre-semester cumulative GPA below a 2.00 and 166 (81.4%) of participants had a pre-semester completion rate below 67%. During the fall 2016 or spring 2017 semester in which they participated in the online intervention, 73 (35.8%) participants had a current semester GPA below 2.00 and 62 (30.4%) participants had a current semester completion rate below 67%. At the conclusion of the semester, 108 (52.9%) of participants had a post-semester cumulative GPA below 2.00 and 134 (65.7%) of participants had a post-semester completion rate below 67%. Based on descriptive statistics only, at-risk post-semester SAP indicators were reduced by 20.6% and 14.7% respectively signifying a positive impact on post-semester SAP indicators. According to the paired sample T-test analysis between pre-semester and post-semester indicators, the mean differences of both indicators increased. The cumulative GPA increased 0.148 and completion rate increased 4.4% from pre-semester to post-semester. The effect size was determined to be moderate (-.370) using Cohen's d. Additionally, both t values fell within the rejection region therefore allowing the null hypothesis that completing the intervention yields not change from pre-semester to post-semester to be rejected. Concurrently, both p-values were less than (.001) allowing the null hypothesis that completing the intervention yields not change from pre-semester to post-semester to be rejected again.

Ellis-O'Quinn (2012) found there to be a gap in research when studying the impact of an academic intervention, orientation classes on student success factors at the community college level. He attempted to assess whether a relationship existed between student success indicators, including GPA and retention, and a predictive student success

factor of completion of an orientation course taken by first semester entering rural community college students. Ramirez (2015) identified financial aid as a component of student development and paralleled its importance to student success with ancillary services such as advising or tutoring. He also provided ideas to improve student learning, retention, and graduation but did not offer guidance in improving student financial aid competence. According to this study, in the T-test analysis between pre-semester and post-semester indicators, the mean differences of both cumulative GPA and completion rate increased from pre-semester to post-semester signifying the effectiveness of increased financial aid literacy in those students completing the online intervention course.

Examination of Research Question 2: Does a linear relationship exist within the independent variables that can be used to determine program effectiveness? The research question would state that using the intervention course along with the independent variables have a positive impact on predicting post-semester SAP indicators. SAP determination is derived from post-semester indicators of cumulative GPA and completion rate.

The ENTER Method was first used to determine the relationship between independent and dependent variables. The linear combination of the seven independent variable shown 78% of variance in predicting post-semester cumulative GPA and 80.4% of variance in predicting post-semester completion rate. The ANOVA result indicated both regression models were significant in predicting post-semester cumulative GPA and post-semester completion rate. Subsequently, the STEPWISE Method was then used to determine which regression model was the best combination of independent variable in

predicting post-semester dependent variables. It was observed that 52.6% of variance in predicting post-semester cumulative GPA can be accounted for by using only the pre-semester cumulative GPA. The combination of pre-semester cumulative GPA, current semester GPA, pre-semester completion rate, and intervention completion provided 77.7% of variance in predicting post-semester cumulative GPA producing the highest combination. Concerning post-semester completion rate, 48% of variance can be accounted for by pre-semester completion rate solely. The combination of pre-semester, current semester GPA, current semester hours attempted, and current semester hours completed provides 80.3% of variance in predicting post-semester completion rate producing the highest combination. It was observed that as intervention completion goes from completion to non-completion, a student's post-semester cumulative GPA and completion rate both decrease. The ANOVA results further confirmed those highest combinations as statistically significant.

Examination of Research Question 3: Does student performance in an intervention course correlate with meeting Financial Aid SAP? Descriptive statistics of participant intervention outcomes and participant retention status being categorized post intervention as good standing, probationary standing, and appeal standing towards SAP were also examined using cross tabulation.

It was determined that the combination of the participants' performance in the intervention correlated to the participants' post-semester retention and SAP status. Participants that earned a grade of "A" in the intervention were retained at a rate of 67.3% and those that earned a grade of "B" were retained at a rate of 58.7%. A direct correlation is observed that as performance outputs go from "A" to non-completion, the

probability of next semester retention decreases accordingly. Of the 108 participants retained the following semester, 92.6% completed the intervention with a grade of “D” or higher. It can be inferred that if an intervention course participant attained a grade of less than “D”, the likelihood of them being retained is considerably low, and as their grade increases so does their probability of being retained. Participants that earned a grade of “A” in the intervention course attained good SAP status the following semester at a rate of 29.6%. A direct correlation is observed that as performance outputs go from “A” to non-completion, the probability of attaining good SAP status decreases accordingly. Of the 47 participants attaining good SAP status the following semester, 97.9% completed the intervention with a grade of “D” or higher. It can be inferred that if an intervention course participant attained a grade of less than passing, the likelihood of them reaching good SAP status is lower, and for those participants earning “A” or “B” their probability of reaching good SAP status increases significantly.

