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A STUDY OF STATEWIDE TRANSFER AND ARTICULATION REPORTING SYSTEM (STARS) APPROVED COURSES COMPLETED AT AN ALABAMA COMMUNITY COLLEGE

By

Khristy G. Large

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 Instructional Systems,
Leadership and Workforce Development

Mississippi State, Mississippi

December 2008
A STUDY OF STATEWIDE TRANSFER AND ARTICULATION REPORTING SYSTEM (STARS) APPROVED COURSES COMPLETED AT AN ALABAMA COMMUNITY COLLEGE

By
Khristy G. Large

Approved:

__________________________________  ______________________________
James E. Davis     William M. Wiseman
Assistant Professor and Program Coordinator, Department of Instructional Systems, Leadership, and Workforce Development (Director of Dissertation)

(Committee Member)

----------------------------------  ----------------------------------
William M. Wiseman
Professor and Director, John C. Stennis Institute of Government

Jerry Mathews
Associate Professor and Graduate Coordinator, Department of Instructional Systems, Leadership, and Workforce Development

(Committee Member)

----------------------------------  ----------------------------------
Richard Blackbourn
Dean of the College of Education

----------------------------------  ----------------------------------
Joe T. Adams
Research Coordinator, Public Affairs Research Counsel of Alabama

(Committee Member)
The primary purpose of this study was to determine if students have earned more STARS articulated and transferrable hours since the creation of the STARS program than students did before the existence of the program in the state of Alabama. Study results revealed that the STARS program has had a significant impact on the amount of articulated credit hours students have earned since the creation of the STARS program. Additional variables such as ethnicity, gender, GPA, status, and student type were also used to determine if significant differences existed among these variables in students completing STARS-approved hours. Pre-existing data were used as the data source for the study. Non-identifiable, academic transcripts of 240 randomly selected associate degree graduates from Shelton State Community College were used in the study. Study years included 20 randomly selected students from each pre STARS
chosen year (1992-1997) and from each post STARS (2002-2007) year for a total of 240 study graduates.

Results of the statistical analysis were presented in both narrative and table form, answering the six research questions. The independent variable for the study was the STARS articulation program. The dependent variable for the study was the number of STARS-approved hours completed. An analysis of variance or ANOVA was used to analyze data. The study concludes with study summary, conclusions, implications, and recommendations for further research.
DEDICATION

This dissertation is dedicated to my loving husband, J. Gaston Large, III.
Without your support and encouragement, I could not have completed such a milestone in my life.
ACKNOWLEDGEMENTS

First I would like to thank God for giving me a sound mind and the perseverance to complete this study. I would also like to express sincere gratitude to my committee. Special thanks are due to my chair, Dr. Ed Davis for his encouragement, support and patience during this endeavor. A sincere thank you is also due to my other committee members, Dr. Marty Wiseman and Dr. Joe Adams for their guidance, flexibility, wisdom, and time in completing my dissertation. I would also like to thank Dr. Jimmy Williams for his generosity and expertise in working with me during this process. Your acts of kindness are appreciated.

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# TABLE OF CONTENTS

DEDICATION ............................................................................................................. ii

ACKNOWLEDGEMENTS............................................................................................ iii

LIST OF TABLES ....................................................................................................... ix

LIST OF FIGURES ................................................................................................. xi

CHAPTER

I. INTRODUCTION ................................................................................................. 1
   Statement of the Problem .................................................................................. 8
   Purpose of the Study ....................................................................................... 10
   Research Questions ......................................................................................... 10
   Justification of the Study .............................................................................. 11
   Limitations of the Study ............................................................................... 12
   Definition of Terms ....................................................................................... 13

II. REVIEW OF LITERATURE ............................................................................... 18
   The American Community College ........................................................... 18
   Mission of the Community College ........................................................... 26
   Transfer Mission of the Community College ........................................... 27
   The Open Admissions College ................................................................... 33
   Background on Transfer Articulation ....................................................... 34
   Statewide Transfer Articulation Programs ................................................. 45
   Overview of State Articulation Programs ................................................... 48
      Articulation in Mississippi ................................................................. 49
      Articulation in South Carolina ............................................................ 49
      Articulation in Illinois ............................................................................ 50
      Articulation in Ohio ............................................................................. 51
      Articulation in Florida ......................................................................... 52
APPENDIX

A. LETTER REQUESTING DATA FROM STARS ........................................ 140
B. LETTER REQUESTING DATA FROM SHELTON STATE .................... 142
C. PERMISSION LETTER FROM STARS ...................................................... 144
D. MISSISSIPPI STATE IRB LETTER .............................................................. 146
E. PERMISSION TO RE-PRINT FIGURE 2.1 ................................................ 148
F. PERMISSION TO RE-PRINT FIGURE 2.2 ................................................ 150
G. DATA RECORDING FORMS FOR DATA COLLECTION .................... 152
H. VITA ............................................................................................................... 155
LIST OF TABLES

4.2 Range, Minimum, Maximum and Mean Scores of Graduate Data....... 82

4.4 Dual Degrees, Certificates, and Short Certificates Earned by
Graduates ........................................................................................................ 85

4.5 Frequency Distributions for Number of Semesters Enrolled
By Graduates Prior to Earning Degree ......................................................... 86

4.6 Analysis of Variance Summary Table Regarding Significance
Levels Between Pre and Post STARS
Hours Earned.................................................................................................. 87

4.8 Mean Scores of STAR and Non STAR Hours
Earned between Graduates Pre and
Post STARS Implementation ....................................................................... 90

4.10 STARS-Approved Elective Hours Earned by
Post STARS Graduates .................................................................................. 92

4.11 Analysis of Variance Summary Table Regarding Ethnicity and
Significance Levels between Pre and Post
STARS Hours Earned .................................................................................... 93

4.13 Analysis of Variance Summary Table Regarding
Significance Levels Among Gender and Pre and Post
Post STARS Hours Earned ............................................................................ 95

4.14 Mean Scores of Male Pre and Post STARS Graduates .................... 97

4.15 Mean Scores of Female Graduates Pre and
Post STARS Implementation ....................................................................... 100
4.16 Analysis of Variance Summary Table Regarding
Significance Levels Among Student Type and
Pre and Post STARS Earned .............................................................. 101

4.17 Analysis of Variance Summary Table Regarding
Significance Levels Among GPA and Pre and Post
STARS Hours Earned ......................................................................... 102

4.18 Grade Point Average Frequencies Among Graduates......................... 103

4.19 Analysis of Variance Summary Table Regarding
Student Status Significance Levels Pre
and Post STARS Hours Earned .......................................................... 104

4.20 Frequency Distributions of Reverse Transfer, Transfer
and Native Students ........................................................................... 105

4.21 Mean and Standard Deviation Scores Among Student Status ............ 107
LIST OF FIGURES

1.1 Community College Growth by Decade .......................................................... 25

2.1 Transfer and Articulation Policies, Full Time Equivalent
   Fall Enrollment, and Percentage Distribution of Enrollment
   In Public 2-Year Institutions by State .......................................................... 42

2.2 The Evaluation Process for Transfer Credits ............................................... 44

3.1 Background Information on Shelton State Community College .............. 75

4.1 Degree Type Earned by Study Graduates .................................................... 81

4.3 Ethnicity of Graduates Used in Study .......................................................... 84

4.7 Total STARS and Non STARS-Approved Hours
   Completed by Graduates ............................................................................. 88

4.9 Percentage of STAR and non STAR Hours Earned
   By Graduates Pre and Post STARS Implementation .................................. 91

4.12 Mean Scores Among Male and Female Completion of STARS-
   Approved Hours ......................................................................................... 94
CHAPTER I
INTRODUCTION

The American community college has strong roots in the nation’s history through its commitment to expanding educational opportunities for all (Vaughan, 2000). Community colleges, also known as junior colleges, two-year institutions, and two-year colleges, have been long known for their affordability, location, and open admissions policies. Large proportions of undergraduate students attend two-year institutions seeking a wide range of services from which to gain postsecondary education, to obtain a structured vocational certificate or an associate degree for transfer. In 2003, Cohen claimed that a primary responsibility of the community college was to facilitate student transfer to a four-year institution.

Traditionally, two and four-year colleges have stood apart from one another. Too often have senior universities been content to ignore or suspect community college graduates and question the wisdom of accepting two-year college credits, particularly those credits that apply towards a baccalaureate major (Donovan, Schaier-Peleg, & Forer, 1987). For decades, students attending community colleges throughout the United States have been faced with the
possibility of losing course credit upon transfer to a four-year institution (Sessions, 2006). Luckily, several states, including the state of Alabama, have developed articulation agreements to assist with the process of transferring credits in order to prevent loss of credits and to provide accurate and useful information for transferring.

Furthermore, a growing body of literature indicates that increasing numbers of traditional students are enrolling in community college programs due to the growing recognition that a quality education can be obtained within their own community. With this growing recognition, the community college plays an important democratizing role in the American postsecondary system through its open admissions policy and diverse student body (Shaw & Jacobs, 2003). In order to assist with a smooth transition from a community college to a four-year institution, articulation agreements were developed, which have been part of the American educational scene for well over a 100 years (Prager, 1988). Initially, articulation agreements were implemented as a tool to deliver liberal arts education more effectively and efficiently, and have become more common as the number of community colleges have grown (Menacker, 1975).

The state of Alabama is committed to educating its citizens. The state’s higher education institutions include 22 community colleges, 4 technical colleges, and 17 public universities. The Alabama Community College System is administered through the Alabama Department of Postsecondary Education, and
its governing board is the Alabama State Board of Education. Among the 17 public universities, 9 are administered through three university systems, each with a governing board; with the remaining 8 colleges having separate governing boards (O’Neal & Wilds, 2002).

