

5-6-2017

## The Impact of the Student Support Services Program on the Retention of Students at Southeast Kentucky Community and Technical College

Carolyn Sundy

Follow this and additional works at: <https://scholarsjunction.msstate.edu/td>

---

### Recommended Citation

Sundy, Carolyn, "The Impact of the Student Support Services Program on the Retention of Students at Southeast Kentucky Community and Technical College" (2017). *Theses and Dissertations*. 4515.  
<https://scholarsjunction.msstate.edu/td/4515>

This Dissertation - Open Access is brought to you for free and open access by the Theses and Dissertations at Scholars Junction. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholars Junction. For more information, please contact [scholcomm@msstate.libanswers.com](mailto:scholcomm@msstate.libanswers.com).

The impact of the student support services program on the retention of students at  
Southeast Kentucky Community and Technical College

By

Carolyn Mitchell Sundy

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 2017

Copyright by  
Carolyn Mitchell Sundy  
2017

The impact of the student support services program on the retention of students at  
Southeast Kentucky Community and Technical College

By

Carolyn Mitchell Sundy

Approved:

---

James E. Davis  
(Major Professor / Graduate Coordinator)

---

Stephanie B. King  
(Committee Member)

---

William M. Wiseman  
(Committee Member)

---

W. Bruce Ayers  
(Committee Member)

---

Christopher Clayton Armstrong  
(Committee Member)

---

Richard L. Blackburn  
Dean  
College of Education

Name: Carolyn Mitchell Sundy

Date of Degree: May 5, 2017

Institution: Mississippi State University

Major Field: Community College Leadership

Major Professor: Dr. James E. Davis

Title of Study: The impact of the student support services program on the retention of students at Southeast Kentucky Community and Technical College

Pages in Study: 91

Candidate for Degree of Doctor of Philosophy

A variety of programs exist that provide assistance to under-prepared and at-risk students at 2-year and 4-year institutions of higher education. One of these programs is Student Support Services (SSS), a federal program funded by the U. S. Department of Education. The SSS program provides opportunities for academic development, assists students with basic college requirements, and serves to motivate students toward the successful completion of their postsecondary education. The goal of SSS is to increase the college retention and graduation rates of its participants and help students make the transition from one level of higher education to the next. SSS may also provide assistance to students receiving Federal Pell Grants (84.063). Those eligible to participate in SSS programs include students from low-income families, those who are first-generation college enrollees and students with disabilities evidencing academic need. The program includes tutoring; academic counseling, personal counseling, career advising; study skills enhancement and personal development workshops. Assistance is also given to students to apply for various forms of financial aid, including state and

federal grant programs and local scholarships. Most programs also provide cultural enrichment activities.

This study investigates the impact of the SSS program on the retention of students at SKCTC. Participants in this study were 125 students in the SSS program and 125 non-SSS students who entered SKCTC in the fall of 2003 and ended in 2007. The study compares the demographic profile of these groups.

## DEDICATION

I dedicate my dissertation to my family, friends, co-workers and students served by programs like Student Special Services.

A special feeling of gratitude is extended to my loving sons, Terry (Tee) and Trevor, who have been a constant source of support and encouragement as I dealt with the challenges of graduate school.

I have been blessed with the presence of several strong women in my life. First and foremost, among them was my wonderful mother, Evangeline Mitchell, who passed from this life four years ago. My mom loved me unconditionally and challenged me to always aim high and to strive to be the very best person I could be. This dissertation is dedicated to her memory.

It is also dedicated to my sisters, Cindy, Lois, and Kim, who have never left my side and have been a consistent source of encouragement, and to my brother, Bruce, for his steadfastness and unwavering support.

Finally, I wish to make a dedication to two additional groups: (1) the men and women who serve students through programs like Student Special Services, and (2) the students who are served by the programs, especially those with whom I have been privileged to work.

## ACKNOWLEDGEMENTS

Completing the doctorate is probably the most challenging activity I have undertaken. One of the joys of completion is to look over the journey past and remember all the friends and family who have helped and supported me along this long but fulfilling road. This educational endeavor would have never been accomplished without special people. It has been a great privilege to spend my professional career at a great institution with a fearless leader and role model, Dr. W. Bruce Ayers. Dr. Ayers is to be credited for being a lifelong educator, one who believed that you can always learn, that you should set your personal goals high and work hard to achieve them. He has been a great mentor, advisor, and friend. His guidance has made this a thoughtful and rewarding journey.

I would like to thank two women that mentored me early in my career and continue to provide the encouragement needed be in leadership positions. I would like to express my heartfelt gratitude to my friend, Dr. Fran Morris, who started me on the path to obtaining degrees in higher education and helped me to acquire the skills to become an innovative instructor. I also wish to thank Dr. Vivian Blevins for helping to prepare me to become a college administrator by sharing her leadership and organizational skills.

I could not have asked for better role models, each inspirational, supportive, and patient. I could not be prouder of my academic roots, which sprang from their guidance and direction, and hope that I can in turn pass on the values and the dreams that they have given to me.

I wish also to express my gratitude to my advisor, Dr. James. E. Davis. He patiently provided the vision, encouragement and advice necessary for me to proceed through the doctoral program and complete this dissertation. He has been a strong and supportive adviser to me throughout my graduate school career. Special thanks also go to my committee. In addition to Dr. Davis, they were: Dr. William Marty Wiseman, Dr. William B. Ayers, Dr. Wayne Stonecypher, Dr. Frankie Williams, and Dr. Richard Blackburn. Their guidance has served me well, and I owe them my heartfelt appreciation.

To my colleagues for sharing their enthusiasm for and assistance with my work on the dissertation, I offer my thanks. I would not have contemplated this road if not for them. I would also like to thank my examiners, who provided encouraging and constructive feedback. It is no easy task to review a dissertation, and I am grateful for their thoughtful and detailed comments.

A special thanks to my dear friend Pat Baker who has not only been my sounding board but also a consistent source of encouragement; and one willing to throw me a life raft when she knew I needed one. Despite personal and health obstacles, she has found time not only to mentor me but several others as well.

The Student Support Services staff at Southeast Kentucky Community and Technical College has helped me in innumerable ways, so many that I will not attempt to list them all. I am particular grateful to Shelia Gordon and Deborah Hodge for their help in crunching the research numbers and helping in organizing and formatting this paper. Last but not least from the SSS staff, I would like to say thank you to Dr. Michelle Dykes-Anderson, who shares by passion for education, for helping me to rekindle my dreams.

A non-SSS colleague, Dr. David Clutts provided valuable assistance, feedback, and advice. He stepped up when I was desperate for a research professional to look over my work. I could not have completed this work without his assistance,

Completion of this dissertation has, indeed, been a long journey. I learned early on that life does not stand still, nor does it wait on you to finish degree requirements. Things happen, and you simply have to learn to fit your work load as a student in among them.

Many have questioned whether I would finish my dissertation, or, as several of my friends referred to it—that paper—and I must confess there were times when I questioned it, too. However, I have endured, despite dealing with personal crisis and medical challenges.

But my mom always taught me that “I am a conqueror.” In the words of Maya Angelou, “My mission in life is not merely to survive, but to thrive; and to do so with some passion, some compassion, some humor, and some style.”

I am grateful to God for not only allowing me to complete and submit the dissertation, and, hopefully—at some point in the future—to share it with others. I am an educator for life, and I will continue to move forward in faith and not in fear.

## TABLE OF CONTENTS

DEDICATION .....	ii
ACKNOWLEDGEMENTS .....	iii
LIST OF TABLES .....	ix
CHAPTER	
I. INTRODUCTION .....	1
Statement of Problem .....	5
Academic, Social and Other Problems Faced by SSS-Eligible Students .....	9
Significance of the Topic .....	11
Purpose of the Study .....	13
Research Questions .....	14
Overview of the Study .....	17
II. REVIEW OF LITERATURE .....	19
Student Retention .....	20
Retention Models .....	21
Academic Variables .....	25
Integration Variables .....	26
Environmental Variables .....	26
Psychological Variables .....	26
Nontraditional Students and Retention .....	27
The Retention of Nontraditional Students .....	31
First-Generation Students .....	32
Student Support Services and Retention .....	34
Summary and Presentation of Study Hypotheses .....	35
Hypothesis .....	37
Definitions .....	38
III. METHODOLOGY .....	43
Research Design .....	45
Data Collection .....	47
Setting .....	48
Sampling Procedures .....	49

Instrumentation.....	49
Data Analysis.....	49
Assumptions.....	50
Limitations.....	50
IV. FINDINGS OF THE STUDY.....	51
Method.....	52
Comparison of SSS and Non-SSS Descriptives.....	52
Hypothesis One: Semester Hours Completed (Current Semester).....	54
Hypothesis Two: Number of Cumulative Credit Hours Completed.....	55
Hypothesis Three: SSS and Final GPA.....	56
Research Question One: ACT and SSS.....	58
V. SUMMARY, RECOMMENDATIONS, AND CONCLUSION.....	61
Introduction.....	61
Summary of Findings.....	62
Hypothesis one: Semester Hours.....	62
Hypothesis two: Credit Hours.....	63
Hypothesis three: GPA.....	63
Hypothesis four: Graduation.....	63
Hypothesis five: Non-graduation.....	63
Research question one: ACT and SSS.....	64
Research question one: ACT and nonSSS.....	64
Discussion of Findings and Implications Related to the Literature.....	64
Hypothesis one: Semester Hours.....	64
Hypothesis two: Credit Hours.....	65
Hypothesis three: GPA.....	65
Hypothesis four: Graduation.....	65
Hypothesis five: Non-graduation.....	66
Research question one: ACT and SSS.....	66
Research question two: ACT and non-SSS.....	67
Study Limitations and Recommendations for Future Research.....	67
Sample.....	67
Instruments, Reliability, Validity.....	68
Analysis.....	69
Implications.....	69
Hypothesis One: Semester hours.....	69
Hypothesis Two:.....	70
Hypothesis Three: GPA.....	70
Hypotheses Four and Five: Graduation and non-graduation.....	71
Research Questions One and Two: ACT and SSS/non-SSS.....	71
Recommendations for Future Research and Practice.....	72
Recommendation One.....	72
Recommendation Two.....	72

Recommendation Three.....	72
Recommendation Four. ....	72
Recommendation Five.....	73
Recommendation Six.....	73
Recommendation Seven. ....	73
Conclusion.....	73
REFERENCES .....	76
APPENDIX	
A. IRB APPROVAL LETTER.....	87
B. LETTER OF PERMISSION AND APPROVAL TO SKCTC PRESIDENT .....	89

## LIST OF TABLES

1	Descriptive Statistics for SSS Group .....	53
2	Descriptive Statistics for Non-SSS Group .....	54
3	SSS and Semester Hours Completed .....	55
4	SSS and Cumulative Credit Hours.....	55
5	SSS and Final GPA.....	56
6	SSS and Graduation .....	57
7	SSS and Non-Graduation .....	57
8	ACT and SSS .....	58
9	ACT and Non-SSS.....	59
10	Correlations between Variables in the Regression Model .....	60

## CHAPTER I

### INTRODUCTION

Community colleges enroll nearly half the undergraduates in the United States and play a significant role in the academic, social, political, and economic future of our nation. They have been long committed to and have made significant gains in providing access; however, access alone does not translate to success. These 2-year institutions have been pressed in recent decades—as has all of higher education—to be more accountable, demonstrating the benefits they offer and at what cost. A common measure of accountability is student retention (Roman, 2007). Student retention has been a major issue within higher education for the past 50 years. Interest in higher education began to rise after the Higher Education Act of 1965 became law. In 1999–2000, 42% of all undergraduates were enrolled at public 2-year institutions, commonly known as community colleges (Horn, Peter, & Rooney 2002). The lower fees and open-access policies at community colleges broadened access to postsecondary education for students facing barriers to entry, such as poor academic performance in high school, limited English-language skills or other basic skill deficiencies, or financial hardship (Grubb, 1999). Community colleges also serve students seeking additional job skills, technical certification, and in occupational areas that require a baccalaureate degree. However, while access to community colleges is easily attained, research has shown that a

significant number of students who enter these institutions do not complete a formal credential (Berkner, Horn, Clune, & Carroll, 2000).

With student numbers rising rapidly, institutions have come to understand that just getting students to enroll is not enough. Institutions needed to keep them enrolled. This issue is faced today by community colleges as well as some 4-year schools because they serve a diverse pool of students who, unlike many who came before them, often possess characteristics that make it difficult to predict how they will perform academically. One of the defining characteristics is that these students are from lower socioeconomic backgrounds and are the first in their families to enroll in higher education (Hoachlander, Sikora, & Horn, 2003). Findings confirm that first-generation college students are at high risk of leaving an institution and less likely to complete their college degrees in a timely manner than their counterparts. These students often entered college with lower high school grade point averages (GPAs) and ranked low among graduates, both of which are strong indicators that they would struggle to succeed in college.

Undergraduate retention and graduation—why some undergraduates stay enrolled in an institution to complete a degree while others transfer, stop out, or drop out—is one of the most well-studied areas of higher education, and it is a major concern for community colleges since the doors of these institutions are open to anyone with a high school diploma or an equivalent degree. Students enroll at community colleges for a variety of reasons. Some are seeking terminal degree, some want to transfer to a 4-year college, and others want only to take a course or two to meet an immediate goal. Some students are recent high school graduates, some are nontraditional adults, and others have

GEDs. Because of the diversity of the population, academic advisors must be prepared to deal with a myriad of issues that may be new to them (Peterman, 2000). However, the open-door policy of admissions is one of the cornerstone on which community colleges have been built; they are dedicated to providing access and education to the masses, whether they are academically prepared or not (Vaughan, 2000). While this policy allows students with diverse educational backgrounds to gain entrance into the community college, it by no means guarantees that they will be successful.

Many students who enter community colleges, some of them graduating near the top of their high school class, are not prepared for collegiate life. To be eligible to enroll, most community colleges require only that the student has a high school diploma or its equivalent. Entry-level examinations which measure a student's readiness and indicate if developmental courses are needed are often required, however. In Kentucky, students that have an ACT score below 18 in mathematics, reading and/or English are placed in developmental classes to strengthen their basic skills. Other factors drawing students to community colleges include geographic accessibility, strong counseling components, and special services. It is precisely because the open-door policies often come with problems of low academic ability, inadequate preparation, and high levels of attrition that student retention is one of the most important issues facing higher education today, with one-third of college students dropping out of school each year. It is not only a problem at 2-year schools but at 4-year institutions as well; interestingly a majority of the studies that have examined and focused on student retention have looked at senior institutions (Li & Killian, 1999; Murtaugh, Burns, & Schuster, 1999) despite the fact that these schools are more likely to attract and admit traditional students (Borglum & Kubala, 2000).