McKinney and Burrige (2014) studied the impact of financial aid on community college student persistence. They stated that compared to their more fortunate student peers, loans have a greater negative effect on student persistence among low-income, part-time, minority students, which are consistent with community college student characteristics. Their findings revealed that a student’s ethnicity, attendance, and Pell grant status were not significant predictors of first year dropout, but GPA or academic performance was given as a significant indicator of dropout within the first year. In this study, it can be inferred that online intervention course performance impacted SAP status and next-semester retention.

In concluding the determination of program effectiveness, descriptive statistics and research question responses were analyzed. In only examining descriptive statistics, there is a reduction in participants who are below a cumulative 2.00 GPA and below 67% completion rate pre-semester to post-semester. It can be inferred by only examining descriptive statistics that the intervention reduced the number of at-risk indicators pre-semester to post-semester. In answering the research question: “What is the causal impact of the online intervention on meeting SAP indicators?” the intervention yielded a significant change from pre-semester to post-semester, which is used in determining SAP indicators. In answering the research question: “Does a linear relationship exist within the independent variables that can be used to determine program effectiveness?” a linear relationship does exist for both dependent variables using the ENTER Method, however using the STEPWISE Method the intervention completion variable is only used in combination of predicting post-semester cumulative GPA. In answering the research question: “Does student performance in an intervention course correlate with meeting Financial Aid SAP?” it can be determined that the higher the participant’s grade, the higher the probability of retention and reaching required SAP status. The program can be considered effective as it provides causation for increased performance, subsequent retention, and increased financial aid status.

The addition of an online intervention course supports that causation linkage, it supports the correlation of predicting post-semester cumulative GPA, and the performance within the course provides inference to a larger population of student participants. Due to these factors, the program is justified in its continuation of both human and financial resource allocation. In determining cost benefit or return on

investment, it can be calculated determining tuition gained from participant retention and reception of federal financial aid minus program cost. This program saw an overall retention rate of 52.9% and compared to the overall institutional retention rate of approximately 40%, it can be concluded that the program outperforms the institution.

### **Limitations**

The main challenge in executing an effective program evaluation is to identify the causal relationship between the program and the student outcomes of interest. Focusing on causality of an evaluation determines the methodologies that can be applied. To estimate the impact of a program, most methods use a counterfactual or non-treatment group that can be used for comparison to the program participants which have the best opportunity to produce valid generalizability. However, retrospective evaluations evaluate program impact after implementation relies heavily on assumptions (Gertler, 2010).

If a prospective evaluation was being designed during implementation of the evaluation, a mean comparison of pre-semester and post-semester indicators between the treatment and non-treatment group could be employed to determine causal impact. A paired sample T-test was applied in the examination of research question 1, it assumes the cohort represents a random sample of categorized participants. In this study all participants were selected purposeful as retrieved from the intervention course roster which is why this method was not used exclusively. A multiple regression analysis was applied to determine correlation between variables allowing the anticipated generalizability which is the intent of the program evaluation. Within the STEPWISE

Method, it was determined generalizability could only be anticipated in predicting post-semester cumulative GPA.

### **Implications of the Study**

State community college budget cuts were imminent for the 2017-18 fiscal year and have occurred. Cuts that have taken place at the institutional level have meant reduction in employee workforce, hiring freezes, budget reductions, and increased tuition. This program evaluation allows administrations to make responsible decisions based on asset allocation in a time of budget reductions and realignments. Determining effectiveness of this intervention program will also justify its continuation of providing resources to increase student financial aid literacy.