Two decades ago, transfer students in Alabama faced numerous obstacles and hurdles when transferring in-state community college credits from one public Alabama four-year institution of higher education to another. During this time, there was no statewide system of articulation in Alabama. Because of the lack of a statewide system, many students who attended state community colleges often faced academic, financial, and personal difficulties in their quest towards a baccalaureate degree at many of Alabama’s four-year or senior-level institutions (Wallace, 1994).

The establishment and growth of community and technical colleges in Alabama has occurred over the past three decades. Transfer from one community college to a university was based on well established degree program requirements and articulation agreements between individual community colleges and state universities (O’Neal & Wilds, 2002). The Alabama Commission of Higher Education in 1993 noted that many community college students who transferred to four-year institutions lost credit for numerous courses completed. As a result, students became frustrated and did not continue their education, resulting in additional educational costs for tuition and the
unnecessary repeat of courses, thus placing a burden on students, parents and taxpayers. In the 1980s many universities began establishing core curricular requirements in general studies for the freshman and sophomore years. The diversity of general studies degree requirements at public universities in Alabama required many community colleges to offer a wide range of courses in the humanities, social sciences, mathematics and natural sciences in order to enable students to transfer from the community college to the university of their choice. The combination of these factors caused significant problems in the articulation of degree program requirements between community colleges and public universities. Many students encountered difficulty in transferring academic credit in pursuit of their higher educational goals (O’Neal & Wilds, 2002).

Today, while there are many obstacles and hurdles that still exist for students who transfer, one that has been drastically reduced is that of losing course credit upon transfer. The articulation of degree program requirements and the opportunity to transfer courses are crucial considerations for many students in achieving their higher education goals in Alabama. The Articulation and General Studies Act (Act 94-202) created the Articulation and General Studies Committee (AGSC) in 1994 by the state legislature. This act was created to implement specific provisions of legislation and designed the Statewide Transfer and Articulation Reporting System, or STARS. The ASGC developed a
general studies curriculum and an articulation program within the first few years of activity, and in the summer of 1998, STARS became a statewide articulation information system (O’Neal & Wilds, 2002).

The AGSC was created to simplify the transfer of course credit between public institutions of higher education. In order to accomplish this task, the AGSC developed and implemented a statewide general studies articulation program that facilitated the transferability of coursework among all Alabama public colleges and universities. The AGSC continues to serve as a monitoring committee for the articulation program. It oversees and maintains the program on an on-going basis and works to resolve any student appeals related to the transfer of coursework (http://stars.troy.edu/).

The makeup of the AGSC was prescribed by the state legislation. It consists of three two-year college representatives, two regional university representatives, one Auburn University representative, one University of Alabama System representative, one University of South Alabama representative, one Alabama State University representative, and a representative from Alabama A & M University for a total of 10 members (http://stars.troy.edu/AGSC/what_agsc.htm). The Executive Director of the Alabama Commission on Higher Education and the Executive Director of Articulation for STARS serve as non-voting members (O’Neal & Wilds, 2002). Private colleges and universities in Alabama are not required to adhere to the
provisions set forth by the AGSC. However, many have adjusted their transfer policies and procedures to be consistent with the existing AGSC policy in order to improve the transfer process on their campuses (Sessions, 2006).

The AGSC has established a set structure for the community college student’s freshman and sophomore years of coursework. According to the Alabama State Board of Education policy pertaining to degrees and certificates, the associate in art and associate in science degree programs are designed for students who plan to transfer to a senior institution in the liberal arts, sciences, or a specialized professional field. The state board policy outlines that associate degree requirements shall be comprised of at least 60 semester credit hours, but no more than 64 semester hours (http://acs.cc.al.us/board/policies/712.01.pdf). The AGSC guidelines for transferring note that the receiving institution is only required to accept and give credit for half of the total bachelor’s degree program hours upon transfer from a community or junior college. Four-year transfer work beyond half of the total bachelor degree hours would be evaluated on a course-by-course basis by the receiving institution (http://stars.troy.edu/agsc/what_agsc.htm).

In Alabama over 100,000 students are enrolled in the state’s community college system (http://www.acs.cc.al.us). The articulation of program degree requirements and the opportunity to transfer academic credits are crucial considerations for many students in achieving their higher education goals.
Since 1998, over 400,000 transfer guides have been obtained through the STARS website. The AGSC/STARS has also developed Institutional Points of Contact (primary and alternate), at all public four-year universities and two-year institutions. These contact persons work together in order to facilitate communication and an understanding of the articulation program as well as to work through problems that arise when students transfer from one institution to another (O’Neal & Wilds, 2002).

The STARS program has had and continues to have a positive impact on transfer students across the state of Alabama. Public four-year institutions are now required by law to accept AGSC-approved coursework from community colleges in Alabama in order to graduate transfer students in a timely manner. The STARS program has received several accolades and national recognition as a model state articulation program by the American Association of State Colleges and Universities (AASCU) and the American Association of Community Colleges (AACC) according to O’Neal and Wilds (2002). During the 2004-2005 academic years, the use of the STARS Transfer Guide System reached an all-time high. Over 75,000 students, counselors, and advisors obtained transfer guides during this academic year (http://stars.troy.edu).
Statement of the Problem

The transfer student population benefits not only the two-year college system but also the four-year university college system. Many times, students misunderstand the transfer process or become disgruntled with the transfer process and policies. Also, many students mistakenly assume that the transfer process is easy (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf). The number of students who become lost during transferring can be both a waste of talent and failure of both the community college and higher educational missions (Sessions, 2006). The general or liberal arts degree programs at most community colleges have been created for students to complete their first 60 credit hours of coursework. But upon entering four-year institutions, these transfers may still need to complete part of a general education curriculum in order to fulfill institutional requirements for graduation (Monk-Turner, 1998).

Presently, in Alabama STARS benefits both two-year and four-year institutions by providing useful transfer guides for students. These transfer guides not only assist students with transferring, but also with those requirements needed for earning an associate degree from any Alabama community college. Like most Alabama community colleges, Shelton State Community College adheres to the State Board of Education Board requirements for earning an associate degree. Community college credit such as English
composition, history and introductory courses in psychology and sociology are and have been easily transferred to public four-year colleges. One on-going problem student’s have faced upon transfer is that many community colleges in the state will count technical and non-articulated courses as general education core electives in occupational programs such as office administration and cosmetology towards degree requirements for an associate degree. Many four-year public institutions within the state will not transfer technical courses as electives hours or as earned credit hours towards a student’s major. Further, due to aligned associate degree requirements, associate degree seeking students at community colleges are only required to meet the general education requirements for earning a degree; and some courses completed within area V toward degree requirements may not be considered as STARS-approved transfer courses.

Completion of the associate degree from an Alabama community college does not guarantee that all courses taken towards an associate degree will transfer. For those students who earn an associate degree at a community college or for those who transfer, one of the most important-if not most frustrating-questions that community college transfer students ask is related to the value of their completed coursework (de la Torres, 2007). Many students have lost hard-earned credits often because they did not have the accurate needed information for which courses will transfer. This study will examine the impact that STARS
has had in assisting students at Shelton State Community College (SSCC) with transferring STARS-approved hours to public four-year state institutions.

**Purpose of the Study**

The focus of this study is associated with STARS-articulated courses students completed at SSCC before and after the articulation program was created. Further, this study is intended to determine if the number and appropriate transferable courses towards a student’s major post STARS have increased since program implementation. Data will be analyzed from randomly selected SSCC associate degree graduates before and after the existence of STARS.

**Research Questions**

The research questions answered by this study include:

1. Are students completing more STARS-approved hours after the adoption of STARS than before the adoption of STARS?

2. Does ethnicity have an effect on STARS-approved hours completed for transfer?

3. Does gender have an effect on STARS-approved hours graduates complete for transfer?

4. Is there a correlation among student type (traditional and nontraditional) who complete STARS-approved hours for transfer?

5. Does cumulative grade point average (GPA) have an effect on the number of STARS-approved hours completed for transfer?
6. Does student status (reverse transfer, transfer, or native) have an effect on the number of STARS-approved hours completed?

**Justification of the Study**

In October of 2005, the United States Government Accountability Office (GAO) conducted a study designed to examine:

1. How postsecondary education institutions decide which credits to accept for transfer;
2. How states and accrediting agencies facilitate the credit transfer process;
3. The implications for students and the federal government concerning students’ inability to transfer credits.

The GAO discovered that when determining which credits should be accepted from transfer students, receiving institutions were often consistent when considering the sending institution’s accreditation status, in determining whether academic transfer agreements with the institution existed, and with the comparability of coursework taken by the student. But, the GAO discovered that, in most cases, the institutions varied in how they evaluated and applied a student’s transferable credits (Sessions, 2006).

Student transfer data reporting and maintenance has been challenging in terms of tracking transfer students. States many times do not maintain appropriate data on their transfer students. Cohen (1990) stated that there are two main reasons for this lack of information.

1. Administrators at the community college level fear unfavorable comparisons will be made between their students and native students of select universities.
2. Funding for public community colleges is based on the number of students taking courses without regard to associate degree graduation rates or intentions of students to pursue higher education.

Limitations of the Study

This study was limited to associate degree graduates from SSCC. These results were not derived from a representative statewide sample of community college students who earned associate degrees. For example, the data were limited to the following variables: (1) age at the time of graduation, (2) gender, (3) ethnicity, (4) total STARS-approved hours for transfer, (5) student status, and (6) GPA. Also, generalizability of the results may be limited to SSCC graduates during the specified time frame. Further, SSCC requires that all associate degree-seeking students who plan to transfer download a STARS contract and follow the transfer agreement through the advising process to ensure that courses taken will transfer to a public Alabama four-year institution. Academic advisors are also encouraged to utilize STARS while advising associate degree-seeking students and the College lists STARS transfer information in its college catalog and website. Still, there was no way of knowing if students actually consulted STARS while taking courses at SSCC.