There have been several researchers, however, who have examined the struggles of community colleges with the issue of student retention and have dealt not only with students' inadequate preparation but with other issues as well, issues like inadequate financial resources and job demands. The community colleges often attract individuals who are older, parents, labor force employees (often poorly paid), first-generation hopefuls, and attend college on a part-time basis (Bean, 1983). In fact, almost 50% or higher of the student populations in rural community colleges are comprised of nontraditional students, many of whom are first-generation, low-income students and less academically prepared; and the research reveals that significant differences exist between these students and those that are classified as traditional. (Bean, 1983). Traditional students are more likely to attend a residential college full-time, enrolling immediately after high school graduation, are aged 18-24, and, unlike non-traditional students, have a primary focus on school (Bean & Metzner, 1985).

Southeast Kentucky Community and Technical College (SKCTC), formerly known as Southeast Community College, was opened in 1960 in the coal mining community of Cumberland in Eastern Kentucky to provide access to higher education for the citizens of Harlan, Bell and Letcher counties in Kentucky. The college also attracted students from counties in Tennessee and Virginia. What began as a one-building campus has expanded now to five full-service campuses that operate throughout the region. Initially, SKCTC attracted students who would now be classified as traditional; they came primarily to complete two years of a pre-baccalaureate program and transfer to a 4-year institution. Over time, as the college grew and its program base was expanded, non-traditional students began to flock to its campuses. This happened in large part

because the closest public institution was three hours away, and many students found closer private colleges to be too expensive. The college is located in the heart of the Appalachian region, which is characterized by high poverty levels and low educational attainment. Many of the non-traditional enrollees who attend the college fit the socioeconomic and demographic profile of “high risk” students, minorities, females, low-income, and disabled individuals.

### **Statement of Problem**

As retention becomes more of a key issue for community colleges, it is important that these institutions create an environment that is nurturing, friendly and easy to navigate if they are to retain a greater percentage of their students, according to the Survey of Entering Student Engagement (SENSE). As the situation now exists, while the community colleges provide the benefits of a postsecondary education without the expensive collegiate price tag, many of the students they enroll do not finish. Indeed, these colleges typically lose about half of their students prior to the students’ second year (Nealy, 2008). The retention and attrition rates of college students have been a historical concern of all institutions of higher learning (Brawer, 1996), but the problem is especially acute at the 2-year college level. It was precisely because SKCTC was confronted with difficulty in retaining many of its students, especially those who were academically disadvantaged, that the institution applied for and received federal funding to launch a Student Special Support Program (SSS) in 1972.

Funded through the U.S. Department of Education, Student Support Services programs are designed to:

1. Increase college retention and graduation rates for eligible college students;
2. Increase the transfer rates of eligible students from 2-year to 4-year institutions; and
3. Foster an institutional climate supportive of the success of low-income and first generation college students and individual with disabilities. (Officer of Inspector General, 1985).

The college may have been given special consideration for an SSS program because of its sponsorship of a companion program, Upward Bound. This program was designed to serve high school students who were judged to have the ability to attend college but, in all likelihood, would never have enrolled without educational assistance. Upward Bound has operated continuously at SKCTC since 1966.

SSS, which was originally known as Special Services for Disadvantaged Students, was first authorized by the Higher Education Amendments in 1968. From the outset, its goals have been to increase persistence and graduation rates and to facilitate transition through the educational pipeline by encouraging academic and social integration of participants. Several special services are provided by the program, including: (1) professional and peer tutoring, (2) academic, financial, career, and personal counseling, (3) basic skills instruction, (4) mentoring and advising, (5) transfer advising (assisting with college applications for admission, housing and financial aid college visits), (6) services for students with limited English proficiency, and (7) grant aid (financial aid assistance to those who are receiving Federal Pell) (Student Support Services Program: Legislation, Regulations, and Guidance, 2011).

Unfortunately, few studies have been undertaken in the United States to examine how this program has affected the performance and retention rates of nontraditional, first-generation, low-income students.

As indicated above, SKCTC is located in one of the nation's most impoverished areas deep in the heart of central Appalachia. The poverty rates for the counties served by SKCTC are significantly higher than state (17.3%) and national (13.2%) levels. The rates for the counties served by the college are: Bell (31.3%), Harlan (33.9%), and Letcher (29.4%) (U.S. Census Bureau, 2008). The high poverty rate results from a number of factors but most prevalent are geographic isolation, loss of jobs in the coal industry, and low educational attainment.

The college is fully accredited by the Southern Association of Colleges and Schools and holds special accreditation for its nursing, radiography, respiratory care, surgical technician, and physical therapy assistant programs. As the only public, open door college in its service region, SKCTC has adopted a mission statement (SKCTC, 2009) that focuses on its location and the needs of the students it serves and provides:

1. Associate in Arts and Associate of Science degree programs and courses are designed to prepare individuals to succeed in baccalaureate programs at senior college and universities;
2. Associate in Applied Science degree programs, certificate programs, diploma programs, and courses are designed to prepare individuals to succeed in today's technological workforce;
3. Continuing education, training activities and services are designed to expand life skills, increase the knowledge of citizens, strengthen the existing workforce, and enhance community and business development;

4. Academic support and developmental education courses and experiences are designed to prepare individuals for success in transfer, technical, and continuing education programs and courses; and,
5. Resources are designed to promote the preservation of the Appalachian culture by stimulating artistic expression, serving as a depository for the region's history and cultural traditions, providing a forum for the arts through cross-cultural experiences, and promoting the arts in education.

SKCTC has also adopted a Statement of Values (SKCTC, 2002) to provide guidance to the institution and to the community at large as to the important role it plays in the region. The statement is as follows:

1. Strives to be a proactive and responsive partner with its communities.
2. Continuously examines its environment to understand and anticipate local, regional, and state needs and to respond with appropriate programs and services.
3. Endeavors to be an active leader in its service area, working with other community organizations and educational programs to empower its constituencies to participate in social and economic change.
4. Strives for excellence in teaching and learning, providing a diverse student population with an outstanding, student-centered education to nurture a capacity and excitement for lifelong learning.
5. Works to establish strong partnerships with public schools, industry, and transfer institutions to ensure that all students come prepared to succeed and depart with strong options for future growth and development.
6. Overcomes barriers of distance, fear, poverty, and other constraints to education through creative use of resources.

SKCTC has become the college of choice for large numbers of economically and academically disadvantaged students. Helping these students—the majority (58%) of whom are first generation college hopefuls—to generate the skills and motivation necessary for college success has always been an important goal of SKCTC. The fact that large numbers of the college’s students are eligible for Student Support Services (SSS) is not surprising when one considers that the area served has one of the lowest levels of educational attainment in the nation with an average of 42 percent of the population having less than a high school diploma. Information taken from institutional and program databases reveals that over 80 percent of the students enrolled at the college meet the eligibility requirements to participate in a Student Support Services program. SKCTC has a large pool of eligible students, with the exception of individuals with disabilities; however, it should be noted that these students require more time and commitment than other students the program serves. The college attracts large numbers of first generation enrollees, but since many of these students' parents are poorly educated, they are also economically disadvantaged. Lacking in self-esteem, poorly prepared academically, and unable to find and afford the help they need, these are the students who are clearly at risk without the intervention of Student Support Services.

### **Academic, Social and Other Problems Faced by SSS-Eligible Students**

Immediately upon entering SKCTC, many students are confronted with academic problems stemming from their deficiencies in reading, writing, and mathematics. In admissions documents, SSS-eligible students indicated that they needed help in the following areas: math skills (76%); reading skills (57%); writing skills (68%); study skills (53%); test taking skills (48%); identifying a major (46%); selecting a career

(52%); and transferring to a four-year college (51%). Thus, a large percentage of students recognize that they are deficient in the basic academic skills needed to be successful on the college level as well as in other important informational areas.

SKCTC administers the Compass test to all students with an ACT score below 18 in mathematics, English, and reading. Based on the results of the test, academic counselors are able to provide recommendations for placement into courses. Students with academic deficiencies are placed in developmental courses. SKCTC's mandatory placement policy creates a huge increase in the number of students enrolled in developmental classes, thereby further increasing the need for SSS. About 80 percent of first-time students are enrolled in at least one developmental education course with more than 75 percent exhibiting a deficiency in mathematics. According to the Kentucky Council on Postsecondary Education, 60 to 80 percent of graduating high school students in the SKCTC service area are underprepared in one or more subjects.

In addition to attracting recent high school graduates, SKCTC is also the college of choice for a great many individuals who are enrolled in the Kentucky Adult Education program. Additionally, SKCTC attracts a large number of non-traditional students with nearly half of them (48%) 25 years old or older. The problems faced by these students – the majority of whom are program eligible – are often as severe and long lasting as those faced by recent high school graduates. Not only have many of non-traditional students been out of school for five or more years, but they have families to support, often requiring them to hold full-time jobs in addition to their being full-time students. The retention rate for the SSS-eligible students is lower than that for the college-wide population, and these students graduate at a lower rate than the college's student body as

a whole.

While SKCTC is committed to serving the needs of this special student population, it has neither the resources nor the personnel to provide the wide array of services that are needed without the assistance of the SSS program, first funded at the institution in 1972.

### **Significance of the Topic**

Much of what we know about student persistence and departure comes from the research findings of Vincent Tinto. In 1975, Tinto developed his student departure theory based on sociologist Emile Durkheim's suicide theory which examined the relationship between lack of social integration and the increased likelihood of suicide (Henslin, 1997). Similarly, Tinto (1975) suggested that social integration is a key to retention, arguing that there is careful balance between the student's background, the institution's level of commitment, the student's own educational commitment, and academic and social integration. According to Tinto (1975) students who find a good match between the institutional environment and their own initial commitment to the institution are more likely to be retained. He also found that students who are able to take an active role in their collegiate experience have a better chance at academic and social integration (Tinto, 1987). Students who are unable to make this shift are more likely to drop out or transfer to another institution, he believed. Tinto (1982, 1984) also found that institutional policies should offer an encouraging an inviting environment to aid students in acclimating themselves. What works at one institution may not work at another, so Tinto (1982) encourages each institution to create specific longitudinal retention programs that involve a variety of faculty, administrators and other key players who interact with

students. Most recently, Tinto makes a plea for institutions assume responsibility through specific actions for their part in student retention. Tinto's (1975) theory has been criticized by others because it was developed using traditional students (18-22 years of age). Tinto (1993) himself even criticizes his own work saying that there are several factors his model does not take into account that can affect student departure, such as financial responsibility. Additionally, Kraemer, Kazdin, Offord, Kessler, Jensen, & Kupfer, D. J. (1997) argues that Tinto's theory does not take into account the overall climate of the institution and its effect on the student departure. Other theories to consider are Bean's (1980) student attrition model and Astin's (1999) theory of involvement.

Bean (1980) had findings similar to those of Tinto (1975) and authored his own student attrition model. His theory suggested that a student's incoming beliefs would affect his or her attitude toward the institution. The interactions between the student and the various components of the institution could also affect their level of persistence, Bean believed. Like Bean (1980), Astin's (1999) Theory of Involvement clearly shows that involvement can be the key to retention. He found that the more students are involved on campus, the more likely they are to be retained; and, moreover, the amount of energy students put into the academic life and social life will be directly aligned with their ability to succeed. He also argued that there are varying levels of involvement that will differ from student to student. Since the 1960s, Astin has built large sets of data clearly showing that involvement is the key to retention. No matter what theory or model one chooses to use, literature consistently states that academic and social involvement matter. Astin (1999) makes the point that involvement is not the sole responsibility of the student, arguing with others that the institution must provide a wide variety of

opportunities for students to network and exchange ideas (Pascarella & Terenzini, 1991). The more involved students become in their studies, with their peers, and in their relationships with faculty and staff on campus, the more likely they are to persist (Astin, 1984; Pascarella, 1980).

Interestingly, the literature also shows that while involvement is always important, it matters most during the first year of college. The trauma from transitioning from a secure high school environment into a less comfortable and sometimes distant college environment can highly affect student attrition, especially during the first ten weeks of school when a new way of life is not fully cemented (Tinto, 1982). Overall, professionals in higher education have a sense of the retention methods that seem to work, but they are not always able to determine which methods may work best at certain institutions but not at others. A formula detailing how to start a successful retention program for each different type of institution has yet to exist. Studying retention in a longitudinal manner while also studying the behaviors that go along with student departure are key to our insights into retention as a whole (Tinto, 1993).

### **Purpose of the Study**

The purpose of this study is to explore the impact of the SSS program on the retention of students at SKCTC. The SSS participants include a diverse population of students, including women, those from minority groups, low-income students, first generation students, and students with disabilities.

Moreover, the study will look at and compare the performance of both SSS students and non-SSS students who entered the college during 2003-2007. For program students, the data will be obtained from the SSS Annual Performance Reports, with

students randomly selected using their program identification number. Non-SSS students will be randomly selected from the college's Academic Support Center database. Since both SSS and non-SSS students use the Academic Support Center, care will be taken to ensure that both groups are carefully differentiated.

### **Research Questions**

There are a series of questions that will guide the research investigation being addressed in this study:

1. Is there a significant relationship between SSS participation and number of semester hours completed in the current semester?
2. Is there a significant relationship between SSS participation and number of cumulative credit hour?
3. Is there a significant relationship between SSS participation and final grade point average?
4. Is there a significant relationship between SSS participation and graduation?
5. Is there a significant relationship between SSS participation and graduation (graduation was divided into graduation and non-graduation dummy variables for purposes of SPSS)?

Student retention has been identified for decades as an important measure of institutional effectiveness (Wild & Ebbers, 2002), partly because retention and the student enrollments they represent can be translated into revenue, whether from FTE reimbursements or tuition and fees. Institutions are increasingly held accountable for retention rates by state governments, a number of which have accountability measures

that associate funding with retention rates, as well as by policy makers, business leaders, consumer advocates, parents, and students. Despite increasing demands for accountability, relatively little research has been conducted on community college retention. Most research on student retention has consisted of single institution studies that pertain to residential baccalaureate institutions (Pascarella & Terenzini, 1998) that do not lend themselves to generalizability (Bailey & Alfonso, 2005; Pascarella & Terenzini, 1991). Models of student retention, even those used in community colleges, are largely informed by research focused on four-year institutions and the typical traditional aged white and affluent demographic (Braxton, Hirschy, & McClendon, 2003; Pascarella & Terenzini, 2005; Voorhees, 1987). Community colleges serve a different demographic and have broader missions than most four-year institutions, yet are often compared to four-year institutions and are noted for poorer retention rates. (Bailey, Jenkins & Leinbach, 2005; Tinto, 1987). Despite these challenges, community colleges are called to rise to the occasion since so much is at stake.