The results of this study have shown that the program can be evaluated as effective, and the program is justified in its continuation of both human and financial resource allocation. In determining program cost effectiveness or return on investment, it can be calculated determining the tuition and FTE in state funding gained from retention minus program cost. At the community college level in that state, institutional retention rates are approximately around 40% and this program was able to retain at-risk students in danger of losing federal financial aid at a higher rate. Each institution that participates in receiving federal Title IV funding is charged with enforcing SAP standards with the students attending their institution. Therefore, it is within the best interest of that institution to assist students in gaining financial aid knowledge, specifically concerning SAP standards, in order for those students to maintain receiving federal funding in the continuation of their degree completion. This consequently allows for a higher retention

rate and budget stabilization institutionally as the program can be expanded throughout the institution or replicated at other institutions.

For practitioners, this program can be used as part of institutional requirements in approving student SAP appeals and future justification of SAP appeal denials based on program performance. At this time, practitioners are left to subjective approval processes based on individual institutional policy, past student financial aid trends, and student perspective of their interpretation of financial aid SAP requirements which can be altered with the HEA reauthorization. From the student perspective, one cannot simply state he/she was unknowing of federal SAP standards as they are still responsible for meeting SAP standards in order to receive federal financial aid. Student feedback concerning the intervention has been found necessary and is useful in determining the intrinsic motivation of corrective academic performance to meet SAP requirements.

### **Future Recommendations**

The research and data analysis indicated that an online intervention course is an effective tool in retaining community college students on financial aid probation as each participant was enrolled in the intervention course. There are additional courses of action practitioners can consider based exclusively on outcomes presented and there are additional research opportunities that could strengthen those positions. With the current state of federal and local economies becoming more uncertain student retention as it pertains to financial aid imparts these additional recommendations:

1. At the institutional level, the SAP (SAP) policy can be amended to include the mandatory completion of the intervention course as part of the financial aid appeal and award process. Once program effectiveness was established, it should be the goal of the institution to reach a larger population of student participants to have those individuals realized the additional benefits of financial aid literacy. As the course was noted to have a causal impact on retaining those students, this would allow for continued evaluation of the program with greater participation of the at-risk cohort. This study took place over the course of an academic year, with greater participation fall to fall and spring to spring comparisons could provide trend analysis to address to specific needs.

2. At the institutional level, the intervention course was originally directed to increase financial aid literacy for those students at-risk of losing financial aid. Institutions are reactionary to changes in federal and state policy and students need to be educated on those policy changes if they are to be held accountable. Some institutions require an orientation course as part of their degree requirements, financial aid literacy should be a key function in navigating postsecondary education. Financial aid literacy either needs to be included, either within the orientation course requirement or presented as a stand-alone requirement in order to address material that impacts the majority of students. It was noticed that institutional enrollment is higher in the fall semester and lowers in the spring semester. The intervention course saw increased enrollment from fall to spring semesters, which leads to an understanding of fall semester student performance causing more students to be at-risk of not meeting SAP the following semester.

3. At the system-wide level, it was observed that each of the 15 community colleges has an institutional SAP policy and each policy holds the student accountable for accessing, understanding, and applying their SAP policy. Allowing for a system-wide financial aid literacy course to be evaluated and adopted could strengthen the system as a whole. This could be accomplished through the Mississippi Community College Board (MCCB), the state's community college coordinating board, to allow for course content continuity and collaboration. If not through the MCCB, the State Association of Student Financial Aid Administrators could be a strategic partnership in aligning SAP policies and execution throughout the state.

4. At the system-wide level, it was again observed that each community college has an institutional SAP policy but within each policy there are variations. As mentioned in the literature review section, there is an awareness of the transient nature of some students in community colleges as it pertains to receiving federal financial aid. If a student is suspended from receiving federal financial aid at one institution, they attempt to immediately enroll at a different institution in anticipation of receiving aid there. Institutions are not geographically isolated as they once were and with the Virtual Community College students have more options of enrollment. Currently there are inconsistencies that allow for this transient nature across the 15 statewide community colleges. Inconsistencies include how transfer hours will be accessed for SAP. One institution assesses the students' SAP status after they have attempted 6 institutional hours at that institution, another institution assesses after 12 hours of institutional coursework has been attempted, one institution states the transfer coursework will not affect the students' financial aid standing until the conclusion of their first semester there, and another assesses all transfer coursework at the beginning of the incoming semester not allowing the student to receive federal aid based on transfer work. An additional inconsistency includes if the student previously received Title IV funding during their transfer work as some institutions do not calculate that coursework for SAP but other institutions count all transfer coursework regardless of receiving Title IV funding during that particular

semester. Allowing for a system-wide uniformity of a financial aid literacy course allows the incoming institution to determine that the transient student was aware of their financial aid status prior to transferring and could be assessed at entry into the new institution whether being on financial aid warning or suspension. Earlier student identification allows for students to receive earlier detection and reception of service resources. Once the student has received their maximum level of federal financial aid their options diminish rapidly.