Interaction of history and treatment effects could also present a limitation. Since students change majors while in college, it may be difficult to generalize beyond the proposed time period of the study. Lastly, another limitation of the
study was that the researcher who conducted the study had some type of involvement with STARS due to employment at a two-year Alabama community college.

**Definition of Terms**

*Articulation Agreements:* According to Anderson, Jeffery, and Alfonzo (2006) can be defined as the principle instruments to facilitate the transfer process. Specifically, articulation agreements serve to negotiate the requirements for student movement from one institution to another institution and support the transfer function.

*Associate in Arts (AA) and Associate in Science (AS) Degree:* The Jefferson State Community College website defines an AA/AS degree as a university parallel degree track designed to prepare students for transfer to senior institutions in order to pursue a bachelor’s degree.

*Bachelor of Applied Science (BAS):* Is the designated degree for flexible baccalaureate programs that are designed to accommodate the unique demands for entry and advancement within specific workforce sectors (Bloomberg, 2007).

*Community College:* Vaughn (2000) defines a community college as any institution accredited to award an associate degree as its highest degree.
Credit Hour: The standard unit for figuring college credit. (http://www.jeffstateonline.com/advising_center/advising_online/college_terms.htm)

Degree audit: Is a computer-generated analysis that enables the student and his/her advisor to assess the student's academic progress and unfulfilled baccalaureate, associate degree, or minor requirements. The audit is a valuable tool for academic planning and course selection, because it matches the courses that the student has taken with the requirements of his/her degree program or anticipated program (http://www.psu.edu/dus/handbook/daudit.html).

Developmental Course: A skill-building course in reading, writing or math that prepares students for freshman-level English and math. (http://www.jeffstateonline.com/advising_center/advising_online/college_terms.htm)

The Family Educational Rights and Privacy Act (FERPA): (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.
First generation student: London (1996) defines the first generation student as a student who attends a community college and whose parent(s) have not obtained a degree.

Junior College: The American junior college can be defined as an institution offering two years of instruction that is strictly collegiate grade. The junior college is likely to develop a different type of curriculum suited to the larger ever changing civic, social, religious, and vocational needs of the entire community in which the college is located (Dudziak & Tyler, 1994).

Lifelong learning: Kintzer in 1996 used the term continuing education as a synonym for lifelong learning. Kintzer described these types of programs as accommodating the various needs and interests of citizens.

Major: An academic area of specialization chosen by the student.

(http://www.jeffstateonline.com/advising_center/advising_online/college_terms.htm)

Native Student: Student who began their educational studies at a four-year institution and have not transferred to another institution of higher education (Carlan & Byxbe, 2000).
Non-traditional Student: Quality Research International defines generally a non-traditional student as an older student, over the age of 24.

Program of Study: Is a sequence of specific and general courses that are geared toward teaching technical, career, and academic skills to students with different abilities and goals who are pursuing transfer degrees, AAS degrees, long-term and short-term certificates (Spencer, 2008).

Reverse transfer: Wassemer, Moore, and Shulock in 2004 defined reverse transfer as students who begin their education at a four-year institution but later transfer to a community college.

Transfer: Kintzer and Wattenburger in 1985 defined transfer as the mechanics of credit, course, and curriculum exchange.

Transfer Courses: Non-developmental courses for which four-year colleges will accept as meeting degree requirements.

(http://www.jeffstateonline.com/advising_center/advising_online/college_terms.htm)

Transcript: A student's permanent record of courses taken and grades received.

(http://www.jeffstateonline.com/advising_center/advising_online/college_terms.htm)
Transfer Student: Solomon (2001) defines the community college transfer student as one who prior to entering the four-year college or university, has completed at least one full semester’s work at a two-year college.

Two Plus Two Concept: The underlying assumption is that students will follow the "2 plus 2" path, earning an associate’s degree then transferring (Anderson, Sun, & Alfonzo, 2006). The university parallel programs are sometimes referred to as the “2 plus 2” concept. This means that a student will complete two years of study at a community college before transferring to a university in the United States (http://www.facts.org).
CHAPTER II

REVIEW OF LITERATURE

The American Community College

Chapter I provided background information and a theoretical framework for the study which included the statement of the problem, significance of the study, purpose of the study, research questions, hypothesis and limitations of the study. This chapter will present a review of literature relevant to the study. The review of literature includes (a) history and overview of the American community college, (b) community college mission, (c) the transfer mission, (d) open admissions, (e) transfer articulation background, (f) statewide transfer articulation, (g) an overview of various United States articulation programs, (h) emerging challenges in articulation, (i) use of the web and articulation, and (j) previous research and studies conducted on transfer articulation within the United States.

Community colleges are very complex institutions which serve a wide range of students and needs (Scott-Skillman, 1996). The American community college has been highly regarded for providing access to higher education for all students, including those from educationally disadvantaged backgrounds. Many students would never make significant progress in earning a baccalaureate
degree if it were not for the community college (Vaughn, 2000). The nation’s 1,100 public and private two-year colleges play a critical role in providing educational opportunities for a large, diverse population by educating over 10 million students enrolled in credit and non-credit courses (Laanan, 2003).

It is important to discuss the history and evolution of the community college in order to understand the institution as a whole. From the earliest incarnation of the American community college over a century ago, community colleges have been designed to offer instruction at the freshman and sophomore levels equal to a four-year university (Boswell, 2004). Galbert in 1981 described the evolution of the public community college as “the most significant development in American higher education during the twentieth century” (p.7). Deegan and Tillery in 1985 identified four developmental periods or what they called “generations” in the history of the community college:

Generation I-Extension of the High School (1900-1930)
Generation II- The Junior College (1930-1950)
Generation III-The Community College (1950-1970)
Generation IV-The Comprehensive Community College (1970-present)

*Generation I* - During the first generation of community colleges, many early supporters were presidents of many well known universities. Henry Tappan, of the University of Michigan, and David Jordan of Stanford University,
were all pioneers in the development of community colleges. Each of these
educators wanted to establish the junior college as a separate entity from the
university. It was the innovation of William Raney Harper that created
American community colleges in 1901 (Monk-Turner, 1998). Like Tappan,
Harper was more of a believer in the university rather than a proponent of the
junior college. After encouraging others to share his vision, Harper announced
his intention to offer post diploma courses. Joliet Junior College in Joliet, Illinois,
has been hailed as the first junior college under public support to provide two
years of college work to the small numbers of their graduates who sought studies
primarily for transfer (Quigley & Bailey, 2003).

Harper’s original plan for the community college went far beyond
dividing upper and lower level college divisions (Quigley & Bailey, 2003). In
Harper’s mind, he would limit access to upper division students who did not
belong there (Cain, 1999). His long range goal was to develop a system of free
standing two-year colleges that were associated with universities. These
affiliated institutions would take over the training of freshmen and sophomores.
This would allow the universities to concentrate on advanced studies and
research (Witt, 1994). Joliet’s courses were initially mixed in those of Joliet High
School, and by 1915 the junior college’s enrollment had grown to such an extent
that it necessitated the addition of a junior college wing (Vaughn, 2000).
**Generation II**- The second generation of the community college assumed that its identification with high school caused the community college to be viewed as inferior. During the second generation, schools abandoned the high school model, shifting from a secondary to a collegiate identity (Cain, 1999). Also during this era, several community college milestones took place. The GI Bill of Rights was passed in order to provide financial assistance for veterans of World War II who aspired to pursue higher education. This bill provided student aid to students on a large scale, helping to eliminate economic and social barriers of attending college (Vaughan, 2000). Also, the Truman Commission Report was published calling for the establishment of a network of public colleges that would charge little or no tuition, serve as cultural centers, and be comprehensive in their program offerings with an emphasis on civic responsibilities and service to the area in which they are located. The report of higher education stressed the need for free public two-year community colleges to be established throughout the United States (Quigley & Bailey, 2003).

**Generation III**- The term junior college during this time was applied more often to lower division branches of the private university and to those two-year colleges which were supported by churches or organized independently. Community colleges were considered institutions that offered programs and were comprehensive and publicly supported (Cohen & Brawer, 2003). The substantial broadening of community college programs developed during the
1960s. Several states converted specialized vocational and technical schools into comprehensive community colleges (Cain, 1999).

College leaders during these years reflected the over broadening array of functions the two-year institutions were adopting (Puyear & Vaughan, 1985). By the 1960s, the community college had entered its golden era. Across the nation, state legislatures voted for funding and the creation of a statewide system. Through the Facilities Act of 1963, communities were given the opportunities to construct new campuses and expand facilities (Vaughn, 2000). Also local control was adopted during the third generation, and elements were adopted that the community college still identify with its current missions today (Cain, 1999).

*Generation IV*- By the fourth generation, the community college became comprehensive (Dudziak & Tyler, 1994). The mission of the community college shifted by the latter half of the 20th century into a comprehensive institution. With this shift, the community college expanded its mission by offering a mix of vocational, remedial, adult education, and liberal arts programs (Wassemer et al., 2004). Melissinos (1993) noted that community colleges share the common ideal of comprehensiveness in their mission statements. Today, it is estimated that approximately half of all students who enter postsecondary institutions will begin their studies at a community college (Vaughan, 2000). There is evidence that these numbers are on the rise, especially given the emphasis on transfer to four-year institutions (de la Torre, 2007). In addition, many students who are
eligible to attend four-year institutions are choosing to attend community colleges with proven transfer rates because of their low cost, small class size, and student-centered faculty (Kim, 2001).

In the fourth generation, community college leaders expanded the outreach of community colleges to attracting new students and programs by reaching out to untapped sectors of the community. Diverse outreach efforts to high schools, senior citizens, and prisons were prevalent during the early stages of the generation which continues today. As a result of these outreach efforts, massive increases in enrollments occurred with the use of technology and with the expansion of distance education that have blurred boundaries of college service regions through computer-based courses (Vaughan, 2000). Also, with the rise of vocational education and economic development missions, community colleges have attracted older, part-time students who are employed (Rosenfield, 2001).