A promising construct that has emerged over the past several decades is that of student involvement or engagement. Despite the lack of a substantial amount of research that provides clear direction on improving student retention in community colleges, there is a "broad body of research and theoretical perspectives indicating that positive educational outcomes are associated with student engagement" (Marti, 2006, p. 4). Pace (1984) conducted studies on the quality of effort and time on task invested by students. Astin (1984) posed a theory of student development, which associated the proportion of student learning to both the quality and quantity of student involvement. According to Astin, "student involvement refers to the amount of physical and psychological energy

that the student devotes to the academic experience" (Astin, 1984, p. 297). Effective educational practices are those that elicit investment of sufficient student energy (Astin, 1984). Tinto (1987) emphasized the importance of academic and social integration to student learning and persistence. He later described integration as student involvement (Tinto, 1993). Chickering and Gamson (1987) developed what has been termed by Kuh (2003) as engagement indicators in their seminal work, the *Seven Principles for Good Practice in Undergraduate Education*. The American College Personnel Association (ACPA) and Student Affairs Administrators in Higher Education (SAAHE) later developed the Principles of Good Practice in Student Affairs which paralleled the Seven Principles of Good Practice in Undergraduate Education and stressed the importance of student commitment and student involvement as well as institutional commitment and institutional support. These documents characterized the learning college movement and with it the emerging importance of institutional focus on student learning and the collaboration required between Academic Affairs and Student Affairs.

Building on the volume of research conducted in the four-year sector of higher education, the National Survey of Student Engagement (NSSE) was developed and field tested in 1998 (Kuh, 2001) to assess and benchmark student activities that measure student engagement (Kuh, 2003). An instrument appropriate for use by community colleges, the Community College Survey of Student Engagement's Community College Student Report, soon followed.

The Community College Survey of Student Engagement (CCSSE) was launched in 2001 as a project of the community college leadership program at The University of Texas at Austin. Grants from The Pew Charitable Trusts, the Lumina Foundation for

Education, the MetLife Foundation, and Houston Endowment supported the effort. The purpose was to raise public awareness about the work of community colleges, stimulate discussion and dialogue about how quality is defined and measured, and provide an appropriate assessment tool for their work. Based on extensive research that pertains to student learning and persistence, the Community College Survey of Student Engagement (CCSSE) has defined five benchmarks of educational practice (McClenney, 2006). The benchmarks are: active and collaborative learning, student-faculty interaction, student effort, academic challenge and support for learners. By improving and increasing practices assessed by each of the benchmarks, institutions stand to improve student learning and retention (McClenney, 2006; Marti, 2004). Astin (1975) and Tinto's (1975) theories on involvement are very similar, but make it clear that social and academic integration must occur for an end result of success defined by graduation. Neither theory, however, gives little information regarding the level of effort a student must put toward involvement and integration in his/her institution. Additionally, there is little information on the strength or quantity of resources the institution must undertake to be able to successfully put forth a model which will result in student success.

### **Overview of the Study**

This dissertation is organized into five chapters.

Chapter I provides a brief introduction to the study, dealing with the background of the problem and purpose of the study.

Chapter II provides a general review of the literature on student retention. The research studies address the important elements associated with community college students and retention models. The purpose of the SSS program is delineated; and the

chapter ends with a clear articulation of the aspects of the study of retention of students at SKCTC SSS program.

Chapter III outlines the methodology and discusses the research design. It deals with specific aspects of the research design of the study, including criteria involved in the selection of participants for this proposal. It also includes a description of the population being studied, the instrument to be used, procedures to be followed, and data analysis that will be employed.

Chapter IV presents the results generated from data with special attention given to analyses that directly tests the study hypotheses.

Chapter V provides a summary of the previous chapters. This section highlights the results of the study, presents recommendations and discusses the implications of the study for the SSS program at SKCTC and more generally for similar programs in places at similar institutions.

## CHAPTER II

### REVIEW OF LITERATURE

The review of the literature examines areas related to student retention at 2-year institutions in higher education. Retention rates are of special concern to community colleges because many of their students face challenges significantly different from those of their counterparts at four-year institutions. Even though community colleges have been in existence since 1901, these institutions are a significant part of our country's educational landscape. The Truman Commission, appointed by President Harry Truman in 1946, gave rise to the community colleges of today. The Commission's report called for the widespread establishment of affordable public colleges that would serve community needs and offer comprehensive educational programs. Since then, community colleges have grown and now serve as a gateway to opportunity for millions of students. Because of their open-admissions policies, convenient locations and course schedules, close relationships with local business and industry, and lower cost relative to other institutions, community colleges are accessible to millions of students. (Cooper, 2010). Their open-door policy makes it probable that community colleges are more likely than four-year institutions to attract nontraditional and at-risk students. These students' attrition levels are higher than those of the traditional students who attend college (Stromei, 2000). Cross (1980) defines the nontraditional student as an adult who returns to school full- or part-time while maintaining responsibilities, such as

employment, family, and other responsibilities of adult life. These students also may be referred to as adult students, re-entry students, returning students, and adult learners.

Chapter I established that student retention in higher education was a problem. In order to help to clarify the problem along with the lessons that have been learned from previous research, a more in-depth discussion of the contemporary literature on student retention and related issues in higher education is provided in the remainder of this chapter.

### **Student Retention**

To deal with student retention, colleges have developed intervention programs and services that are designed to help keep vulnerable students enrolled. The retention of students remains a top priority of colleges and universities; it is also a concern for parents of students who are attending college and the students themselves (Seidman, 2005). There are two extremes of student retention. Normal progression, typical of a stayer, or retained student, occurs when a student enrolls each semester until graduation, studies full-time, and graduates in about two to four years, depending on the type of institution in which the student is enrolled. A dropout, or leaver, is a student who enters college but leaves before graduating and never returns to that or any other school. Between these two extremes are transfers, students who begin studies at one institution and then transfer to another. From the student's perspective, transferring is normal progress. From the perspective of the institution where the student first enrolled—particularly 4-year colleges—the student has dropped out. While it is easy to identify a stayer, a student who has left college could return at any time, students who re-enroll after quitting school are called stop outs. Students often quit school due to a financial shortfall or a family crisis and return a year or so later. Other students might start school,

drop out to work or to raise a family, and return years, or even decades, later. Someone defined as a dropout could become redefined as a stop out at any time. Other students become slowdowns, going from full-time attendance to taking just a few courses. The previous definitions are from the perspective of a single institution. An important distinction must be made between students who meet their educational goals before graduating but do not receive a degree and students who enrolled intending to graduate but do not do so (Seidman, 2005).

### **Retention Models**

Student retention is a process that occurs over time and theoretical models tend to be longitudinal, complex, and contain several categories of variables that reflect both student and institutional characteristics. If institutions are to survive they must maintain or increase their retention rate. Many theories of retention are based on Durkheim's analysis of the social factor involved in suicide. Durkheim (1961) suggested that suicide was more likely when an individual did not receive enough support from friends, perhaps, in part, because of a different value system. Several researchers have drawn on Durkheim's work to postulate that a lack of support can also result in an increased likelihood of students leaving college prematurely. Since the early 1970's the main theoretical tradition in the study of student retention has been sociological, involving a search for behaviors that distinguish groups of students who continue their studies from students who quit. Several individuals have studied this topic, including: Astin (1972), Baird (1990), Beal and Noel (1980), Bean (1980), Hoyt (1999), Thayer (2000), Tinto (1975), and Wild and Ebbers (2002). Their studies have sought to determine what institutions of higher education can do to increase student success, thereby increasing

retention. Many studies have investigated the relationships between college retention, persistence, and completion of degree and other influential factors, including the students' socio-economic background, and institutional and environmental factors. While most analyses have targeted traditional full-time students, several studies have focused on diverse subgroups of college students, such as adult learners, nontraditional students, and online learners (Ko, 2005).

There are five primary models that most of the student retention/persistence studies are based.

1. Spady's Model (1970)
2. Astin's Theory of Involvement (1984)
3. Tinto's Student Integration Model (1975)
4. Pascarella's Attrition Model (1980)
5. Bean Student Attrition Model (1980)

The first three models have the same basic construct, that the importance of student integration into the social and academic systems of the educational institution is key in determining retention. Spady (1970) developed a conceptual model of retention based on some elements of Durkheim's (1951) theory of suicide. He compared student dropout behavior to suicide and said that similar group value systems and peer support influenced students' non-persistent behavior. He was one of the first to formulate a theoretical model of the college dropout process, but studies using his model are limited. Tinto's (1975) Student Integration Model was built on Spady's (1970) model and concepts. Tinto (1975) said that departing college is a longitudinal decision based on the acceptance, or rejection, of the academic and social systems of the institution. In Tinto's

(1975) model, retention is looked at in terms of a student's core-entry attributes, goals and commitments, academic and social integration. Tinto (1982) clearly states that failure or academically integrate will not necessarily result in a student's choice to leave. However, a certain degree of integration must exist for continued persistence. Tinto (1975) states his model is meant to address certain areas of retention and persistence. He also criticizes his own works stating his model lacks an emphasis on finances; a lack of differentiation between students who transfer and students who completely drop out of higher education; no differentiation between ethnic groups, social backgrounds, and or gender; and does take into account forms of disengagement that occur at community colleges.

By 1993, Tinto expanded his 1975 Student Integration Model to incorporate the importance of the institution's goals and commitments to students in determining student departure (Mason, 1998; Tinto 1975, 1993). This model is the one that is most widely cited in the literature as the basis for attrition and retention studies. Many researchers have used Tinto's model to investigate how to predict which higher education students are not going to persist until graduation.

Yet with the general acceptance of the Tinto theory and the implementation of programs and services over the past 20 years, have we done any better retaining students? According to data gathered by the 1992 ACT Survey (Tinto, 1993) institutional rates of first year attrition (between the first and second year is used as a benchmark since the majority of attrition occurs between these years) for full-time students entering 4-year public institutions in the fall 1990 was 28.3% while at 4-year private institutions the rate was 24.0%. At public 2-year colleges the first year attrition rate for full-time students was

47.9%. Conversely, when one looks at completion rates, again using ACT Survey data (Tinto, 1993), after six years for 4-year colleges and over three years for 2-year colleges (six years and three years are used for 4-year and 2-year colleges respectively since the Department of Education used this as a benchmark to measure institutional effectiveness) it gives us another view of retention and attrition and shows whether there have been any changes over time.

Pascarella (1982) developed a conceptual model based on Tinto's (1975) model that focused on the factors that a university could influence and control to increase faculty and student contact outside the classroom. He proposed and used five institutional integration scales that seem to predict freshman dropouts during their second semesters (Pascarella & Terenzini, 1980). His model has been used to address academic achievement, student/faculty relationship, faculty accessibility, and academic environment (Cabrera, Nora, & Castaneda, 1993).

There are two variables identified by Tinto (1975) related to student persistence: academic and social integration. There is a positive correlation, he suggests, between these two factors, when students are socially and academically integrated in their environment they are more likely to persist in their studies. If students are not academically and socially integrated in the college environment they likely to fail.

Academic Integration includes several factors that will influence or have direct on student's retention. Students goal commitment and the level of education they aspire to attain and how intensely they pursue it, they overcome any barriers that might hinder them. According to Tinto (1985), goal commitment, individual characteristic, such as family background, expectation, and motivation are identified as predictors of

persistence. If students have past educational experiences they are more likely to persist in completing their degree.

In both Tinto (1986), Tinto (1987), social integration is identified by extracurricular activities, interaction with faculty, staff and administrators and as peer group interaction, as measures of this variable. If the relationship is positive student are most likely to persist with their studies and complete requirements for a degree, and if they have little or no contact with faculty, college staff, and are not active participants in college activities the student is most likely to leave college and stop pursuing a degree. These studies concluded that academic integration directly affects students' goal commitment to degree completion, and social integration directly impacts their commitment to the institution with the administration, faculty staff and students.

External factors that influence non-traditional students, according to Bean and Metzner (1985), are: (a) background characteristics; (b) academic factors; (c) environmental aspects; (d) degree of social integration; and (e) psychological outcome factors. Age, gender, and socioeconomic factors are background variables which were found to play a minor role in retention of nontraditional students although these factors influence how they adjust to the academic environment compared to the traditional student. A discussion of these external factors is as follows:

### **Academic Variables**

Bean and Metzner (1985), point to several academic variables that appear to be related to retention, including: (a) students' attitudes and habit of studying, (b) students course load and the size of a class, (c) their college program and their satisfaction with the courses in which they are enrolled, and (d) the quality of education they are receiving.

### **Integration Variables**

Included in social integration variables related to retention are: (a) family and student satisfaction, (b) social integration and relationship with groups, (c) interactions with faculty outside of the classroom, (d) attendance at cultural events, and (e) involvement in extracurricular events (Bean & Metzner, 1985). They also found that peers are more important agents of socialization for students than are informal faculty contacts.

### **Environmental Variables**

Environmental variables that can be related to retention are employment status, family and college relationship, degree aspirations, termination and completion plans, and commitment to college (Bean & Metzner, 1985).

### **Psychological Variables**

The psychological aspects that can impact retention of nontraditional students, (Bean & Metzner, 1985) include future plans, stress, expectations and realities, self-image; and self-esteem.

The academic, faculty, and peer involvement are factors identified in Astin's (1975, 1977) Student Involvement Model. He states that the peer involvement is the most persuasive factor in determining whether students remain in school. He describes interaction with peers on a regular basis, growing out of such things as living on campus and participating in extra-curricular activities as being very important (Astin, 1984). Since the majority of community college students are commuters and often have families

and jobs, they are less likely be involved with their peers, however, than are students at senior institutions.

### **Nontraditional Students and Retention**

As previously noted, community colleges enroll nearly half the undergraduates in the United States. These institutions play a significant role in the academic, social, political, and economic future of the nation. As historically open admission institutions, with a primary focus on providing access to higher education, they have been pressed in recent decade—as all higher education—to be more accountable, demonstrating the benefits they offer and at what cost; and as one important measure of accountability is student retention (Roman, 2007).

Community college students are often described as non-traditional as compared to traditional college students who attend a residential college full-time immediately after high school graduation, are aged 18-24 and have a primary focus on school (Bean & Metzner, 1985). Non-traditional students, most likely enrolled at a community college, have multiple commitments, are multi-tasking, often struggle to balance work, family and school, and are commuters (Matus-Grossman, Gooden, 2002; Tinto, 1993; Voorhees, 1987).