5. Future research includes the examination of federal full-time status of hours attempted per semester. Currently at the state and institutional level, 15 hours per semester undergraduate is considered full-time status while 12 hours per semester undergraduate is considered full-time status at the federal level to receive federal financial aid. In the Chapter 4 data analysis, the descriptive statistics showed that the cohort mean for hours attempted was 17.36 and the cohort mean for hours completed was 12.77 equaling a 74.65% completion rate. It has been found that completing a higher number of hours per semester leads to a quicker rate of degree completion. It was noted regarding SAP indicator post-semester completion rate that current semester hours attempted ( $p = .007$ ) and current semester hours completed ( $p < .001$ ) were statistically significant. Also, the results indicated that current semester hours completed (.624) and current semester completion rate (.645) both had significant correlation with predicting post-semester completion rate. Current semester hours attempted also showed a negative correlation, as a student's current semester hours decrease so does post-semester indicators of cumulative GPA and completion rate. Based on predicting the SAP indicator post-semester completion rate, there seems to be justification for increasing the federal requirement of full-time status from 12 hours to 15 hours attempted per semester.

6. Future research needs to include student perspective. Community college student characteristics have been detailed and have more characteristics considered at-risk than the traditional first-time full-time entering freshmen postsecondary student. It needs to be assessed from the student perspective whether or not their financial aid literacy increased and do they now have a better understanding of the factors impacting federal financial aid. Quantitatively based on performance, retention, and SAP status that their financial aid literacy increased, but was this the result of increased intrinsic motivation or other factors.

### **Summary**

The purpose of this study was to test for the retention of community college students who do not meet SAP indicators of federal financial aid and were categorized as either probationers, appellants, or being suspended. This program can be considered effective as it provides causation for increased performance, subsequent retention, and positive impact on financial aid status. The addition of an online intervention course supports causation linkage. It also supports the correlation of predicting post-semester cumulative GPA, and the performance within the course provides inference to the participant's future status.

Intervention effectiveness was needed as an impact evaluation to assess for intervention inefficiency, intervention adaptability, or intervention continuation of support for resource allocation justification. Institutional administrations are held accountable for asset allocation and effectiveness in concluding return on investment as it pertains to student service resources. Generalization of student participant outcomes to

larger student populations is essential in demonstrating sensible resource allocation in a time when community colleges are challenged with federal, state, and local budget reductions. It appears that climate is here for the foreseeable future.

This chapter further details the limitations of this study and addresses the need for future research consideration. Factors that influence student retention have previously been a focus of research but it continues to increase in importance to institutions and research has to focus on maximum impact while being cost effective. Financial aid operations have become a strategic part of student recruitment and maximizing institutional revenues.

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APPENDIX A  
IRB APPROVAL LETTER



Vic Parker <vsp2@msstate.edu>

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**Not Human Subjects Research - IRB-17-651, Community College Student Retention: Effectiveness of online intervention methods in retaining students on financial aid probation.**

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apb30@msstate.edu <apb30@msstate.edu>

Mon, Nov 13, 2017 at 3:39 PM

To: mef348@msstate.edu, nca1@msstate.edu, htc1@msstate.edu, sbk2@msstate.edu, vsp2@msstate.edu

Protocol ID: IRB-17-651

Principal Investigator: Mark Fincher

Protocol Title: Community College Student Retention: Effectiveness of online Intervention methods in retaining students on financial aid probation.

The review of your study referenced above has been completed. While we sincerely appreciate the submission of your study, it was determined that your research does not require HRPP/IRB oversight at this time.

If in the future, if your research changes, or you feel that the intent has changed, please feel free to contact our office to determine if an existing data application should be submitted.

Though your research does not require HRPP/IRB oversight, we strongly encourage you to use best practices in the conduct of your research. These can include but are not limited to: (a) providing information pertaining to the study so that the participant can make an informed decision; (b) giving them your contact information for future reference; (c) explaining their participation is voluntary and they can stop at any time without penalty; (d) and (e) proper recruitment of participants.

The project may proceed without further review from this office.

If you have any questions about this determination, please contact the HRPP.