Diversity among community college students can be associated with its fourth generation of development. The modern community college is a multifunctional, multi-mission, open admissions institution that must be flexible enough to serve the diverse needs of its community (Donovan et al., 1987). Community college students have been described as a heterogeneous population within which extremes of all demographic variables can be found (St. Clair, 1993). Two-year colleges enroll the highest proportion of students of color, new
immigrants seeking educational opportunities, and part-time, commuting students who have full or part-time jobs while pursuing an education (Boswell, 2004). Due to the comprehensiveness of the community college’s diverse student body, more students need costly remediation before they can embark on college-level work (Seater, 1995). The majority of community college students tend to be female, and 49% of all minorities began their quest for higher education studies at a community college (Dudziak & Tyler, 1994).

Several milestones were also accomplished during the fourth generation. The Hope Scholarship and Lifelong Learning Tax Credit were created to provide tax breaks for students. The Workforce Investment Act was created to the federal government’s role in job training, adult education and vocational rehabilitation. The Carl D. Perkins Act was also passed, offering major federal commitments to vocational and education activities (Vaughan, 2000).
First Community College: Joliet Junior College

1901-1910

1991-2000

Figure 1.1

Community College Growth by Decade
Source: The American Association of Community Colleges
Mission of the Community College

Several options, from pursuing postsecondary education to obtaining employment, exist for students graduating from high school. Among those opportunities are four-year and two-year colleges. Community colleges generally provide students with the specialized skills and technical knowledge needed in order to gain employment (Miller & Mupinga, 2006). Questions and concerns about the community college’s mission have recurred throughout the history of the community college (Dougherty & Townsend, 2006). Two-year colleges are usually easily accessible within the community and are conveniently positioned to serve as a focal point for educational partnerships (Floyd, 2006).

The original mission of the community college was to provide local communities with additional educational and training resources beyond the secondary school system. Vaughan (2000) defined the community college’s mission as providing access to postsecondary education programs and services that lead to stronger, more vital communities. The community college’s main contribution has been expanding access to postsecondary studies for millions of students who would otherwise not have the opportunity to participate in higher education (Townsend & Twombly, 2001). Vaughan (2000) maintains, however, that the missions of most community colleges are shaped by the following commitments:

1. Providing a comprehensive educational program;
2. Serving the community as a community based institution of higher education;
3. Teaching and learning;
4. Fostering life-long learning;
5. Lastly, providing open admission for fair and equal treatment of all students.

Transfer Mission of the Community College

In order to fulfill one of its many missions, a great majority of the nation’s community colleges offer transfer programs through its teaching and learning mission where students can complete their first two years of college. Students enrolled in community college transfer programs take courses that are almost identical to those they would take at a four-year college or university (Vaughan, 2000). Most community college systems in the United States began with a primary mission of promoting transfer education (Wassemer et al., 2004). Academic transfer or collegiate studies were meant to fulfill several institutional purposes—a democratizing pursuit function of conducting lower division courses for the university (Cohen & Brawer, 2003).

Transfer programs have been a part of the academic landscape at the postsecondary level since the inception of the junior college in the 1900s (O’Meara, Hall & Carmichael, 2007). But towards the end of the century, with succeeding waves of democracy having swept the nation, new attitudes towards higher education began to arise (Solomon, 2001). On the surface, being prepared by the community college for transfer to a four-year institution for bachelor’s
degree attainment seemed overpowering (Solomon, 2001). During the 1960s, transfer among colleges became popular. Senior institutions begin to give serious attention to junior-senior college articulation. In general, senior college admissions officers saw five recurrent problem areas:

1. Little data reporting was available to determine proper GPAs for transfer admissions;
2. The rapid emergence of new community colleges that had not been accredited presented a problem of how much of which credit should transfer under what conditions;
3. Variations in university department requirements complicated the establishment of uniform credits for studies involving skills and specific knowledge;
4. Transfer raised an issue concerning how much credit a university should honor from two-year colleges;
5. Community experimentation in programs and courses while commendable caused difficulties for senior institutions in establishing equivalencies and course placement (Menacker, 1975).

As functions of the community college expanded, so did the percentage of enrolled students transferring to four-year institutions decline. Recent studies estimate the current national transfer rate to be between 20-25% (Wassemer et al., 2004). However, within the last ten years, there has been a strong interest in the community college transfer mission. For various reasons, state governments have encouraged students who are eligible to attend state universities to begin their higher education studies at a community college and then transfer. This saves states a considerable amount of money during times when university enrollments have been sharply rising, but state finances have been badly battered by a stagnant economy (Dougherty & Kienzl, 2006). Some colleges have
established transfer centers or enlisted the support of faculty and staff committed to the community college transfer mission to help ease the stresses of student transfer from one institution to another (Tobolowsky, 1998).

Three or so decades ago, the typical community college transfer student was a recent high school graduate whose goal was a baccalaureate degree. These students enrolled in a two-year institution for one or two years after high school or until he or she completed lower division work. Such students visually decided on their program of study and the institution to which they intended to transfer by the time they began at a two-year college. At the same time, many of these students made steady progress in a “2 plus 2” program and completed their baccalaureate degree program in two to three years (Knoell, 2006).

Expansion of the community college curriculum into non-collegiate programs took its toll on the traditional transfer curriculum, and the image of the community college suffered the most. Emphasis on the liberal arts and transfer gave way to career, compensator, and community education, leading many to question the viability of the transfer function (Wallace, 1994). All junior colleges, whether emerging from secondary schools or the restructuring of four-year institutions, made a commitment to ensuring that students had coursework and programs available for transfer to a senior institution (Dudziak & Tyler, 1994). The community college curriculum was designed deliberately to be almost identical to the curriculum of lower division university courses, enabling the
student to receive the first two years of undergraduate education and an associate degree at a community college (Melissinos, 1993).

When community colleges fail to take a proactive approach to providing students with essential information on transferring, few students actively seek out the information themselves. These students simply do not know where to begin, or they are unaware that they need to begin planning for transfer as early as possible (Donovan et al., 1987). Many times students at community colleges are the first generation in their families to attend college and are usually unfamiliar with academic culture. First generation community college students are at greater risk of not transferring to a four-year institution due to the overwhelming exposure of new ideas and lifestyles. These students become alienated from family and the support needed to achieve this goal (Doyle, 2006).

Although many community colleges offer, and or require, new student orientation or an introduction to the college course, most do not identify specific information to help students plan for transfer (Piland, 1995). Potential community college transfer students are also often inadequately advised. At many large community colleges, students register just before classes begin and faculty advising at two-year colleges is rarely comprehensive (Wechsler, 1989).

Much literature notes that when attending a two-year rather than a four-year institution the likelihood of a student obtaining a bachelor’s degree, is lowered thus placing the burden on the community college (Piland, 1995).
Further, efforts to understand the issue of community college transfer are complicated by the variety of transfer patterns. In addition to the traditional vertical transfer to a four-year university, community college students transfer to other community colleges and to private institutions. Further, students who are enrolled in high school complete courses at community colleges through dual enrollment programs and transfer these courses to four-year institutions. In addition, there has been an increase in reverse transfer students (Wassemer et al., 2004).

The transfer function in community colleges has long been viewed as a stepping stone to educational upward mobility (Laanan, 2003). Moreover, transfer is generally considered the most prestigious function as it serves to position the community college in the graded system of higher education (Higgins & Katsinas, 1999). Cedja and Kaylor (2001) noted that the traditional concept of transfer connects a prescribed sequence of lower division courses at the community college with upper division courses at four-year institutions.

Transfer preparation is important in the community college’s role of higher education because it affirms the community college’s mission to a collegiate, academic identity and to a role in broadening access for those historically excluded from a college education (Bradburn, 2001). The changing pattern of the community college transfer student represents both a challenge and an opportunity. During their first two years of education, tremendous
opportunities to provide articulated associate degree programs and support services are available to ensure that students are successful in transferring (Barkley, 1993).

The transfer function is still considered one of the most important functions of American community colleges. Roska (2006) has noted that low educational attainments among community college students have been extensively noted when transferring. Many students enter community colleges for short periods of time and complete only a couple of courses that will transfer towards their perspective major (Vaughn, 2000). Palmer (1994), in contrast, found that 75% of students completed at least 48 semester hours at a community college before transferring to a four-year institution. A more recent study in 2003 by the U.S. Department of Education found that the national average for transfer rates from two-year to four-year institutions was 28.9% (Anderson et al., 2006). In 2003, the Department of Education also noted that only about half of the community college students who transfer to a four-year institution eventually succeed in earning a bachelors degree (Handel, 2007).

In contrast, Vaughn (2000) noted that upon transferring, community college students perform as well or better than native students. More recent studies suggest that once community college students successfully transfer to a four-year institution, they graduate at the same rate as students who begin at
four-year colleges and attain job status and earnings equal to those students who started at and graduated from four-year institutions (Rifkin, 1998).

To combat the poor rates of transfer, many entities have formulated policies to ease the transfer process. Most community colleges have agreements with universities to ensure the acceptance of freshman and sophomore credits (Floyd, 2006). At the state level, mechanisms to support the transfer process have included raising standards in community college courses, enhancing transfer systems and recommending open admissions between two-year and four-year colleges. According to several published reports and research articles, articulation agreements contribute to improved transfer rates with the same expectations of states that have adopted mandatory articulation agreements. These agreements have become more popular as state legislatures and higher education coordinating boards have become increasingly involved in creating and adopting articulation agreements in order to assist with community college transfer.

The Open Admissions College

No institution in higher education has made the commitment to open access more than the American community college (Puyear & Vaughn, 1985). Laanan in 2003 noted that a distinctive characteristic of community colleges is that they serve a unique clientele. Access has been a major theme in higher education. Since the end of World War II, community colleges have been at the
center of promoting universal higher education. Two-year colleges, however, have not always been an open access institution. Three events—the passage of the GI Bill, Civil Rights Movement and federal commitment to increasing financial aid for higher education—not only provided access for students but also a means for providing financial support for students in obtaining higher education (Vaughan, 2000).