Despite increasing demands for accountability, relatively little research has been conducted on community college retention. Most research on student retention has consisted of single institution studies that pertain to residential baccalaureate institutions Henningsen, Henningsen, Cruz, & Morrill. (2003); Pascarella & Terenzini (1998) that do not lend themselves to generalizability (Bailey & Alfonso, 2005; Pascarella & Terenzini, 1991). The majority of community colleges students are nontraditional and the

institutions they attend have broader missions than most four-year institutions. That being the case, it would not seem that comparing retention rates at these colleges with those at four-year colleges would not be something that researchers commonly do; however, that is not the case and comparisons often occur. It is not surprising, therefore, that community college when compared to four-year institutions and are noted for poorer retention rates (Bailey, Jenkins, & Leinbach (2005); Tinto, 1987).

The nontraditional characteristics are often correlated with those of high-risk students. The term high risk is a theoretical concept that has different connotations being associated with negative risk springing from educational experience (Jones & Watson 1990). Jones describes high-risk students as often being minorities, the academically disadvantaged, the disabled, and those of low socioeconomic status. The term nontraditional students, on the other hand, is merely a reference to a changing profile of students that emerged during the late 1960's and early 1970's as a result of demographic and sociopolitical change. Nontraditional students, like those described as high-risk, typically include older students, minorities, and individuals of low socioeconomic status. These students are also called adult students and re-entry students (Benshoff, 1991).

The term nontraditional student is, thus, not a precise one, although age and part-time status (which often go together) are common defining characteristics (Bean & Metzner, 1985). A National Center for Education Statistics study examining the relationship between nontraditional status and persistence in postsecondary education identified nontraditional students using information on their enrollment patterns, financial dependency status, family situation, and high school graduation status (Horn & Carroll,

1996). Specifically, in this study, a nontraditional student is one who has any of the following characteristics:

- Delays enrollment (does not enter postsecondary education in the same calendar year that he or she finished high school);
- Attends part time for at least part of the academic year;
- Works full time (35 hours or more per week) while enrolled;
- Is considered financially independent for purposes of determining eligibility for financial aid;
- Has dependents other than a spouse (usually children, but sometimes others);
- Is a single parent (either not married or married but separated and has dependents); or
- Does not have a high school diploma (completed high school with a GED or other high school completion certificate or did not finish high school).

Horn & Carroll (1996) defined nontraditional on a continuum based on the number of these characteristics present. Students are considered to be minimally nontraditional if they have only one nontraditional characteristic, moderately nontraditional if they have two or three, and highly nontraditional if they have four or more. Almost three-quarters of undergraduate students are in some way nontraditional.

While several definitions and descriptions are offered for nontraditional students, there are two characteristics on which the literature appears to concur -- age and part-time status. That is, these students are more likely to be 25 years of age or older and enrolled in college on a part-time basis (Richter-Antion, 1986).

The potential for risk and attrition exist for all college students, but for nontraditional and some subgroups, the probability of risk and attrition is extraordinarily high. The casual variables interact to increase attrition and risk among particular demographic and socioeconomic populations. These variables can include academic factors (low grade point average, academic under preparedness), but could extend beyond the scope of academia. Some scholars (Benshoff & Lewis, 1992; Richter-Antion, 1986) have examined characteristics that separate nontraditional students from traditional ones. Nontraditional students, they found, are more likely than traditional students to be achievement-oriented, highly motivated, and relatively independent, with special needs for flexible schedules and instructions appropriate for their developmental level. Moreover, they prefer more active approaches to learning and value opportunities to integrate academic learning with their life and work experiences relative to traditional students.

Community colleges enroll almost half of undergraduates in the United States. (Dougherty, 2002; McClenney, 2004; Roman, 2007). They attract high proportions of low-income, first-generation college students and students of color, those typically underserved by higher education (Phillippe, & Sullivan, 2005; Townsend, Donaldson, & Wilson, 2005). While community colleges have long been committed to and have made significant gains in providing access, access alone does not always translate to success. Non-traditional students, and community college students in general, often have multiple commitments, are multi-tasking, often struggle to balance work, family and school, and are commuters, in part, because community colleges are largely non-residential (Matus-Grossman & Gooden, 2002; Tinto, 1993; Voorhees, 1987). The increasing diversity of

American undergraduates has been noted in both 4- and 2-year institutions (Pascarella and Terenzini, 1998; Ruppert, 2003), Future enrollments in community colleges are projected to increase both because of demographic changes and because increasing percentages of the population will pursue higher education for the opportunities they offer (Boswell, 2004; Martinez, 2004). Among traditional college students, most of the increase will be of students of color and those from low-income households (Price, 2004). In summary, the research concerning nontraditional students makes it clear that the attributes and needs of this group are considerably different from those of traditional students. That being the case, consideration must be given to how best to design programs to keep them in school. It is to this issue the researcher now turns.

### **The Retention of Nontraditional Students**

Adults are now a powerful segment of the undergraduate population and are dramatically changing the nature of higher education today. They make up about 40 to 45 percent of the students enrolled as undergraduates in higher education (Horn, & Carroll, 1996); Noel, Levitz, & Saluri, 1985).

The growth of community college enrollment is expected to continue outpacing increases in enrollment at public 4-year colleges; therefore, the high attrition rate of nontraditional students is a major concern expressed by some researchers (Hoffman, 2000; Marlow, 1989). In his study of attrition, Hoffman (2000) examined transcripts, college records, and interview sessions with students in an effort to identify the reasons underlying their choice to continue their studies, leave school before graduation, or return to school after leaving it.

The enrollment at community colleges leaped 413% from 1965 to 1999, increasing from about one million to about 5.3 million. During this period the enrollment trend showed a reversal of the gender gap among community college students. In 1970, 60% of all community college students were men. However, women's enrollment has exceeded that of men and has held steady during the 1990s at 57%. During that time, the percentage of part-time students attending community college part-time increased from 49 to 64%. Part-time students at community colleges typically are older than their full-time counterparts. Community colleges have tried to accommodate the needs of older, part-time students who work full-time by offering courses at night and on weekends. (Kasper, 2003).

Community colleges have made education more available to students from varied backgrounds, including immigrants and appeal to students who seek remedial education. Research suggests that support services provide students, especially nontraditional students, with the nurturance necessary for academic achievement. According to Allen (1993), administrators and faculty must support efforts to be sensitive to the needs and differences of learners. The nontraditional students require different types of support and assistance from family, friends, and institutions of higher learning than do traditional students (Benshoff & Lewis, 1992). The nontraditional student will need help in building their self-confidence; require courses or workshops to refresh study skills, time management and other skills for student retention

### **First-Generation Students**

Although going to college may be viewed as a rite of passage for many students, some groups of students often face unique challenges in their pursuit of a college degree.

One group of students the researcher is trying to gain a better understanding of is first-generation students. Conflicting definitions have been used to define the population in the research. For example, Billson & Terry (1982) define first-generation status as having parents with no college or university experience. Other researchers categorize students as first-generation when their parents attended community colleges (London, 1996; Mitchell, 1997). For the purposes of this study, Willett's (1989) definition will be used: neither parent has earned a baccalaureate degree. Many nontraditional students are likely to be the first member of their family to enroll in college and to pursue a degree. These types of students are overrepresented in many community colleges.

Ishitani (2003) investigated the longitudinal effects of being a first-generation student. He found that first-generation students were more likely to depart early than were their counterparts over time. After controlling for factors such as race, gender, high school GPA, and family income, the risk of attrition in the first year among first-generation students was 71% higher than that of students with two college-educated parents. First-generation students often face a variety of obstacles in their pursuit of an associate's and/or bachelor's degree (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Unlike traditional students, they have lower pre-college critical thinking abilities, are more likely to come from low-income families, and to have been encouraged by teachers (not parents) to attend college (York-Anderson & Bowman, 1991).

For years, community colleges have regarded first-generation students as one of their primary clientele (Richardson & Skinner, 1992) and have been concerned with the high attrition rate among this group of students. Studies have shown that students seeking either an associate degree or higher who start at 2-year institution have a lower chance of

achieving their educational goals than students who start at 4-year institution.

Administrators and instructors have discovered that early intervention programs often provide them with the support they need to persist in their studies. These programs often help students overcome socioeconomic, academic, and cultural barriers impeding their progress (Richardson & Skinner, 1992).

As retention becomes more of a key issue for community colleges and in response to the major challenges facing nontraditional and first-generation students, coordinating learning centers and outreach programs help match students to what may best help them. Among these outreach programs is the SSS program.

### **Student Support Services and Retention**

As indicated earlier, there is a positive relationship between academic and social integration and retention according to Tinto (1975). He has found that the more students are academically and socially integrated into the college environment, the more likely they are to remain in college and graduate. According to Bean and Metzner (1985), two of the variables having the most influence on retention are in the academic and environmental realms. For instance, students with poor study habits, poor academic advisement, and high rates of absenteeism, insufficient financial support, and family and job responsibility tend to have high attrition rates. This is an apt description of SSS students.

Cahalan, Chaney, and Chen (1994) conducted a study of the design and operation of the SSS program. The purpose of the study was twofold: (a) to estimate the impact of the SSS program on participants in terms of the grades they receive, the number of credits they earn, and their retention in college; and (b) to collect descriptive information about

how the SSS programs operate and the characteristics of the students who participate. The study included participants and non-participants comparing grades, number of credits earned, and retention rate of participants in the program for three years after they entered college. Their findings revealed that students enrolled in SSS programs persisted at a higher rate than did non-SSS enrollees with similar characteristics.

The research literature reveals that while college access has increased for populations served by SSS programs, the number earning a degree remains below normal, due primarily to high attrition. However, Engle (2007) argues that these programs are needed to provide services for retention of the non-traditional student and are a good investment within the community college environment.

There remains, however, a scarcity of research on student performance in SSS programs; and while this is true nationwide, it is especially evident in Kentucky. To date, despite the fact that SSS programs operate at 6 of the 16 community colleges in the state, not a single research study has been conducted in Kentucky to determine the impact of these programs in retaining non-traditional, low-income, first-generation students. This study is designed to measure the impact of the SSS program on the retention rates of program enrollees at SKCTC.

### **Summary and Presentation of Study Hypotheses**

Much has been made of the need to improve access to higher education for students from low-income backgrounds and those who are part of the first generation in their families to attend college. Many worry that financial problems may force low-income students to drop out or interrupt their education. Persistence is affected by a variety of factors other than income (Choy, 2000). The achievement gap between high-

income and low-income has increased over time. Students from all socio-economic levels need a clear focus, proper study skills and maturity to move from high school and family environment to college. Adults are now a powerful segment of the undergraduate population and are dramatically changing the nature of higher education today (Donaldson & Graham, 1999). The adult student comes to college experience with a rich personal biographies. These personal biographies are influenced by prior experiences in the world, ranging from experience with formal schooling, including those in college organizations or internships from earlier college experiences, to the social and cultural contexts of adult life in which adults participate as workers, family and community members (Donaldson & Graham, 1999). These prior experiences influence the learners' motivation, self-esteem, self-confidence, level of personal responsibility and the way in which they approach their education . However, the retention of nontraditional students requires a change in the perspective of those educators and administrators who, too often, are accustomed to dealing with the traditional age student population.

The most widely used model for addressing retention among nontraditional students is Bean and Metzner's (1985) Attrition Model. Of all the conceptual frameworks presented in this chapter, the Bean and Metzner model appears to be best suited for guiding this research on the retention of nontraditional students. This is because it identifies those variables — background, academic, environmental, social integration, and psychological — that are deemed most likely to affect the students' attrition rate. Additionally, this model could be one of the key models used by SSS programs to implement the policy and services provided to SSS participants particularly those that are nontraditional.

## Hypothesis

This study investigates the impact of SSS programs on the retention of nontraditional, low-income first-generation students enrolled in rural community colleges in Kentucky. Additionally, it identifies predictors that have the greatest influence on the retention rates of these groups of students, compared to a similar pool of students who did not enroll in the SSS program. The Student Retention Survey instrument developed by Bean and Metzner (1985) is used to assess the relative importance of background, academic, social integration, environmental and psychological outcome variables in contributing to the retention rates of SSS program participants, while controlling for their involvement/non-involvement in the SSS program.

Stated specifically, this study will test the following four hypotheses:

1.  $H_0$  stated that there would be no significant relationship between SSS participation and number of semester hours completed.
2.  $H_0$  stated that there would be no significant relationship between SSS participation and number of credit hours completed.
3.  $H_0$  stated that there would be no significant relationship between SSS participation and final grade point average.
4.  $H_0$  stated that there would be no significant relationship between SSS participation and graduation status.

The significance of this study lies in the fact that it is the first study to examine the impact of the SSS program in Kentucky in retaining nontraditional, first-generation students, while controlling of other factors that may influence retention. Results of this study can be used by community college educators and administrators to assess the

impact that the SSS program may be having on the target population. This study can serve as a guide for expanding future studies addressing retention rates of nontraditional, first-generation students, particularly how adjustments and accommodations in the SSS program might further improve the capacity of community colleges to retain these students.

Six community colleges located in the state of Kentucky house SSS programs. Nearly 50% of their full-time enrollment is made up of nontraditional students. It is for these reasons that these colleges were selected to be the target sites for the participants in this study. In the next chapter (Chapter 3), a more in-depth discussion of the research protocol employed in this study is presented.

### **Definitions**

*Attrition* - The reduction of credit hours within a term, withdrawing from any coursework, or the total withdrawal from college.

*Adult students* - Most often age (especially being over the age of 24) has been the defining characteristic for this population. Age acts as a surrogate variable that captures a large, heterogeneous population of adult students who often have family and work responsibilities as well as other life circumstances that can interfere with successful completion of educational objectives.

*Adult learners* - As undergraduate or graduate students that are: lifelong learners who generally are 25 years or older, and/or have additional responsibilities such as family, career, military, or community, and are seeking a degree or other educational offering (credit or non-credit) to enhance their professional and/or personal lives.

*Credential* – Is an outcome of student completing a total withdrawal and/or leaving the institution prior to completing their program of study, earning their credential, or making a successful transfer to another postsecondary institution.

*Community College* – A 2-year undergraduate institution that offers Associate in Art and Associate in Science degree programs and courses designed to prepare individuals to succeed in baccalaureate programs at senior colleges and universities. These institutions offer Applied Science degree programs, certificate programs, diploma programs, and courses designed to prepare individuals to succeed in workforce-related environments.

*Dropouts* - Students who leave and do not come back. This includes students who transfer out and opt out.