The open door policy of the community college has indeed opened doors to a broad spectrum of the populace, resulting in a student population that is more heavily working class, minority and female than that of four-year institutions (Shaw, Valadez & Rhoads, 1993). The open door policy was created for several reasons, including the American ideal of an open society where every person is given a chance to move between classes regardless of economic condition at birth. Another reason was the democratic ideal of a learned populace taking an active role in civic affairs, industrialization’s need for well trained employees and businesses desire to have their employees trained at the public’s expense (Hendrick, Hightower, & Gregory, 2006).

**Background on Transfer Articulation**

From the beginning of the two-year college movement, agreements have existed between two-year and four-year colleges concerning the transfer of credit. Over the years, these agreements have been replaced with formal,
documented agreements and between single institutions that cover course equivalencies, program and curriculum articulation (Colby & Hardy, 1988). Articulation received a boost about the time of Sputnik when a national committee was created by the American Association of Colleges. In 1958, a joint committee on junior and senior colleges was established when the American Association of State Colleges jointed the committee. Thus, the committee developed guidelines necessary to facilitate the transfer of students from two-year colleges to four-year colleges (Wallace, 1994).

At the start of the 1970s, there was almost no state involvement in transfer articulation. State level interest in articulation and transfer has increased since the mid 1980s, largely because of increasing perceptions held by our nation’s leaders as well as the general public that a better education populace is necessary for everyone (Townsend & Twomby, 2001). By the mid 1990s, all 50 states had some form of a higher education coordinating authority and were actively promoting integrated articulation programs that were unique (Mosholder & Zirklee, 2007).

The traditional approach to articulation involves faculty and staff at four-year institutions reviewing courses and programs from feeder community colleges. Faculty and staff decided the transferability of courses that may count as elective credit or in satisfaction of particular general education or major requirements. The process works best for recent high school graduates who
enroll in one community college and transfer without a significant lapse in time (Knoell, 2006). Many states have enunciated formal and precise articulation agreements. Many community colleges fund specialized services for transfer students while other states require colleges to collect and report data on transfer students. In some states, transfer remains voluntary while other states make it mandatory. Oregon, for example, requires its state board of higher education to ensure that students who earn an associate degree meet the lower division general education requirements for four-year institutions (Robertson & Frier, 1996).

The changing patterns of the community college transfer student represent both challenges and opportunities. As more traditional students turn to local community colleges for the first two years of education, there are tremendous opportunities and support services to ensure that students are successful in transferring (Barkley, 1993). Much literature has indicated that greater numbers of students transfer prior to actually earning an associate degree, which is a strong implication for articulation (Rifkin, 1998).

Articulation between community colleges and four-year institutions provides a framework that connects curriculum and transfer (Mellissinos, 1993). Transfer and articulation policies have grown more complicated as higher education has developed into a complex network of federal and state agencies, accrediting bodies, administrators, faculty and staff. Initially, the articulation
process was simple. A student graduated from high school, matriculated to the junior college, and then to the university, with a vertical progression towards a bachelors degree. Students would take their first two years of an undergraduate degree at these institutions. It was the vision and hope of both two-year college founders and university supporters that students would complete an associate degree before transferring to a four-year school. Completion of the first two years was certified by the associate in arts degree or more specialized associate in science degree, depending on the student’s program of study (Townsend, 2001). Further, many community colleges and four-year colleges assume that students understand transfer policies (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf).

Students who seek to transfer from one institution to another need to know which institutions will accept their coursework and which credits will transfer. The answer lies with statewide transfer and articulation policies (http://www.ecs.org.html/issue.asp). Institutions may have bilateral agreements with other institutions for transfer of credit related to highly specialized majors, along with state mandated transfer agreements. Agreements are usually based on specific program requirements that are not covered by statewide agreements. Community colleges situated near four-year colleges and universities are more likely to offer transferable courses throughout the curriculum, especially those who have strong articulation programs between
local community colleges and universities (Melissinos, 1993). Bilateral agreements, however, are limited particularly to the two-year institutions that established them. Statewide agreements, on the other hand, typically include all public two-year and four-year institutions in the state. Statewide articulation agreements establish transfer policies and procedures that enable students to move more smoothly from one institution to another by receiving credit for prior work. Despite the method, these efforts help clear paths through the transfer process because they provide clear transfer information which eliminates delays in program completion (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf).

In an effort to avoid penalizing students who do not have standing articulation agreements with detailed procedures for gaining course approvals, equivalency guides have been created. Documentation has been written into legislation for governing higher education in states. State officials have several reasons for encouraging transfer from the community college. First, community colleges enroll masses of students who would not otherwise qualify for admission to state universities at the freshman level. Because community colleges typically enroll a larger percentage of disadvantaged and minority students than other higher education institutions, expanding transferability from two-year to four-year institutions have also expanded access among underrepresented groups (McMahon, 1997).
It is important to mention that transferability of courses is determined by the receiving institution—the university. The process of transferring varies and differs from state to state and community college to community college (McQuay, 2000).

Standard, traditional liberal arts courses such as Introduction to Psychology, Calculus and General Biology generally do not encounter difficulty in being transferred and usually receive the best evaluation or direct equivalencies. Since these courses are similar in content, the scope and perspective to courses offered at a senior college fit neatly into the overall curriculum sequence of the particular bachelor’s degree program. Further, interdisciplinary liberal arts courses offered by community colleges encounter transfer of credit problems, since they usually reflect new and creative arrangements of knowledge that differ from traditional liberal arts courses offered by a senior college. Examples of courses could include Humanism and Technology, Biology and the Law which do not match traditional curricular offerings and are often not evaluated as direct equivalencies as fulfilling degree requirements at a senior college. (Bowles, 1988)

Articulation agreements can ease the confusion of course equivalency. General education degree requirements at four-year institutions can, and do, vary from institution to institution, and the same course may not be applied the same way at different institutions (Rifkin, 1998). Despite the number of articulation policies aimed at helping community college students transfer to four-year institutions, many students enrolled in transfer oriented programs either do not pursue a bachelors degree or experience problems in the process (Rifkin, 1998). The Education Commission of the States (ECS) notes that if articulation programs are not in place, students often fall through the cracks and
never complete their education. Most states still do not have streamlined programs written into legislation. Some mandate that associate and baccalaureate degree granting institutions are equal partners while others have created committees or commissions in order to establish procedures for transfer (Cohen, 2003). Articulation agreements can be arranged on an individual institution basis without any state coordination articulation database. Two year and four-year institutions that negotiate arrangements on an individual basis spend a lot of time and money keeping track of numerous articulation agreements. For example, in Maryland, community colleges have individual articulation agreements with more than twenty local and regional four-year institutions at the system level. This often presents problems for students. Courses accepted for transfer for one institution might not be accepted by another, or courses accepted at one point may not be accepted later when curriculum requirements change (Rifkin, 1998).

Articulation agreements are often designed with traditional, steady, and straightforward steps with the high school to community college to four-year college model in mind. Sometimes difficulty can occur when accommodating irregular course taking patterns (Rifkin, 1998). Articulation agreements often times will specify the courses that a two-year college may not offer rather than those they must provide (Cohen & Brawer, 2003). Institutions that are a part of statewide agreements for the transfer of core curriculum credits may have
bilateral agreements with other institutions for the transfer of credit related to highly specialized majors. These are usually based on specific program requirements that are not covered by statewide agreements. Statewide agreements typically include all public two-and four-year institutions located within a state (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf).

The National Center for Educational Statistics (NCES) has found that 30 states have some form of legislation, 40 have cooperative agreements, 33 mandate transfer data reporting, 18 provide incentives and rewards, 26 have statewide articulation guides, and 23 have common course numbering. Eight states, including Florida and Texas (among the larger population states), have common course numbering (www.nces.org). With data obtained from U.S. Department of Education, NCES and the Integrated Postsecondary Education Data System (IPEDS), and The Educational Commission of the States (ECS) created a table outlining the transfer and articulation policies in public two-year institutions, Figure 2.1 (http://www.ecs.org/clearinghouse/23/75/2375.htm).
Table 2.1. Transfer and articulation policies, full-time-equivalent fall enrollment, and percentage distribution of enrollment in public 2-year institutions, by state 2000

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Notes: The information in this table is from the National Center for Education Statistics’ Integrated Postsecondary Education Data System (IPEDS). This information does not include enrollment data for states that are reporting 2000 data. Data from the U.S. Department of Education, NCES, 2000 Integrated Postsecondary Education Data System (IPEDS). "Fall Enrollment Survey" (IPEDS-FI:00).

Figure 2.1
Transfer and Articulation Policies, Full-Time-Equivalent Fall Enrollment, and Percentage Distribution of Enrollment in Public 2-Year Institutions, by State
California and Texas have both included private institutions in their comparative course number systems (de la Torres, 2007). Further, many community colleges participate in partnership programs with four-year institutions in order to promote transfer to their institutions. For example, The Transfer Alliance Program (TAP) promotes transfer between California Community Colleges and The University of California, Los Angeles (UCLA). The TAP partnership between San Diego City College and UCLA encourages transfer through participation in a joint honors program. One main purpose of TAP was to create a curricular articulation agreement between California Community Colleges and UCLA (Laanan, 1996).