*First Generation* - First-generation students can come from families with low incomes or from middle- or higher-income families without a college-going tradition. Some have parents who support their plans for higher education; others are under family pressure to enter the workforce right after high school. Often these students don't know what their options are regarding higher education, and they may have fears about going to college and misconceptions about college and its costs.

*General Equivalency Diploma* – Is an educational program that is designed for adult learners to be able to meet high school graduation equivalency standards and earn their diploma.

*GPA* – The grade point average is the ratio of the number of points gained to the number of credit hours attempted.

*Graduation* – Students who complete a specific number of credit hours—ranging from 60 to 72—in a prescribed curriculum in a community college earn one of three degrees: (1) Associate in Arts (AA), (2) Associate in Science (AS), or (3) Associate in Applied Science (AAS).

*House Bill One (HB1)* - is an act passed in the Commonwealth of Kentucky and signed into law by the Governor in 1997. It resulted in the creation of the Kentucky Community and Technical College System (KCTCS) as a means to provide greater access to citizens who seek postsecondary education and training.

*Integration* – The extent to which a student is “able to share the normative attitudes and values of peers and faculty in the institution and abides by the formal and informal structural requirements for membership in that community” (Pascarella & Terenzini, 1991; Tinto, 1993; York-Anderson, & Bowman, 1991).

*KCTCS* – Kentucky Community and Technical College System is the newest postsecondary education institution in the Commonwealth. KCTCS was created by the Kentucky Postsecondary Education Improvement Act [KPEIA], 1997. KCTCS consists of 16 separately-accredited colleges and over 69 campuses that are spread throughout the state.

*Low-Income* – The term "low-income individual" means an individual whose family's taxable income for the preceding year did not exceed 150% of the poverty level amount.

*Minority* - a group differing, especially in race, religion, or ethnic background, from the majority of a population.

*Non-traditional student* - The National Center for Education Statistics (NCES) has identified seven characteristics that are common to nontraditional students. To be considered a nontraditional undergraduate, you (the student):

- Do not immediately continue your education after you graduate from high school
- Attend college only part time
- Work full time (35 hours or more per week)
- Are financially independent
- Have children or dependents other than your spouse
- Are a single parent
- Have a GED, not a high school diploma

*Persistence* – The process by which a student remains enrolled in coursework from one academic term to the next successive term of enrollment and continues to make satisfactory academic progress toward earning their credential. For example, fall enrollment continues to include the spring enrollment and subsequent fall term.

*Retention* – The process by which a student remains persistent and maintains continuously enrolled into coursework from one academic year to the next and continues to make satisfactory academic progress toward earning their credential.

*Returning students* – Students who have been out for more than one semester must reapply to college. Factors which may be considered when determining eligibility for readmission include, but are not limited to, registration or transcript [holds](#), previous academic achievement, length of absence, space availability in the major in which you were previously enrolled, activities during the period in which you were not enrolled, and prior disciplinary action.

*Re-entry* – This student population has been defined as students who are at least 25 years old who are returning to school or starting school for the first time. This population is one of the fastest growing segments of college students today due to changing economic factors.

*Self-Efficacy* – A student’s perception and belief in his/her ability to change accordingly to survive in an academic environment (Seidman, 2005).

*Stop-out* is the temporary cessation of coursework whereby a student leaves the institution but may intend to re-enroll at a later date and/or who has left but returned to coursework.

*SKCTC* – Southeast Kentucky Community and Technical College was founded as the Southeast Center of the University of Kentucky (UK) in 1960. When the Commonwealth of Kentucky created the University of Kentucky Community College System in the mid-1970s, the college was redesignated as Southeast Community College and made a part of the UK system. In 1997, the college became a member of the Kentucky Community and Technical College System, along with all other UK community colleges and all vocational schools then under the auspices of the state’s workforce cabinet.

*Success* - Graduation from college receiving a diploma or degree.

*Traditional* – Undergraduate student between 18 and 25 years of age who enrolled in college immediately after high school graduation.

## CHAPTER III

### METHODOLOGY

Student retention has long been a traditional problem for higher education and especially so for community colleges. Community colleges attract many nontraditional learners and tend to have high attrition rates (Stromei, 2002). The literature review examined community college retention-related issues, such as the development of intervention/retention programs, the number and complexity of theoretical student retention models, and the increasing research focus on nontraditional students.

Community colleges play an integral role in the national economy due to the numbers of students attending and the centrality of retention as a measure of their accountability (Roman, 2007). Student Support Services has encompassed a number of strategies to assist colleges and universities in student retention.

SSS was one of the three programs (hence the name “TRIO” programs) funded by Title IV of the Higher Education Act of 1965 to provide assistance to colleges and universities as they struggled to provide assistance to disadvantaged students. SKCTC applied for an SSS grant and was funded for an SSS grant in 1969. The program serves 140 students and has been given the name Academic Advantage Program. Students are eligible for the program if they meet one or more of the following criteria:

1. Student's parents do not have a bachelor's degree,
2. Student has low family income,
3. Student has a disability.

SSS offers a wide range of services designed to engage students who are selected

for entry into the program that designed to help them stay in school. Included among these services are the following:

1. Tutorial services,
2. Advising and counseling,
3. Transfer assistance,
4. Visits to four-year college campuses,
5. Financial aid assistance,
6. Scholarship assistance,
7. A variety of workshop and seminars to help with academics,
8. Developmental classes / supplemental instruction,
9. Cultural trips and events.

SSS endeavors to engage students via comprehensive academic and personal support through developmental classes and supplemental instruction, tutoring, the availability of mathematics and writing skills specialists, academic progress monitoring through a mid-term grade review, career and educational planning, major and course selection through degree audits during individual advising sessions, transfer planning, campus visits to 4-year colleges, workshops for academic and personal growth, informative newsletters, social events, and cultural enrichment activities.

The SSS participants are a diverse population that includes women, minority groups, low-income students, first generation students, and students with disabilities. All participants meet the eligibility criteria as outlined previously, but many are also nontraditional students. The term nontraditional student, while not precise, often involves the elements of age and the enrollment status of students. These defining characteristics often go together (Bean & Metzner 1985). As indicated in Chapter II, the National Center for Education Statistics (Horn, 1996) further defined a nontraditional student as one who:

1. Delays enrollment,
2. Attends part time for at least part of the academic year,
3. Works 35 or more hours while enrolled, is financially independent,
4. Has dependents other than a spouse,
5. Is a single parent,
6. Does not have a high school diploma or equivalent credential.

### **Research Design**

This study investigated the effects of a retention-related intervention program (SSS) at a rural Appalachian, 2-year institution, SKCTC. SSS serves two groups shown by the literature review to need extra assistance in order to be retained: first-generation college students (Ishitani, 2003) and non-traditional college students (Hoffman, 2000; Marlow, 1989). The study hypothesized (in null form) that there would be no significant relationship between the persistence, retention and success of SSS students and non-SSS students. Specifically, this was evaluated through investigation of number of semester hours, number of credit hours, final GPA, and graduation between the two groups. The

hypothesis was evaluated through multivariate regression to determine whether any significant relationships existed between variables.

Multivariate regression analysis sought to use historical data to find a linear model that would be significantly predictive of future student success results. This is a common statistical approach and applies to multiple fields. Regression analysis served to identify correlation but not indicate causation. This study was also intended to be a launching point for additional research at the institution and to add to the literature in the field.

The candidate obtained permission from the KCTCS Institutional Review Board (IRB) and the Office of the President of SKCTC. IRB approvals were placed in Appendix A. College personnel were briefed including the President of the College, Vice President for Academic Affairs, and Vice President for Institutional Effectiveness.

The study used a quantitative research approach. Data included participation in SSS, American College Test (ACT) overall score, number of semester hours completed in the research semester, number of cumulative credit hours completed, final GPA, and whether the person graduated from the college.

Variables were coded as follows: *sssprogram*, *actscore*, *nosemesterhrscompleted*, *nocredithourscompleted*, *finalgpa*, and *graduation*. SPSS created dummy variables for the nominal biconditional *SSSPROGRAM* and *GRADUATION* variables. These were *sss\_1* (participation), *sss\_2* (non-participation), *grad\_1* (graduation), and *grad\_2* (non-graduation). Dummy variables were necessary so the nominal variables could be included in the quantitative statistical calculations. Multivariate regression was the quantitative method used since there were multiple dependent variables. Independent

variables were sssprogram and actscore while dependent variables were nosemesterhrscompleted, nocredithourscompleted, finalgpa, and graduation. A separate statistical run was conducted with actscore as independent and sssprogram as dependent, just to investigate possible correlations between those two variables.

Null hypotheses were as follows:

1.  $H_0$  stated that there would be no significant relationship between SSS participation and number of semester hours completed.
2.  $H_0$  stated that there would be no significant relationship between SSS participation and number of credit hours completed.
3.  $H_0$  stated that there would be no significant relationship between SSS participation and final grade point average.
4.  $H_0$  stated that there would be no significant relationship between SSS participation and graduation.

ACT scores was included as an independent variable since all students had these scores for college admission purposes, regardless of SSS participation. The variable allowed ancillary investigation of inclusion of that variable in the model plus whether it had any effect on SSS participation.

### **Data Collection**

SSS program enrollment during spring 2003 was 140 students. One sample was chosen at random from the population of SSS participants. A second equal-sized sample was chosen at random from the population of all non-SSS students enrolled in the particular Kentucky community college during spring 2015. There were 125 students chosen from SSS participants and non-SSS participants, for a total  $N=250$ .

Sampling was done at the researcher's institution of employment, SKCTC. This convenience sampling allowed ease of obtaining data and also the opportunity to put

findings and recommendations before the academic body for further consideration, implementation, or program revision. The advantages of convenience sampling are (1) ease of administration and access, (2) low cost and limited time involved, and (3) expanded access to data. Disadvantages include (1) potential for bias and (2) sample not representing the population. The non-SSS sample should also be more representative of the population due to the randomness of selection.

### **Setting**

The study was conducted at 1 of the 16 KCTCS institutions created by (KPEIA, 1997). The college's annual enrollment is approximately 5,000. Its service area is Bell, Harlan, and Letcher counties. These rural Appalachian counties combine the highest poverty levels with the lowest education attainment levels in high school and college (U.S. Census Bureau, 2008). Many of its enrollees are high risk students, minorities, females, low-income, and disabled individuals. These aspects compound the existing retention challenges for this and other community colleges. Over 80% of the students enrolled at SKCTC meet the eligibility requirements (low-income, first-generation college) to participate in a SSS program.

## **Sampling Procedures**

SSS and non-SSS participant records were randomly selected from institutional databases. SSS participation criteria were as follows:

1. Low income – is the student eligible for financial aid.
2. First generation – Table looks at parental education attainment. A logic table was set up to see if one or both parents had attained a baccalaureate degree. SSS status was obtained from SSS program records. Otherwise, students were classified as non-SSS, whether or not they were eligible for the program. There were 125 of each chosen. Information included demographics, semester hours completed, credit hours completed, final GPA, and graduation status.

## **Instrumentation**

There was no instrumentation used in this study. Participant data were randomly selected from college files. Quantitative statistics were obtained via SPSS using multivariate regression analysis.

## **Data Analysis**

Data were analyzed using SPSS statistics software version 23. Multivariate regression was used to test the null hypotheses. Sssprogram and graduation were broken into two dummy variables each. These were sss\_1 (1=SSS participation), sss\_2 (2=non-SSS participation), grad\_1 (1=graduation), and grad\_2 (2=non-graduation), respectively. SPSS treats the dummy variable with the higher numeric code in each pair as the reference group. Since non-SSS participation and non-graduation serve more logically as reference groups, that coding scheme was used.

The multivariate regression consisted of independent variables sss\_1, sss\_2 and actscore while dependent variables were nosemesterhrscompleted, nocredithourscompleted, finalgpa, and graduation. Analysis also investigated whether significant relationships existed between actscore as an independent variable and sss\_1 and sss\_2 as dependent variables.

### **Assumptions**

An assumption was that each year was correctly documented for entry and graduation so that no other records were included outside of the specified years for this study; and that the information from the students' transcripts was correctly transferred over into PeopleSoft from records being kept at SKCTC campuses. Furthermore, assumptions were made that all information was entered, calculated, and documented into the spreadsheet without any errors.

### **Limitations**

There were some limitations with the proposed study. The first limitation of the study was the sample consisted of only students from SKCTC. The study was specific and beneficial to the college and cannot be generalized to other institutions. The reliability may increase with a larger and more diverse sample size. A study across several KCTCS institutions as well as other colleges in Kentucky may increase the sample size along with adding a diverse population.

## CHAPTER IV

### FINDINGS OF THE STUDY

Statistical analysis was conducted via Statistical Package for the Social Sciences (SPSS) 23 statistical software with some data entry and importation into and out of SPSS done through Microsoft Access and Microsoft Excel. Multiple linear regression was used to investigate whether significant relationships existed between the independent variable(s) and the dependent variable(s). Multiple linear regression was also used in an ancillary investigate of possible relationships between ACT score and SSS participation. Multivariate regression was considered but discarded due to its frequent confusion with multiple linear regression in statistical literature and the resulting obfuscation in application and interpretation. Multiple regression exercised multiple times served the same purpose with much greater clarity for the non-professional statistician.

Independent variables were SSS and non-SSS. Dependent variables were number of semester hours completed, number of credit hours completed, final grade point average, and graduation. Dummy variables had to be created for the biconditional SSS and graduation variables. These were sss\_1 (SSS), sss\_2 (nonSSS), grad\_3 (graduation), and grad\_4 (nongraduation). This allowed the variables to be used in multiple linear regression. Null hypotheses were to be rejected only when specific probability values (namely, the probability values of the standardized beta coefficients) were less than 0.05. This was the test for the  $\alpha = 0.05$  level and 95 percent confidence level.

Multiple linear regression statistics pertinent according to APA format were the unstandardized coefficients of the independent variables (B), the standard error of these coefficients (SE B), the standardized or beta coefficients (b), the significance of the coefficients (denoted by asterisks in the tables), the change in the F statistic and its significance, the R statistic, and the R-square statistic.

The p-value of the F test determined whether the overall model was statistically significant.  $R^2$  gave the proportion of variance in the dependent variable that was accounted for by the independent variables in the model. The unstandardized coefficients (B) for each independent variable indicated the amount of change in the dependent variable one could expect given a one-unit change in that variable if all other model variables were held constant. The B coefficients were measured in units of the variable. The standardized forms (beta) of these coefficients, like z-scores, were measured in standard deviations and thus could be compared to each other to determine relative strength. Outliers were account for in SPSS by checking the menu option residuals, casewise diagnostics, and outliers outside three standard deviations.