When students transfer credit from one institution to another, they must make a written request stating that an official transcript be sent to the receiving institution. The receiving institution will then evaluate the transcript, by comparing and assessing those courses completed at the transfer institution to those at the receiving institution. The receiving institution will then make a determination of credit to be awarded towards degree or major requirements at the receiving institution. Meanwhile, the student may be asked to provide a course syllabus or course description to support the assessment of the receiving institution. Articulation agreements ease this process, since set criteria and standards are known for courses accepted for transfer (GAO, 2005). Figure 2.2 outlines the evaluation process for transfer credits.
Students who complete an associate degree or transfer to a four-year institution may face multiple obstacles in accruing a bachelor’s degree. Community college courses may be accepted only as hours completed by the transfer institution and
not applied towards a specific major or degree (Monk-Turner, 1998). In addition, four-year institutions sometimes ignore formal processes and change course equivalencies unilaterally. Courses accepted for transfer by one institution might not be accepted by another or courses accepted at one point may not be accepted later when curriculum requirements change. Another important note concerning transfer credit is that many community colleges will only award an associate degree in liberal arts or general studies, thus requiring that a student complete only general core requirements towards earning a degree. In the state of Alabama, a student could earn an associate degree from a community college, transfer to a four-year institution and many courses may not transfer towards the students major, but as credit hours earned. Also, some community college associate degree requirements allow for institutional technical course substitutions towards degree completion. STARS was designed to assist students with transferring, and obtaining which courses are needed while providing assurance that community college credits will transfer to a senior institution.

**Statewide Transfer Articulation Programs**

Research since the mid 1960s has demonstrated the relative scarcity of state support concerning the transfer function while emphasizing the importance of state support for student access to the full range of higher educational
opportunities (Welsh & Kjorlien, 2001). The process of articulation varies among colleges and universities and according to each specific program of study. Articulation agreements are the principal instruments to facilitate the transfer process. Specifically, articulation agreements serve to negotiate the requirements for student movement from institution to institution as it supports the community college transfer mission (Anderson, Sun & Alfonzo, 2006). Since community colleges are beginning to recognize the value of developing guaranteed admission processes with selected universities, the articulation process involves having a written agreement with selected universities to ensure that students entering the community college will have direct access to the university (McQuay, 2000). The influence of the state is an important aspect of the transfer and articulation process (Rifkin, 1996). Barkley, in 1993, noted that statewide articulation generally occurs in one or three ways:

1. It is provided through state mandated policies and practices;
2. It occurs through voluntary statewide and inter-institutional agreements;
3. It is provided through formal, legally based state policies.

Ignash and Townsend in 2000 provided seven guiding principles that were needed in order to establish strong articulation agreements. The seven principles included:

1. Parity among institutions- making community colleges and four-year institutions equal partners.
2. Parity of students-native and transfer students are equally treated by receiving institutions.
3. Faculty having primary responsibility for developing actual statewide articulation agreements.
4. Accommodating students who transfer without an associate degree.
5. Developing agreements to transfer program majors and minor courses.
6. Private colleges and universities participating in statewide agreements.
7. Data driven evaluations on statewide agreements.

Many policymakers and the general public assume that public community colleges in their states have worked out agreements so that students who earn an associate degree at a two-year college can enroll as juniors if they transfer to a four-year college. (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf). States such as Illinois, Florida and Washington have concrete programs in place to mandate that associate and bachelor degree granting institutions are equal partners in providing the first two-years of baccalaureate degree programs. Other states, such as Indiana, Mississippi and Maryland, have only created committees or commissions to establish procedures for transfer of students between the public segments of postsecondary education (http://www.ecs.org/clearinghouse/23/75/2375.doc).

According to the ECS, an ideal comprehensive statewide transfer and articulation policy would include an agreement between two-and four-year institutions on a common core of general education courses covering the freshman and sophomore years of postsecondary education. Students who complete the associate degree would be given full credit for courses taken
toward the general education requirements (http://www.ecs.org). The expansion of transfer and articulation agreements have occurred today as a consequence of efforts by various states to reform and reorganize education systems to meet the multiple demands of educating a vastly large and more diverse population for a highly complex economy (Robertson & Frier, 1996).

Articulation agreement information is vital for prospective transfer students since it ensures that the courses students complete at a two-year college will prepare them for the upper division demands that may be faced during the process of transferring (Laanan, 1996). Doyle in 2006 noted that in order to successfully complete a bachelor’s degree, students must complete three steps. First, they must navigate the community college and complete a significant number of courses to transfer. Second, they must make the transition to a four-year institution. Lastly, through a combination of community college course credits and those completed at four-year institutions, they must satisfy the requirements for a baccalaureate degree.

Overview of State Articulation Programs

Luckily, all states located in the Southern regions of the United States have developed some type of statewide policy for transferring credits. Nearly all Southern region states report improvements in the transfer process within the last ten years (http://www.sreb.org/main/Goals/Publications/
07E06_Clear_Paths.pdf). In 13 southern states, legislation has been enacted to create statewide transfer articulation policies to assist with transfer (http://nces.org).

**Articulation in Mississippi**

Mississippi does not have specific legislation related to transfer policies. The Mississippi Office of Community and Junior College Relations works with the Mississippi Board of Community and Junior College System (MSCJCS) to maintain all articulation agreements between state two-year colleges and universities. The MSCJCS website notes that articulation agreements serve only as a minimum course transfer agreement and are not intended to replace any individual articulation agreements between a particular community or junior college and university which would allow additional courses to transfer into a specific program of study (http://www.state.ms.us.cjc/). Mississippi outlines program-to-program transfer guides for credit hours that will transfer in each program area. Institutions are allowed and may accept more, but not less than the number of hours stipulated in the guides (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf).

**Articulation in South Carolina.**

On May 2, 1996 the Commission on Higher Education in South Carolina approved unanimously the statewide agreement on transfer and articulation.
The policy follows preface in form of the regulations and procedures for transfer. A statewide articulation agreement of 86 courses was approved by the South Carolina Commission on Higher Education for transfer from two-to four-year public institutions. Each course is applicable to all public institutions, including two-year institutions and institutions within the same system. In instances where an institution does not have identical courses to those on the list, it will identify comparable courses or course categories for acceptance of general education courses on the statewide list. Any student who has completed either an associate in art or associate in science degree program at any public two-year South Carolina institution will automatically be entitled to junior-level status or its equivalent at whatever public senior institution to which the student might be admitted (http://www.che.sc.gov/AcademicAffairs/TRANSFER/regs.htm).

Articulation in Illinois

In Illinois, the Illinois Transfer and Articulation Initiative (IAI) is the primary statewide vehicle for encouraging transferability among postsecondary institutions in the state. Planning for the initiative began in 1993. A General Education Core Curriculum (GECC) was implemented in the summer of 1998. One exception of the initiative is the IAI GECC which does not replace the college or university’s own general education curriculum, but rather provides a
guaranteed pathway for transfer. The IAI concentrates on articulation of general
education and foundational coursework at the lower division level
(http://www.ibhe.org/agendas/2006/October/ItemII-4.pdf). Illinois uses the
Course Applicably System or CAS to offer students a more accurate and detailed
information on how their coursework will transfer between institutions
CAS provides course equivalency information within a general education
common core format. Students are also allowed to view popular majors and
identify the common core that is applicable to that program (de la Torres, 2007).

Articulation in Ohio

Ohio has developed The Transfer Assurance Guide (TAG) of approved
courses that can be used by students, admissions officers, counselors, academic
advisors, registrars, and other college and university personnel in the transfer of
credits process by identifying equivalent TAG approved courses at Ohio public
institutions of higher education (http://regents.ohio.gov/transfer).
TAG is a transfer module or set of courses that are approved by the Ohio Board
of Regents to provide a standard set of general education courses in selected
academic disciplines (Abowitz, 2006). Users can search for more than 3,700
approved courses within majors that are guaranteed to transfer and determine
how specific courses will transfer from one university to another. The TAG
includes the Ohio Transfer Module of both required and elective courses and then moves beyond those courses into additional hours in pre-major and major courses and are guaranteed to transfer and apply directly to the students transfer major (http://regents.ohio.gov/transfer).

**Articulation in Florida**

Palinchak (1998) in *Articulation Florida Style* described articulation in the state of Florida as “unique to institutions of higher education learning in particular the community college” (p. 17). The State of Florida established into law a Statewide Articulation Agreement in 1971 and has since adopted a number of additional policies to assist students with smooth transitioning between community colleges and four-year colleges and universities. In 1973 the Articulation Agree Rule 6A-10.024 of Florida Administrative Code formally established its articulation agreement called Florida’s Academic Counseling and Tracking for Students (FACTS), between and among state universities and community colleges. The rule calls for all public institutions of higher education to recognize the integrity of one another’s general education programs (http://www.facts.org/cgi-bin/eaglec.htm).

Florida’s postsecondary education system includes a “2 plus 2” articulation through which students can earn an associate degree within two years or 60 credit hours at a community college and the remaining courses
towards degree completion are taken at a university. Ideally, the states articulation agreement had in mind that most community college students who transfer to a state university with an associate degree would only need to take an additional 60 credit hours on the university level in order to obtain a bachelors degree (http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/19/38/d0.pdf).

In Florida, a statewide course numbering system that facilitates transfer of students among Florida’s postsecondary institutions is being utilized. Credits that are awarded must satisfy the requirements of the receiving institution as if the student completed courses at the receiving institution (http://www.facts.org/cgi-bin/eaglec.htm). The “2 plus 2” concept is an important element of Florida’s articulation history since 28 community colleges serve as feeder institutions for the university’s four-year college system (http://data.fldoe.org/ccdir/colleges.cfm). The majority of the system’s community colleges were conceived and built as two-year upper level institutions designed primarily to receive lower division students (Prager, 1998). Florida’s community colleges play a significantly large role in educating students since over 50 percent of upper division students in the state’s public four-year universities began at a community college (Bueschel & Venezia, 2006).
Articulation in Arkansas

In Arkansas, Act 672 in 2005 directed the Arkansas Higher Education Coordinating Board to implement a transfer curriculum for all public colleges and universities in the state, effective December 1, 2006. The Arkansas Course Transfer System (ACTS) contains information about the transferability of courses within Arkansas public colleges and universities. Students are guaranteed the transfer of applicable credits and equitable treatment in the application of credits for admissions and degree requirements. Students may complete specified general education courses anywhere in the public system as well as many courses in the degree or major that have been pre-identified for transfer (http://acts.adhe.edu/).