## **Method**

There were two sample groups: SSS and non-SSS. The two groups were equal at  $N=125$ . The following sections list descriptive statistics and graphic representations for the two groups followed by results of the multiple linear regression analysis.

### **Comparison of SSS and Non-SSS Descriptives**

Descriptive statistics for the SSS group and non-SSS group are shown in Table 1 and Table 2. Those in the non-SSS group had a slightly lower mean ACT score.

Table 1

*Descriptive Statistics for SSS Group*

<u>Variable</u>	<u>Range</u>	<u>Min.</u>	<u>Max.</u>	<u>Mean</u>	<u>SD</u>	<u>Variance</u>
ACT Scores	18	10	28	18.08	2.858	8.171
Semester Hrs	13	3	16	7.54	2.263	5.122
Credit Hrs	107	42	149	81.54	22.796	519.670
GPA	3	1	4	3.14	.489	.239
Graduation	1	0	1	.784	.4132	.171

Note: N=250. CI = confidence interval.

However, ACT scores precede SSS membership so ACT improvement would not be a result of SSS membership. This study did not take into account any prior variables that could have affected differences in incoming achievement such as ACT scores. The variables that would succeed SSS participation or non-SSS participation were semester hours, credit hours, GPA, and graduation. The SSS group took fewer semester hours than the non-SSS group. The SSS group had less cumulative credit hours than the non-SSS group. The SSS group had a higher mean GPA and a higher percentage of graduation.

Table 2

*Descriptive Statistics for Non-SSS Group*

<u>Variable</u>	<u>Range</u>	<u>Min.</u>	<u>Max.</u>	<u>Mean</u>	<u>SD</u>	<u>Variance</u>
ACT Scores	16	12	28	17.94	3.150	9.924
Semester Hrs	17	1	18	6.70	2.957	8.742
Credit Hrs	159	12	171	71.93	31.461	989.777
GPA	4	0	4	2.89	.812	.660
Graduation	1	0	1	.640	.4819	.232

Note: N=250. CI = confidence interval.

**Hypothesis One: Semester Hours Completed (Current Semester)**

H<sub>0</sub> stated that there would be no significant relationship between SSS participation and number of semester hours completed in the current semester. The results of the regression analysis were summarized in Table 3. The standardized beta coefficient for number of semester hours completed was significant at the .05 level ( $p=.013$ ). Therefore, the study rejected the null hypothesis. A significant relationship was found between SSS participation and number of semester hours completed.

Table 3

*SSS and Semester Hours Completed*

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
-0.832	.333	-.157	.025	6.421	.025	6.421	[-1.488, -.176]

Note: N=250. CI = confidence interval.

**Hypothesis Two: Number of Cumulative Credit Hours Completed**

H<sub>0</sub> stated that there would be no significant relationship between SSS participation and number of cumulative credit hours. The results of the regression analysis were summarized in Table 4. The standardized beta coefficient for number of semester hours completed was significant at the .05 level ( $p=.006$ ). Therefore, the study rejected the null hypothesis. A significant relationship was found between SSS participation and number of cumulative credit hours.

Table 4

*SSS and Cumulative Credit Hours*

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
-9.608	3.475	-.173	.030	7.645	.030	7.645	[-16.452, -2.764]

Note: N=250. CI = confidence interval.

### Hypothesis Three: SSS and Final GPA

H<sub>0</sub> stated that there would be no significant relationship between SSS participation and final GPA. The results of the regression analysis were summarized in Table 5. The standardized beta coefficient for number of semester hours completed was significant at the .05 level ( $p=.003$ ). Therefore, the study rejected the null hypothesis. A significant relationship was found between SSS participation and GPA.

Table 5

#### *SSS and Final GPA*

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
-0.253	.085	-.186	.035	8.880	.035	8.880	[-.420, -.086]

Note: N=250. CI = confidence interval.

### Hypothesis Four: SSS and Graduation

H<sub>0</sub> stated that there would be no significant relationship between SSS participation and graduation (graduation was divided into grad and nongrad dummy variables for purposes of SPSS). The results of the regression analysis were summarized in Table 6. The standardized beta coefficient for number of semester hours completed was significant at the .05 level ( $p=.012$ ). Therefore, the study rejected the null hypothesis. A significant relationship was found between SSS participation and graduation.

Table 6

*SSS and Graduation*

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
-.144	.057	-.159	.025	6.432	.025	6.432	[-.256, -.032]

Note: N=250. CI = confidence interval.

**Hypothesis Five: SSS and Non-Graduation**

H<sub>0</sub> stated that there would be no significant relationship between SSS participation and non-graduation (graduation was divided into grad and nongrad dummy variables for purposes of SPSS). The results of the regression analysis were summarized in Table 7. The standardized beta coefficient for number of semester hours completed was significant at the .05 level ( $p=.012$ ). Therefore, the study rejected the null hypothesis. A significant relationship was found between SSS participation and non-graduation.

Table 7

*SSS and Non-Graduation*

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
.144	.057	.159	.025	6.432	.025	6.432	[.032, .256]

Note: N=250. CI = confidence interval

**Research Question One: ACT and SSS**

H<sub>0</sub> stated that there would be no significant relationship between ACT score and SSS participation. The results of the regression analysis were summarized in Table 8. The standardized beta coefficient for number of semester hours completed was not significant at the .05 level ( $p=.721$ ). Therefore, the study failed to reject the H<sub>0</sub>. A significant relationship was not found between ACT score and SSS participation.

Table 8

*ACT and SSS*

---

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
.004	.011	.023	.001	.128	.001	.128	[.004, .011]

---

Note: N=250. CI = confidence interval.

**Research Question Two: ACT and Non-SSS**

H<sub>0</sub> stated that there would be no significant relationship between ACT score and non-SSS participation. The results of the regression analysis were summarized in Table 9. The standardized beta coefficient for number of semester hours completed was not significant at the .05 level ( $p=.721$ ). Therefore, the study failed to reject H<sub>0</sub>. A significant relationship was not found between ACT score and non-SSS participation.

Table 9

*ACT and Non-SSS*

<u>B</u>	<u>SE B</u>	<u>b</u>	<u>R<sup>2</sup></u>	<u>F</u>	<u>Δ R<sup>2</sup></u>	<u>Δ F</u>	<u>(95% CI)</u>
-0.004	.011	-.023	.001	.128	.001	.128	[-.025, .017]

Note: N=250. CI = confidence interval.

### Summary

The research hypotheses were tested by multiple linear regression in SPSS with independent variables SSS and ACT; and dependent variables semester hours, credit hours, GPA and graduation. The null hypotheses stated that each of the dependent variables would not be significantly related to SSS participation. The bi-conditional SSS and graduation variables were divided into two dummy variables each for inclusion in multiple linear regression as previously stated.

Multiple linear regression analysis resulted in rejection of each null hypothesis: 1 (semester hours), 2 (credit hours), 3 (GPA), and 4 (graduation). There was a statistically significant relationship found between SSS participation and semester hours, credit hours, GPA, and graduation. Ancillary research questions as to possible relationships between ACT score and SSS participation resulted in no statistically significant relationships between those two variables with ACT the independent variable in this case and SSS the dependent variable.

Pearson r correlations and one-tailed t-test significance values formed the basis for further discussion and for attempts to explain the findings. These values were

summarized in Table 10. The ACT/SSS comparison pertaining to the ancillary research questions was done with ACT as independent and SSS as dependent but the values have been included in this table for convenience.

Table 10

*Correlations between Variables in the Regression Model*

		Semester Hrs	Credit Hrs	GPA	Grad	Non- Grad	ACT
SSS	Pearson correlation	.157	.173	.186	.159	-.159	.023
	Sig. (1-tailed)	.007	.003	.002	.006	.006	.361
nonSSS	Pearson correlation	-.157	-.173	-.186	-.159	.159	-.023
	Sig. (1-tailed)	.007	.003	.002	.006	.006	.361

SSS participation showed a weak positive relationship with semester hours, credit hours, GPA, and graduation. Non-SSS participation showed a weak negative relationship with semester hours, credit hours, GPA, and graduation. ACT score, when considered as an independent variable, showed a very weak to no relationship with SSS participation considered in that case as a dependent variable.

CHAPTER V  
SUMMARY, RECOMMENDATIONS, AND CONCLUSION

**Introduction**

The purpose of this study was to explore the impact of the SSS program on the retention of students at SKCTC and to determine if a statistically significant relationship existed between participation in the SSS program and semester hours, credit hours, GPA, and graduation. The implications of a relationship or lack thereof were considered as to their impact on future research, policy and practice pertaining to SSS. Findings and recommendations would therefore ultimately benefit the students at the college.

Null hypotheses were as follows:

Semester Hours -  $H_0$  stated that there would be no significant relationship between SSS participation and number of semester hours completed in the current semester.

1. Credit hours -  $H_0$  stated that there would be no significant relationship between SSS participation and number of cumulative credit hours.
2. SSS and GPA -  $H_0$  stated that there would be no significant relationship between SSS participation and final GPA.
3. SSS and graduation -  $H_0$  stated that there would be no significant relationship between SSS participation and graduation (graduation was divided into grad and nongrad dummy variables for purposes of SPSS).

4. SSS and non-graduation - H<sub>0</sub> stated that there would be no significant relationship between SSS participation and graduation (graduation was divided into grad and nongrad dummy variables for purposes of SPSS).

Research questions ancillary to the primary purpose of the study were as follows:

1. ACT and SSS - H<sub>0</sub> stated that there would be no significant relationship between ACT score and SSS participation.
2. ACT and non-SSS - H<sub>0</sub> stated that there would be no significant relationship between ACT score and non-SSS participation.

Null hypotheses were tested via multiple linear regression in SPSS. The independent variable was SSS participation (divided into SSS and non-SSS dummy variables). Semester hours, credit hours, grade point average, graduation and non-graduation were the dependent variables. The additional research questions treated ACT as the independent variable and SSS/non-SSS as the dependent variable(s) to satisfy curiosity about a possible relationship between those variables, since ACT or its equivalent is required of all incoming students. Null hypotheses were rejected if the standardized beta coefficient of the independent variable in a hypothesis was significant at the .05 level.

### **Summary of Findings**

#### **Hypothesis one: Semester Hours**

Multiple linear regression including SSS as the independent variable and semester hours as the dependent variable yielded significant results at the .05 level ( $p=.013$ ). The results rejected the null hypothesis. A statistically significant relationship was found between SSS participation and number of semester hours completed.

**Hypothesis two: Credit Hours**

Multiple linear regression including SSS as the independent variable and credit hours as the dependent variable yielded significant results at the .05 level ( $p=.006$ ). The results rejected the null hypothesis. A statistically significant relationship was found between SSS participation and number of cumulative credit hours.

**Hypothesis three: GPA**

Multiple linear regression including SSS as the independent variable and GPA as the dependent variable yielded significant results at the .05 level ( $p=.003$ ). The results rejected the null hypothesis. A statistically significant relationship was found between SSS participation and final GPA.

**Hypothesis four: Graduation**

Multiple linear regression including SSS as the independent variable and graduation as the dependent variable yielded significant results at the .05 level ( $p=.012$ ). The results rejected the null hypothesis. A statistically significant relationship was found between SSS participation and graduation. The statistics  $B$ ,  $b$ , and  $CI$  were negative so there was a negative relationship between SSS and graduation.

**Hypothesis five: Non-graduation**

Multiple linear regression including SSS as the independent variable and graduation as the dependent variable yielded significant results at the .05 level ( $p=.012$ ). The results rejected the null hypothesis. A statistically significant relationship was found between SSS participation and graduation. The statistics  $B$ ,  $b$ , and  $CI$  were positive

(opposite signs from hypothesis four with the absolute values of B and b identical in each set of results) so there was a positive relationship between SSS and non-graduation.

#### **Research question one: ACT and SSS**

Multiple linear regression including ACT as the independent variable and SSS as the dependent variable did not yield significant results at the .05 level ( $p=.721$ ). The results failed to reject the  $H_0$ . A statistically significant relationship was not found between ACT score and SSS participation. The statistics B, b, and CI were positive but since no significant relationship was found the signs became negligible.

#### **Research question one: ACT and nonSSS**

Multiple linear regression including ACT as the independent variable and nonSSS as the dependent variable did not yield significant results at the .05 level ( $p=.721$ ). The results failed to reject the  $H_0$ . A statistically significant relationship was not found between ACT score and SSS participation. The statistics B, b, and CI were negative but since no significant relationship was found the signs became negligible.

### **Discussion of Findings and Implications Related to the Literature**

#### **Hypothesis one: Semester Hours**

Regression analysis showed a statistically significant relationship between SSS participation and semester hours ( $p=.013$ ). The null hypothesis was rejected. This reflects positively on the SSS program. A larger number of credit hours may indicate increased confidence on the part of the students. It should also lead to completion in less time. This exhibits a greater degree of academic engagement as in Tinto's model. This should in turn assist greater social engagement. Even in cases of academic difficulties,

Southeast Community and Technical College offers peer tutoring which gives students additional chances to enhance academic and social engagement.

### **Hypothesis two: Credit Hours**

Regression analysis showed a statistically significant relationship between SSS participation and credit hours ( $p=.006$ ). The null hypothesis was rejected. This reflects positively on the SSS program. Possession of a larger number of cumulative credit hours indicates greater progression toward completion than their non-SSS peers. SSS students are first-generation or low-income students and have additional mitigating factors related to those parameters. Of course, some non-SSS may have the same characteristics depending on election to participate in the program. Further research may be required to investigate similarities and differences between the SSS and non-SSS populations. This finding also suggests increased levels of academic engagement as in Tinto (1993).

### **Hypothesis three: GPA**

Regression analysis showed a statistically significant relationship between SSS participation and final Grade Point Average ( $p=.003$ ). The null hypothesis was rejected. This reflects positively on the SSS program. Higher GPAs than from non-SSS peers indicates greater success at completing courses on the way to the degree, certificate or diploma. This also suggests efficacy of the program in helping participants overcome the additional mitigating factors associated with being low-income and first-generation.

### **Hypothesis four: Graduation**

Regression analysis showed a statistically significant relationship between SSS participation and graduation ( $p=.012$ ). The null hypothesis was rejected. However, the

relationship between SSS and graduation was negative as indicated by negative values for  $B$ , the unstandardized beta coefficient, and  $b$ , the standardized beta coefficient. Identical but positive values were found for the other dummy variable, non-graduation. This indicates a paradox in which SSS students make significant progress in semester hours, credit hours, and GPA but not in graduation. Apparently factors exist that cause SSS students to complete at a lesser rate than their non-SSS counterparts. The findings in this study concern correlation but not causation.