ACTS provides information regarding the guarantee of transfer of courses between Arkansas public institutions. ACTS is beneficial to students, parents, and academic advisors because it provides accurate, up-to-date comparable course information for educational planning and informed decision-making. A drawback of the articulation system is that the transferability of courses taken prior to January 1, 2007 are accepted at the discretion of the receiving institution (http://acts.adhe.edu/studenttransferinfo.aspx).
Articulation in Colorado

Colorado’s articulation program, GtPATHWAYS, is administered through the Colorado Commission on Higher Education. The Commission’s mission is to facilitate a simple statewide transfer process, including: 4.01.01 ensuring that state-supported two-year and four-year institutions provide native and transfer students equitable treatment in assisting to meet their educational goals. The transfer policy is based on statutory authority of Colorado Revised Statute 23-1-108 (7) (a); C.R.S. 23-1-108.5; C.R.S. 23-1-125; and C.R.S. 23-60-802. Sections 5.01, 5.02, and 5.03 describes three options for students seeking to transfer among Colorado’s public institutions of higher education: those students who transfer to four-year institutions after completing an associate in art or associate in science degree from a two-year institution, those students who transfer statewide guaranteed general education courses among any Colorado public colleges or universities; and those who transfer credits earned at area vocational schools (http://highered.colorado.gov/Publications/Policies/Current/i-partl.pdf).

GtPATHWAYS applies to all Colorado public institutions of higher education, and there are more than 500 lower-division general education courses in 20 subject areas approved for guaranteed transfer. Upon transfer to any public college or university in Colorado, students can transfer up to 31 credits of previously and successfully completed gtPATHWAYS (general
education) coursework. These courses will automatically transfer and will count towards general education core or graduation requirements for any associate or bachelor’s degree program (http://highered.colorado.gov/Academics/Transfers/gtPathways/default.html).

**Articulation in California**

The state of California established what probably is considered as the first articulation system in the 1920s (Mosholer & Zirklee, 2007). California boasts the nation’s largest two-year college system and one of the best community college transfer rates and has been a leader in encouraging students to start their college careers at two-year schools and finish up at four-year institutions largely because of overcrowding at senior institutions (Stephens, 1998). The Articulation Council of California acts as a liaison to the state’s higher education institutions to develop guidelines on program articulation (Robertson & Frier, 1996).

ASSIST or the Articulation System Stimulating Interinstitutional Student Transfer, has grown to include information about all public postsecondary educational institutions in California. In addition, it is the official repository of articulation information for California’s public colleges and universities. ASSIST is funded by the California state legislature, and its Board of Directors are made up of representatives from each of the public postsecondary educational segments, oversees development and establishes policy for ASSIST. The mission
of ASSIST is to facilitate the transfer of California community college students to California's public four-year universities by providing an electronic system for academic planning as the official repository of articulation information for the state (http://www.assist.org/web-assist/help/help-what_is_assist.html).

**Emerging Challenges Facing Transfer Articulation**

New issues serve as potential challenges to many articulation programs including articulation problems, such as states accepting lower division courses that have been completed while earning an associate degree. Finkel (2007) expressed that among the obstacles to be resolved concerning articulation is handling the courses that a university requires that are not offered by the community college. Florida, one of the top states in the nation in terms of degree production, has developed bachelor degree programs in the applied science and technical fields that build upon the associate degree at its state two-year colleges (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf). In 2006, the state of Florida had over 20,000 students enrolled in its bachelors of applied science program on community college campuses through concurrent and joint programs (http://www.fldoe.org/cc/students/PDF/taskForceReport.pdf).

Another challenge facing transfer articulation is what can be defined as the upside down degree meaning that community college students graduate
with an applied degree, rather than an associate degree. However, not all applied science degree (AAS) recipients wish to terminate their education after receiving their degree. Some seek to transfer to a four-year college and receive a baccalaureate degree. In many cases, when students who have earned an applied associate degree decide to transfer, they often find out that most of their degree credits will not transfer because the AAS degree requirements consisted primarily of courses in an applied field or technical concentration area. Many four-year colleges only have upper level or junior/senior courses in their areas and decline to accept two-year college courses that are considered lower division or freshman/sophomore levels in lieu of upper division courses in the major. Whereas, the transfer associate degree is almost entirely general education courses, the associate in applied science degree only requires very few general education courses. Therefore, an applied degree recipient would need to take additional general education courses in order to complete a bachelor’s degree (Townsend, 2001).

Statewide common course numbering by community colleges or four-year institutions to their feeder community colleges is one approach being utilized to simplify the articulation of courses. Common course numbering is a complex and expensive process that does not hinder the need for articulation of specific programs (Knoell, 2006).
Use of the Web and Technology in Articulation

The interest in database information systems pertaining to transfer students is particularly significant. Few institutions collect data concerning two-year college transfer students, and two-year colleges usually do not know the academic fate of their students once they graduate or transfer (Wechsler, 1989). Just less than twenty years ago, studies and research argued that the viability of the transfer function of the community college is jeopardized because few databases at the state and system levels have been established to facilitate student tracking from program to program or from institution to institution on through the attainment of the baccalaureate degree (Welsh & Kjorlien, 2001).

Wallace in 1994 noted that the goal of a computerized articulation system is to restore confidence to the transfer function of the community college for students who plan to seek a baccalaureate degree. Luckily, state higher education agencies have envisioned a wide array of databases and information systems that are devoted to transfer students. To save time, some institutions have developed databases to track previously approved courses in order to remove the need for re-evaluating course credits (GAO, 2005). Many states have customized their web based resources making transfer one important component of a larger, holistic component to higher education services (de la Torre, 2007).
Without a doubt, the key ingredient to strengthen the transfer process is early identification of deficiencies and accurate up-to-date student advisement. This can be managed by computerizing the equivalencies and maintaining a database system of college and university requirements (Barkley, 1993). Investment in technology has been an additional benefit in transfer articulation. Technology permits advisors at community colleges to better advise students with up-to-date information on what courses may be transferred to four-year institutions (Robertson & Frier, 1996).

Web based technology and the World Wide Web have greatly impacted the availability and use of information in the transition for community college transfer students. An emerging demographic trend is the web for information and guidance in the transition from two-year to four-year institutions. Fortunately, state higher education systems across the country recognize this trend by making useful information available via the Internet (de la Torre, 2007). Maryland’s interactive online transfer information source, ARTSYS, allows students to find course equivalencies between institutions, evaluate transcripts, search for majors, and explore transfer programs. In addition, it provides faculty access, up-to-date courses and course equivalencies (GAO, 2005).

In 1985, the University of California began to explore computers to store, maintain, and display transfer-related data. The state’s goal was to use the computer to provide students and counselors with an easy way to access
accurate and complete information about transferring from one California college or university to another. The initial project, with a small number of colleges and universities participating, was evaluated and approved (http://www.assist.org/web-assist/help/help-what_is_assist.html). The ASSIST website provides comprehensive information about course articulation agreements between community colleges, California State University, and The University of California Systems. ASSIST also provides financial aid, scholarship information and a database system that is large enough to provide transfer and articulation information from all California colleges and universities (Barkley, 1993).

ASSIST provides access to accurate and comprehensive information on transfer alternatives, a means of determining the transferability of courses; access to a student’s individual progress toward satisfying requirements for transfer and a way for identifying specific courses that may be taken in lieu of requirements (Robertson & Frier, 1996). The state also has a California Articulation Number System (CAN) website which provides information on common course numbering at community colleges and their applicability in the California State University System as well as private, independent institutions (de la Torres, 2007).

FACTS (http://www.facts.org) is Florida’s official online student advising system. Florida is also among one of the few states that have a statewide
information system that allows the state to provide feedback on transfer student performance, including grades and graduation rates, after they transfer from one institution to another (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf). Florida has also developed a statewide course numbering system that provides a database of equivalent postsecondary courses at public vocational technical centers, community colleges and universities and participating non-public institutions (GAO, 2005). FACTS provides free access to online advising tools to assist students with clarifying career interests, college majors and programs. Students can also complete online admissions applications, and learn about general education requirements. Students also have the ability to retrieve an unofficial college transcript, and a degree audit of all courses completed along with financial aid information (http://www.facts.org/cgi-bin/eaglec).

In Alabama, the STARS system provides web based information to students attending Alabama’s community colleges and web access for transfer guides which are tailored to the student’s perspective major (http://stars.troy.edu). The system is a database that allows students, advisors and administrators to obtain the most current AGSC approved transfer information. Prospective transfer students can log on to STARS and obtain transfer guides that prescribes the coursework needed (http://stars.troy.edu/agcs/AGSCHandbook.htm). The STARS website has become the primary tool for
gaining information related to the state’s articulation program. The website offers links to approved course syllabi which provides end users with an example outline of how the course will be offered at the institution. Live help is also available for interfacing with an end user through the articulation system website (Sessions, 2007).

Web based transfer guides inform students and advisors of the transferability of courses from one college or university to another and provide details about the remaining degree requirements after transfer credits are applied. Many states such as Delaware, Georgia, Mississippi, South Carolina, Tennessee, and West Virginia do not have web-based guides for students and advisors to obtain transfer information (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf). Due to the importance of web assisted transfer, many community college system websites have included articulation agreements with a number of private institutions. States such as California, Texas, and Maine have included private institutions in their comprehensive numbering systems. Similarly, Illinois, New Jersey, and North Carolina provide lists or links to private institutions that participate in their respective articulation agreements.