#### **Hypothesis five: Non-graduation**

Regression analysis showed a statistically significant relationship between SSS participation and non-graduation ( $p=.012$ ). The null hypothesis was rejected. However, the relationship between non-SSS and graduation was positive as indicated by positive values for  $B$ , the unstandardized beta coefficient, and  $b$ , the standardized beta coefficient. Identical but negative values were found for the other dummy variable, graduation. This indicates that non-SSS students graduated at a significantly higher rate than SSS students, which is contrary to what was expected from the program. This will be a topic for further research.

#### **Research question one: ACT and SSS**

This research question was considered to see whether ACT score (and hence assumed academic skill upon college entry) was significantly related to SSS participation. ACT was the independent variable and SSS was the dependent variable, which was divided into dummy variables SSS and non-SSS. Regression analysis did not show a

statistically significant relationship between ACT and SSS ( $p=.721$ ). The null hypothesis was not rejected. ACT score had no significant impact on SSS participation.

### **Research question two: ACT and non-SSS**

This research question was considered to see whether ACT score (and hence assumed academic skill upon college entry) was significantly related to non-SSS participation. ACT was the independent variable and SSS was the dependent variable, which was divided into dummy variables SSS and non-SSS. Regression analysis did not show a statistically significant relationship between ACT and non-SSS ( $p=.721$ ). The null hypothesis was not rejected. ACT score had no significant impact on non-SSS participation.

## **Study Limitations and Recommendations for Future Research**

### **Sample**

The population included all students enrolled in Southeast Kentucky Community and Technical College during Spring 2015. One-hundred twenty-five students were chosen from SSS participants and non-SSS participants ( $N=250$ ). SPSS statistics were calculated for 95% confidence and a 5% margin of error. SSS and non-SSS participant records were randomly selected from institutional databases. SSS participation criteria were as follows:

1. Low income – is the student eligible for financial aid
2. First generation – Table looks at parental education attainment. A logic table was set up to see if one or both parents have attained a baccalaureate degree.

SSS status was obtained from SSS program records. Otherwise, students were classified as non-SSS, whether or not they were eligible for the program. One-hundred twenty-five of each were chosen. Information included demographics, semester hours completed, credit hours completed, final grade point average, and graduation status.

There were no guarantees whether findings would vary if the particular sample participants differed from those chosen. However, the sample was chosen randomly as specified. Also, particular letter grades were not considered in the study. Completion of a course would result from a grade of A, B, C, or D. However, lower grades would have negatively affected GPA. Letter grades might seem like a basis for further investigation of the non-graduation phenomenon, but this would seem to be contraindicated by the significantly higher GPA of SSS participants. The population reside in the college service area in southeastern Appalachia. Due to the small percentage of ethnic minorities in the general population and hence enrolled in college, the sample could not be ethnically diverse.

### **Instruments, Reliability, Validity**

There was no instrumentation used in this study. As such, there were no instrument-based concerns about reliability and internal or external validity. Pertaining to internal validity, a maturation threat was possible since the academic career would take two years and sometimes more to complete. This should be monitored if pretest/posttest research is attempted. Also no differentiation was made among participants pertaining to program of study. Pertaining to external validity, there was no experimental hindrance to generalizing results to non-experimental settings (reactive effects of experimental

arrangements). There was only one treatment (SSS participation), so there was no multiple treatment inference threat.

Participant data were randomly selected from college files. Quantitative statistics were obtained via SPSS using multivariate regression analysis. Future research could make use of standardized instruments for further investigation of this study's findings.

### **Analysis**

Multiple linear regression was the appropriate statistical test for the several independent variables and the SSS/non-SSS dependent variables. SPSS calculated beta coefficients for each independent variable in an attempt to find a regression equation predictive of the dependent variable(s). Significant values were found for hypotheses 1 (semester hours), 2 (credit hours), and 3 (GPA), 4 (graduation) and 5 (non-graduation). However, hypotheses 4 and 5 yielded significantly negative results pertaining to SSS participation. The study did not investigate the possibility of non-linear correlations between variables, nor did it differentiate between letter grades or between programs of study. These were seen as tasks for further research. SPSS compensated for outliers during the regression analysis. SPSS calculated correlations and significances between variables. These values formed the basis for further interpretation of the study's findings.

### **Implications**

#### **Hypothesis One: Semester hours.**

Semester hours are a component of retention and completion. Higher numbers of semester hours suggest faster progression toward completion.

This study found SSS participation to be a statistically significant predictor of higher numbers of credit hours per semester. The SSS program offers close monitoring and advising services which may be factors in the taking of greater numbers of semester hours. Completion of the same numbers of credit hours was not separately considered but would seem to have been mitigated by the higher GPA of SSS participants but then contradicted by the anomalous lower graduation rate (which in turn was not considered with respect to specific program of study).

**Hypothesis Two:**

Credit hours. Credit hours are also a component of retention and completion. Higher numbers of credit hours likewise suggest faster progression toward completion.

This study found SSS participation to be a statistically significant predictor of higher numbers of credit hours per semester. The SSS program's monitoring and advising services may have been factors in the number of credit hours taken. As noted above, greater specificity with respect to letter grades and program of study remain as points for future research.

**Hypothesis Three: GPA.**

Overall GPA is a component of retention and enrollment. A higher GPA would seem to be a strong indicator of progression toward degree completion. The GPA is considered as a common measure of success whereas semester hours and credit hours are not.

This study found SSS participation to be a statistically significant predictor of GPA. The GPA parameter would be considered by this college or by any transfer college. It would also be considered for entry to certain programs or for program retention.

**Hypotheses Four and Five: Graduation and non-graduation.**

Graduation would be the terminal measure of retention and completion. The goal of college attendance would generally be graduation with the credential of one's choice.

This study found SSS participation to be a statistically significant, albeit negative, predictor of graduation status for SSS participants. It also found non-SSS participation to be a statistically significant, positive, predictor of graduation status for non-SSS participants. This was construed to mean that SSS students graduated at a rate less than that of their non-SSS counterparts, which would be an anomaly based on the findings pertaining to semester hours, credit hours, and GPA. This suggested that other factors contributed to SSS students failing to complete although they were more likely to have comparatively higher levels of credit hours, semester hours, and GPA.

**Research Questions One and Two: ACT and SSS/non-SSS.**

ACT scores or their equivalent are necessary for all incoming college enrollees. These research questions were considered to see whether significant differences existed upon college entry that pertained to SSS participation or non-SSS participation. This study did not find ACT score to be a statistically significant predictor of participation in the SSS program.

## **Recommendations for Future Research and Practice**

### **Recommendation One.**

Perform additional research with greater specificity on credit hours. That is, investigate courses taken as to program, type, and difficulty. This might provide information on the quality of the courses taken by SSS and non-SSS students and further explain this study's findings pertaining to hypothesis one (credit hours).

### **Recommendation Two.**

Perform additional research with greater specificity on semester hours. Investigate courses taken as to program, type, and difficulty. This might provide information on the quality of the courses taken by SSS and non-SSS students and further explain this study's findings pertaining to hypothesis two (semester hours).

### **Recommendation Three.**

Perform additional research with GPA to see if the findings from this study are replicated (due to the graduation anomaly with respect to GPA) and to see whether greater specificity of courses taken with respect to program, type, difficulty, and letter grade further explains findings pertaining to hypothesis three (GPA) or hypotheses four and five (graduation/non-graduation).

### **Recommendation Four.**

Perform additional research to see if the findings of this study pertaining to hypotheses four and five (graduation/non-graduation) replicate since the present study's findings on hypotheses four and five seem to be anomalous when compared to the findings from hypotheses one, two and three.

**Recommendation Five.**

Evaluate and adjust SSS programming according to the best practices described in the literature. Identify any significant predictors of SSS success (contrasted with this study which was concerned with SSS/non-SSS comparison) and incorporate facets of those predictors into the program, then in time perform the research again. This recommendation would undergird the findings based on all hypotheses.

**Recommendation Six.**

Investigate whether any instruments exist that provide greater specificity into the aforementioned hypotheses or into additional parameters (such as demographics, income, etc.) pertaining to SSS eligibility or participation. Such instruments might provide more detailed insight into the findings plus make it more convenient to perform statistical analysis and reporting as opposed to creating a new instrument or using a qualitative approach.

**Recommendation Seven.**

Investigate professional development needs of SSS personnel and offer professional development events to align personnel behaviors with best practices as described in the literature, and also to align personnel behaviors with positive behaviors that focus on student engagement as described in the literature. This recommendation was based on best practices as described in the literature.

**Conclusion**

The purpose of this study was to explore the impact of the Student Support Services program on the retention of students at Southeast Kentucky Community and

Technical College. In particular, the study investigated the program's impact on SSS student retention and completion.

Tinto (1975) has provided the bulk of research on student retention and departure. Key elements of retention were social and academic integration (Tinto, 1975). Bean (1980) and Astin (1984) also identified social and academic integration as being the most important contributors to student retention and completion. Bean (1980) furthermore mentioned incoming student beliefs (i.e., self-efficacy) as being integral to student success. SSS programming was designed to improve incoming student attitudes. Self-efficacy (Bandura, 1977) of SSS participants would be another area of possible further research and would easily lend itself to the use of existing instruments and a pretest-posttest model.

Social and academic involvement have also been key elements of SSS program goals and integrated into the college mission statement. The SSS program is particularly crucial to participant success due to the economic conditions prevalent in the southern Appalachian college service area and those obstacles inherent within the population eligible for SSS (first-generation college, low-income).

Findings of this study indicated that the SSS program at the college have at least somewhat engaged students academically and socially with respect to outcomes in semester hours, credit hours, and GPA, if not graduation. Further research is needed to determine why the graduation anomaly existed if success had been attained in the other areas. Also, further research could focus more intensively on the types of academic and social engagement to provide greater insight.

SSS has been a federal TRIO program since 1968 with an outreach to low-income, first-generation college students. The federal government has found it beneficial enough to continue offering it since that time. Data are regularly gathered as a function of the program and evaluated with each grant cycle. Studies such as this one have sought to further inform and uphold the decisions of policy-makers and to make a valuable contribution to the field of literature. Students that are participants in the program connect and develop strong social networks with their peers. One of the most valuable service a student receives in the SSS program is advising and personal counseling. Counseling has been noted in research to increase the retention of students, given that academic problems and non-academic problems will interfere with them being successful in pursuing their college goals.

This study has found significant benefits of SSS participation in some areas and has provided a basis for extensions of this study's research and forays into additional areas. Recommendations were made based on this study's findings with respect to the hypotheses or the literature. The ultimate end of this study is to enhance SSS programming at SKCTC such that student credential goals and the college mission statement are met in increasingly more efficient and effective ways.

In closing SKCTC and other community colleges are a key entry point to higher education for students from first generation and low socioeconomic backgrounds. These students are more likely to have to overcome barriers to reach their educational goals. The SSS program will continue to seek methods to communicate and motivate them to graduate and transfer to a 4-year institution.

## REFERENCES

- Kentucky Postsecondary Education Improvement Act. (1997). House Bill 1 as enacted (97 SS HB1/EN). *Frankfort, KY: General Assembly Commonwealth of Kentucky.*
- Allen, B. A. (1993). The student in higher education: Nontraditional student retention. *Community Services Catalyst, 23*, 19-22.
- Astin, A. W. (1972). *College dropouts: A national profile*. Washington DC: American Council on Education.
- Astin, A. W. (1974). Measuring the outcomes of higher education. In H. Bowen (Ed.), *Evaluating Institutions for Accountability. New Directions for Institutional Research, No. 1*. San Francisco: Jossey-Bass.
- Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco, CA: Jossey-Bass.
- Astin, A. W. (1977). *Four critical years: Effects of college on beliefs, attitudes, and knowledge*. San Francisco: Jossey-Bass.
- Astin, A. W. (1984). Student Involvement: A developmental theory for higher education. *Journal of College Student Personnel, 25*, 297-308.
- Astin, A. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40(5)*, 518-529.

- Bailey, T. R., & Alfonso M. (2005) *Paths to persistence: An analysis of research on program effectiveness at community colleges*. New York: NY: Columbia University.
- Bailey, T., Jenkins, D., & Leinbach, T. (2005, January). *What we know about community college low-income and minority student outcomes: Descriptive statistics from national surveys*. New York, NY: Columbia University.
- Baird, L. (1990). *Academic, personal and situational factors in retention in community colleges*. Lexington, KY: University of Kentucky.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191.
- Beal, P., & Noel, L. (1980). *What works in student retention*. Boulder, CO: National Center for Higher Education Management Systems.
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a casual model of student attrition. *Research in Higher Education*, 12, 155-187.
- Bean, J. P. (1983). The application of a model of turnover in work organizations to the student attrition process. *The Review of Higher Education*, 6(2), 129.
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55, 485-540.
- Benshoff, J. M. (1991). Nontraditional college students: A developmental look at the needs of women and men returning to school. *Journal of Young Adulthood and Middle Age*, 3, 47-61.
- Benshoff, J. M. & Lewis, H. A. (1992). *Nontraditional college students*. Retrieved from ERIC database (ED347483)

- Berkner, L., Horn, L., Clune, M., & Carroll, C. D. (2000). Descriptive summary of 1995–96 beginning postsecondary students: Three years later (NCES 2000-154). Washington, DC: U.S. Government Printing Office.
- Billson, J. M., & Terry, M. B. (1982). In search of the silken purse: Factors in attrition among first-generation students. *College and University*, 58, 57–75.
- Borglum, K., & Kubala, T. (2000). Academic and social integration of community college students: A case study. *Community College Journal of Research and Practice*, 24(7), 567-576.
- Boswell, K. (2004). Keeping America's promise: A discussion guide for state and community college leaders. In K. Boswell & C. D. Wilson (Eds.) *Keeping America's promise: A report on the future of the community college* (pp. 47-52). Denver, CO: Education Commission of the States and the League for Innovation in the Community College.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2003). *Understanding and reducing college student departure*. San Francisco, CA: Jossey-Bass.
- Brawer, F. B. (1996). *Retention-Attributes in the nineties*. (Report No. EDO-JC-96-6). Retrieved from ERIC database (ED393510)
- Cabrera, A. F., Nora, A., & Castaneda, M.B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *The Journal of Higher Education*, 64(2), 123-139.
- Cahalen, M., Chaney, B., & Chen, S. (1994). *National Study of Student Support Services, Interim Report, Volume 2, Profile of Freshman Participants and Project Services: 1991-1992*. Washington, DC: U.S. Department of Education.

- Chickering, A. W., & Gamson, Z. F. (1987). *Seven principles for good practice in undergraduate education*. Washington, DC: American Association for Higher Education.
- Choy, S. (2000). *Low-income students: Who they are and how they pay for their education*. Washington, DC: National Center for Education Statistics.
- Cooper, M. (2010, October). *Student support services at community colleges: A strategy for increasing student persistence and attainment*. Retrieved from <http://www2.ed.gov/PDFDocs/college-completion/04-student-support-services-at-community-colleges>
- Cross, K. P. (1980). Our changing students and their impact on colleges: Prospects for a true learning society. *The Phi Delta Kappan*, 61(9), 627-630.
- Donaldson, J. F., & Graham, S. (1999). A model of college outcomes for adults. *Adult Education Quarterly*, 50(1), 24-40.
- Dougherty, K. J. (2002). The evolving role of the community college: Policy issues and research questions. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* Vol. 17 (pp. 295–348).
- Durkheim, E. (1951). *Suicide*. Translated by J. A. Spaulding and G. Simpson. Glencoe, OH: The Free Press.
- Durkheim, E. (1961). *Moral education: Study in the theory and application of the sociology of education*. Translated by E. K. Wilson and H. Schnurer. New York: The Free Press.
- Engle, J. (2007). Postsecondary access and success for first-generation college students. *American Academic*, 3(1), 25-48.

- Grubb, N. (1999). *Honored but invisible*. New York: Routledge.
- Henningsen, M. L., Henningsen, D. D., Cruz, M. G., & Morrill, J. (2003). Social influence in groups: A comparative application of relational framing theory and the elaboration likelihood model of persuasion. *Communication Monographs*, 70(3), 175-197.
- Henslin, J. M. (1997). *Sociology: A down- to-earth approach (3<sup>rd</sup> ed.)*. Boston: Allyn & Bacon.
- Hoachlander, G., Sikora, A. C., & Horn, L. (2003). *Community college students: Goals, academic preparation, and outcomes (NCES 2003-164)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice*. New York: Cambridge University Press.
- Horn, L., & Carroll, C. D. (1996). *Nontraditional undergraduates: Trends in enrollment from 1986 to 1992 and persistence and attainment among 1989-1990 beginning postsecondary students*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 97- 578).
- Horn, L. J., Peter, K., & Rooney, K. (2002). *Profile of undergraduates in U.S. postsecondary educational institutions: 1999–2000*. Statistical Analysis Report NCES 2002–168. Washington, DC: National Center for Education Statistics.
- Hoyt, J. E. (1999). Remedial education and student attrition. *Community College Review*, 27(2), 51-72.

- Ishitani, T. T. (2003). A longitudinal approach to assessing attrition behavior among first-generation students: Time-varying effects of pre-college characteristics. *Research in Higher Education, 44*(4), 433-449.
- Jones, D., & Watson, B. (1990). *High risk students in higher education*. ASHE-ERIC Higher Education Report 3. Washington, DC: Clearinghouse on Higher Education.
- Kasper, H. T. (2003). The changing role of community college. *Occupational Outlook Quarterly, 46*(4), 14-21.
- Kraemer, H. C., Kazdin, A. E., Offord, D. R., Kessler, R. C., Jensen, P. S., & Kupfer, D. J. (1997). Coming to terms with the terms of risk. *Archives of General Psychiatry, 54*(4), 337-343.
- Ko, J. W. (2005). Retention of vocational education graduates in public higher education. *College Student Journey, 39*(3), 461-468.
- Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change, 33*(3), 10-17, 66.
- Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change, 35*(2), 24-32.
- Li, G., & Killian, T. (1999). *Students who left college: An examination of their characteristics and reasons for leaving*. Paper presented at the Annual Forum of the Association for Institutional Research (39<sup>th</sup>, Seattle, WA.).
- London, H. B. (1996). How college affects first-generation students. *About Campus, 1*(5), 9-23

- Marlow, C. (1989). Identifying the problems and needs of nontraditional students at your institution. *NASPA Journal*, 26, 273-277.
- Marti, C. N. (2004). *Overview of the CCSSE instrument and psychometric properties*. Retrieved from <http://www.ccsse.org/aboutsurvey/psychometrics>
- Marti, C. N. (2006) *Dimensions of student engagement in American community colleges: Using the community college student report in research and practice*. Retrieved from <https://www.ccsse.org/aboutsurvey/docs/psychometrics>
- Martinez, M. (2004). High and rising: How much higher will college enrollments go. In K. Boswell & C. D. Wilson (Eds.) *Keeping America's promise: A report on the future of the community college* (pp. 47-52). Denver, CO: Education Commission of the States and the League for Innovation in the Community College.
- Mason, H. P. (1998). A persistence model for African American male urban community college students. *Community College Journal of Research and Practice*, 22(8), 751-760.
- Matus-Grossman, L., & Gooden, S. (2002). *Opening Doors: Students' Perspectives on Juggling Work, Family, and College*. New York: Manpower Demonstration Research Corporation. (ERIC Document Reproduction Service No. ED 471815)
- McClenney, K. M. (2004). Redefining quality in community colleges: Focusing on good educational practice. *Change: The Magazine of Higher Learning*, 36(6), 16-21.
- McClenney, K. M. (2006). Benchmarking effective educational practice. *New Directions for Community Colleges*, 2006(134), 47-55.
- Mitchell, K. (1997). Making the grade: help and hope for the first generation college student. *ERIC Review*, 5(3), 13-15.

- Murtaugh, P. A., Burns, L. D., & Schuster, J. (1999). Predicting the retention of university students. *Research in Higher Education, 40*(3), 355-371.
- Nealy, M. J. (2008). On the losing end. *Diverse Issues in Higher Education, 25*(6), 11.
- Noel, L., Levitz, R., & Saluri, D. (1985). *Increasing student retention*. San Francisco: Jossey-Bass.
- Office of the Inspector General (1985), *Results of OIG's Limited Review of the Special Programs for Disadvantaged Students*. Washington, DC: U.S. Department of Education.
- Pace, C. R. (1984). *Measuring the quality of college student experiences*. Los Angeles: University of California, Higher Education Research Institute.
- Pascarella, E. T. (1980). Student-faculty informal contact and college outcomes. *Review of Educational Research, 50*(4), 545-595.
- Pascarella, E. T. (1982). *Studying student attrition*. San Francisco, CA: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (1998). Studying college students in the 21<sup>st</sup> century: Meeting new challenges. *Review of Higher Education, 21*, 151-65.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students* (Vol. 2). K. A. Feldman (Ed.). San Francisco, CA: Jossey-Bass.
- Peterman, D. (2000). First-generation college students. *Community College Journal of Research and Practice, 24*(5), 417.

- Phillippe, K. A., & Sullivan, L. G. (2005). *National profile of community colleges: Trends & statistics*. Washington, DC: American Association of Community Colleges.
- Price, D. V. (2004). Defining the gaps: Access and success at America's community colleges. In K. Boswell and C. D. Wilson (Eds.) *Keeping America's promise: A report on the future of the community college* (pp.35-37). Denver, CO: Education Commission of the States and the League for Innovation in the Community College.
- Richardson, R. C., & Skinner, E. F. (1992). Helping first-generation minority students achieve degrees. *New Directions for Community Colleges*, 1992(80), 29-43.
- Richter-Antion, D. (1986). Qualitative differences between adult and younger students. *NASPA Journal*, 23, 58-62.
- Roman, M. A. (2007). Community college admission and student retention. *Journal of College Admission*, 194, 18-23.
- Ruppert, S. S. (2003) *Closing the college participation gap: A national summary*. Denver, CO: Education Commission of the States Distribution Center.
- Seidman, A. (2005). *College student retention*. Westport, CT: American Council on Education and Prager Publishers.
- Southeast Kentucky Community and Technical College. (2002). *Vision Statement*. Retrieved from [http://southeast.kctcs.edu/en/About/Mission\\_and\\_Vision.aspx](http://southeast.kctcs.edu/en/About/Mission_and_Vision.aspx)
- Southeast Kentucky Community and Technical College. (2009). *Mission Statement*. Retrieved from [http://southeast.kctcs.edu/en/About/Mission\\_and\\_Vision.aspx](http://southeast.kctcs.edu/en/About/Mission_and_Vision.aspx)

- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1(1), 65-85.
- Stromei, L. K. (2000). Increasing retention and success through mentoring. *New Directions for Community College*, 112, 55-62.
- Student Support Services Program: Legislation, Regulations, and Guidance. (2011, September). U. S. Department of Education, Office of Postsecondary Education. Retrieved from <http://www2.ed.gov/programs/triostudsupp/legislation.html>
- Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education*, 37(1), 1-22.
- Thayer, P. B. (2000). *Retention of students from first generation and low-income backgrounds*. Washington, DC: Department of Education.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research, *Review of Educational Research*, 45, 89-125.
- Tinto, V. (1982). Limits of theory and practice in student attrition. *Journal of Higher Education*, 53(6), 687-700.
- Tinto, V. (1985). Dropping out and other forms of withdrawal from college. In L. Noel and R. Levitz (Eds.) *Increasing student retention*, 28-43. San Francisco: Jossey-Bass.
- Tinto, V. (1986). Retention: An admission concern. *College and University*, 61, 290-293.
- Tinto, V. (1987). *Learning college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.

- Tinto, V. (1993). *Leaving College: Rethinking the causes and cures of student attrition*, (2nd ed.). Chicago: University of Chicago Press.
- Townsend, B. K., Donaldson, J., & Wilson, T. (2005). Marginal or monumental? Visibility of community colleges in selected higher-education journals. *Community College Journal of Research & Practice*, 29(2), 123-135.
- U.S. Census Bureau (2008). *Small area income and poverty estimates program*. Retrieved from <https://www.census.gov/did/www/saipe/data/statecounty/data/2008.html>
- Vaughan, G. (2000). *The community college story*. Washington, DC: Community College Press.
- Voorhees, R. A. (1987) Towards building models of community college persistence: A logit analysis. *Research in Higher Education*, 26, 115-129.
- Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges. *Community College Journal of Research and Practice*, 26(6), 503-519.
- Willett, J. B. (1989). Some results on reliability for the longitudinal measurement of change: Implications for the design of studies of individual growth. *Educational and Psychological Measurement*, 49, 587-602.
- York-Anderson, D. C., & Bowman, S. L. (1991). Assessing the college knowledge of first-generation and second-generation college students. *Journal of College Students Development*, 32, 116-122.

APPENDIX A  
IRB APPROVAL LETTER



MISSISSIPPI STATE  
UNIVERSITY™

**Compliance Division**  
Administrative Offices  
Animal Care and Use (IACUC)  
Human Research Protection  
Program (IRB)  
1207 Hwy 182 West  
Starkville, MS 39759  
(662) 325-3496 - fax

**Safety Division**  
Biosafety (IBC)  
Radiation Safety  
Hazardous Waste  
Chemical & Lab Safety  
Fire & Life Safety  
70 Morgan Avenue  
Mississippi State, MS 39762  
(662) 325-8776 - fax

<http://www.orc.msstate.edu>  
[compliance@research.msstate.edu](mailto:compliance@research.msstate.edu)  
(662) 325-3294

January 14, 2010

Carolyn Sundy  
P.O. Box 302  
Lynch, KY 40855

RE: IRB Study #08-336: The Impact of the Student Support Services Program on the Retention of Students at Southeast Kentucky Community & Technical College

Dear Ms. Sundy:

The above referenced project was reviewed and approved via administrative review on 1/14/2010 in accordance with 45 CFR 46.101(b)(2). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

**Please note that the MSU IRB is in the process of seeking accreditation for our human subjects protection program. As a result of these efforts, you will likely notice many changes in the IRB's policies and procedures in the coming months. These changes will be posted online at <http://www.orc.msstate.edu/human/aahrpp.php>.**

Please refer to your IRB number (#08-336) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at [cwilliams@research.msstate.edu](mailto:cwilliams@research.msstate.edu) or call 662-325-5220.

Sincerely,

Christine Williams  
IRB Compliance Administrator

cc: James Ed Davis

APPENDIX B

LETTER OF PERMISSION AND APPROVAL TO SKCTC PRESIDENT

Dear President:

I am a graduate student enrolled in a doctoral program for a PhD in Community College Leadership thru Mississippi State University. I am a part of a cohort that has taken classes at Southeast Community and Technical College's Middlesboro Campus with faculty from Mississippi State University. The classes consisted of colleagues from Somerset, Hazard, Big Sandy and Southeast Community and Technical Colleges.

I would like permission from the President to use existing data within the KCTCS PeopleSoft system for my research. The data I wish to obtain is 125 Non-SSS participants' transcripts and their ACT, compass scores, grade point average, semester hours, graduate or non-graduate. The data will be collected from the PeopleSoft software for all student records.

This research study will look at SSS students and non-SSS that entered this college in 2003-2007. The data will be obtained from the SSS Annual Performance Reports, randomly select students using program I.D on the program roster and use the files which contain their transcripts. The Non-SSS students will be randomly selected by the Director of Institutional Planning and Research from the 2003-2007 student enrollment. The study will investigate whether students having access to Student Support Service program are more likely to be successful and be retained than the non-SSS students who have not received similar help and assistance.

As the Vice President of Diversity/Inclusion and Special Programs, I have access to student records. However, as the student researcher for this study, I am requesting your permission to access college records in the PeopleSoft database. The data collected and used in this dissertation will not be identifiable to a certain individual. The student's SKCTC I.D. number, social security number and personal information will not be used in this study.

I will share my findings with Mississippi State and with other interested parties once I have completed the dissertation process.

Thank you for your consideration.

Sincerely



Carolyn Sundy,  
Vice President for Diversity/Inclusion & Special Programs

**Office of the President**  
Dr. Lynn Moore

**Cumberland Campus**  
700 College Road  
Cumberland, KY 40823  
Telephone: (606) 589-3000  
Fax: (606) 589-3186  
southeast.kctcs.edu

**Harlan Campus**  
Telephone: (606) 573-1506

**Middlesboro Campus**  
Telephone: (606) 242-0070

**Pineville Campus**  
Telephone: (606) 337-3106

**Whitesburg Campus**  
Telephone: (606) 633-0279

November 7, 2016

To Whom This May Concern:

I, Lynn Moore, Ph.D., President and Chief Executive Officer of Southeast Kentucky Community and Technical College do give Carolyn Sundy permission to access the PeopleSoft student database of Southeast Kentucky Community and Technical College for the express reason of gathering data for use in the research study specifically associated with her doctoral dissertation.

Please let me know if you have any questions regarding the above directive.

Sincerely,



Lynn Moore, Ph.D.  
President/CEO

KCTCS is an equal opportunity employer and education institution.



KENTUCKY COMMUNITY & TECHNICAL COLLEGE SYSTEM