Web-based technology has greatly impacted the availability and use of information in the transition from high school to college. Community college transfer students are an emerging demographic trend and can be expected to use
the Web for information and guidance in the transition from two-year to four-year institutions (de la Torre, 2007). Web-based technology has greatly impacted the availability and use of information in transferring from a community college to a four-year college. As younger generations search the Internet for information and guidance, this trend can be expected to continue.

**Studies on Transfer Articulation**

Several studies have been conducted on transfer articulation spanning over 100 years. As early as 1918, McDowell conducted a classic study on junior college education that showed early signs of the likelihood of college transfer. He noted that nearly three-fourths of the students from public junior colleges continued on to a university. His research provided evidence that the ability to transfer from a community college to a university was evident and that there was some resemblance that encourages transfer from a junior to senior institution (Solomon, 2001).

In 1965, Dorothy Knoell and Leland Medsler conducted the first large scale study on articulation and the transfer function. Their sample consisted of 7,243 junior college students who transferred in 1960 to one of 43 colleges and universities in 10 states. Knoell and Leland found increased articulation and coordination between institutions and by the end of the study began to notice a
number of proposals for coordination being readied for the 1965 sessions of various state legislatures (Knoell, 2006).

Palmer et al., (1994) in *At What Point Do Community College Students Transfer to BaccalaureateGranting Institutions? Evidence from a 13 State Study* examined the proportion of students transferring from two-year to four-year colleges who actually followed the traditional “2 plus 2” path. Fifty randomly selected four-year colleges and universities from 13 states were asked to analyze the academic transcripts of those students who transferred to the institution from a community college in the fall of 1991. Information was provided on more than 15,000 community college transfer students. The study conducted during the 1992-1993 academic years, revealed that 37% of the students studied earned an associate degree, and more than half (57%) earned at least 61 semester hours at community colleges. Seventy-five percent accumulated more than 48 semester hours, which is the equivalent of one and a half years of full-time study. The study determined that on average, few credits were lost during the transfer process.

In order to document the extent of articulation agreements at the close of the 20th century, Ignash (2000) evaluated articulation agreements using four measures:
1. transfer directions,  
2. sectors,  
3. transfer components, and  
4. faculty involvement.

To determine which states had agreements, the researcher designed an 11 question survey that was sent to the executive directors of state higher education agencies. The results of the study revealed that 19 states have agreements that were considered as a “strong” measure of transfer directions. Two states were considered “fairly strong” because their statewide agreements covered both vertical and horizontal transfer directions. “Moderate” states were those states with articulation agreements with the traditional vertical transfer pattern.

Results from the national study revealed that there has been an increase over the past 15 years in the number of states with statewide articulation agreements.

In 1997, the Office of Program Policy Analysis and Government Accountability (OPPAGA) sampled 10,986 students who earned an associate degree between 1997 and 1999. Of those, 6,485 transferred from a community college to a state university and took undergraduate courses. Study data consisted of the students’ major and courses completed from 1997 through the fall of 2000. Results of the study revealed that a little over half (57%) of associate degree transfer students ended up taking on average two lower division courses after transferring to a university. Over a three year period, these required courses cost the state of Florida an estimated $13.8 million dollars.
In 2001, Welsh and Kjorlen conducted research in order to gain a more in-depth sense and use of transfer student information systems. Research was conducted through a series of telephone interviews with chief academic officers, U S higher education research and information officers in all 50 states including Puerto Rico. Research revealed that 43 states, including Puerto Rico, have some form of transfer information system that includes: (a) specific data elements pertaining to transfer students, or (b) is maintained on a continuous basis. The study also found that seven states do not maintain an information system that includes transfer student data. The study concluded that although most states have an increasing ability to manipulate and use such data to inform policy process, it does not monitor or assess the effectiveness of their database and information systems to help improve outcomes for transfer students.

In 2005, a U S Department of Education study found that transferring from one college to another often increases the time it takes to complete a bachelor’s degree and the number of credit hours students accumulate before earning a degree. This study reported that students who transferred from two-year to four-year colleges take about a year longer on average to earn a bachelor’s degree than those who stayed at the same institution. Students who transferred from two-year colleges took about four-years on average to earn a bachelor’s degree, while those who transferred from four-year colleges to other four-year colleges took an average of 5.1 years. Students who did not transfer
took an average of four years to finish (http://www.sreb.org/main/Goals/Publications/07E06_Clear_Paths.pdf).

More recently in 2006, a study was conducted by Anderson, Sun, and Alfonzo to examine if a difference existed in transfer rates between states with articulation mandates versus those without such polices. The study found that statewide articulation agreements do not result in an increased probability of transferring and must be contextualized before making sweeping generalizations. The presence of additional statewide agreements has heightened the awareness among community colleges students of their options regarding the possibility of transfer. In other words, statewide articulation agreements as policy instruments may actually enhance transfer rates, given sufficient time since their existence into law.

Summary

For generations, the American community college has assisted millions of students in attaining an associate degree and the more specialized baccalaureate degree. Community colleges help millions of students who have no other access to higher education. Community college students benefit from the use and development of articulation agreements in the pursuit of achieving a baccalaureate degree. While community colleges have been praised for their democratic access to higher education and heralded as “people colleges” issues
of transfer and articulation have grown more complex as the higher education system has grown (Cohen, 1977). Collaboration between four-year and two-year institutions can only help to facilitate transfer. On a statewide level, transfer policies can be made to reduce the number of credits lost when transferring.

There is no doubt that community colleges will continue to assist millions of students who have no other access to higher education. The current push to provide quality education, as well as equitable access, has resulted in a number of efforts to improve the transfer mission of the community college. The quantity and quality of statewide articulation agreements also appear to be increasing. Luckily, states, colleges and administrators have taken notice of the importance of community college transfer credit as it not only benefits the student, but parents, colleges, and states.
CHAPTER III

METHODOLOGY

Chapter I provided background information and a theoretical framework for the study including the statement of the research problem, significance of the study, purpose of the study, research questions, hypothesis, and limitations of the study. Chapter II presented a review of research and literature related to the history of the American Community College, its missions, statewide transfer articulation programs, and prior research on transfer articulation. Chapter III discusses the methodology of the study. The sources of data and the data collection procedures, privacy and confidentiality of student data collected, instrumentation, procedures for data analysis, and a profile of the institution used in the study are also briefly discussed.

Research Design of Study

This study identified graduates who earned an associate degree from SSCC during the 1992-1997 academic years before the existence of the STARS program and during the 2002-2007 academic years after the existence of STARS. Academic transcripts of 20 randomly selected graduates from each study year
were evaluated using the SSCC general studies graduation checklist (Appendix G) for a total of 240 graduates used in the study. The primary purpose of the research was to determine if students have completed a significant amount of STARS-approved hours for transfer to public four-year institutions since creation of the STARS articulation program. In a study by the Transfer and Retention of Urban Community College Students Project (TRUCCS), academic transcripts were considered as the richest source of gaining knowledge of actual data on student persistence (Moon, Cypers, & Lester, 2006). The independent variable for the study was the STARS articulation program. The dependent variable for the study was the number of STARS-approved hours students earned for transfer to four-year institutions. Student demographic variables included age, gender, ethnicity, status, and GPA.

A randomized post test only control group design was used in the study. In this type of study, one group receives the experimental treatment (post STARS graduates) while the other group does not (pre STARS graduates). Both groups were post tested on the dependent variable, which was the amount of STARS-approved hours graduates completed for transfer. By using the randomized post test only control group design, the control of threats is well controlled. This design is perhaps the best of all designs to use in an experimental study since there are at least 40 subjects in each group (Frankel & Wallen, 2006).
Data Collection Procedures

The population for the study consisted of graduates who have earned either an AA/AS degree from Shelton State Community College between the 1992-1997 (pre STARS) and 2002-2007 (post STARS) academic years. Permission to conduct the study was obtained from the college’s president. A copy of the letter requesting permission to conduct the study is included in Appendix B.

Institutional Review Board (IRB) permission from Mississippi State University was requested and approved in order to conduct this study. A copy of the Mississippi State University IRB letter is included in the Appendix D of the study.

A total of 240 non-identifiable AA/AS degree graduates from the SSCC student information system were selected by the researcher. Academic transcripts of 240 graduates from the specified years for the study were provided to the researcher for the study. Demographic information was provided to the researcher such as: graduate date of birth, ethnicity, and gender. Each academic transcript was then evaluated using the general studies graduation checklist sheet (Appendix G). Each unofficial transcript was then coded using a student identifier number ranging from 1-240 for data recording purposes of the research study.
Privacy and Confidentiality of Student Data Collected

The researcher assured the president of SSCC that all data obtained for the study was solely for the purposes of the dissertation study and would be appropriately destroyed at the conclusion of the study. Although no identifiable student information was needed for the purposes of the study, appropriate steps were taken to ensure privacy and confidentiality of the data in accordance with the Family Educational Rights and Privacy Act (FERPA).

Instrumentation

The researcher developed a coding form for data collection. For each transcript, courses were evaluated using the college’s associate degree checklist used for degree evaluation purposes. Each transcript was evaluated by coding the courses as a STARS-approved course or as non STARS-approved courses on the general studies advising worksheet. Also each participant’s age at the date of graduation was calculated by using the birth year provided. Gender, ethnicity, and GPA were also coded on the form. Copies of these forms are included in Appendix G.
Data Analysis

The Statistical Package for the Social Sciences (SPSS) version 16.0 was utilized in order to perform all statistical procedures on the data collected in the study. Descriptive data such as frequency distributions mean scores and minimum and maximum scores were summarized from data collected and were used to answer the six research questions. An Analysis of Variance (ANOVA) was used in order to determine whether significant differences existed. The level of significance or alpha level was set at .05.
Background Information on Shelton State Community College

The Shelton State Community College 2007-2009 Catalog notes that SSCC is a broad-based institution. In addition to its general education and technical/occupational programs, the Alabama Fire College offers instruction to professionals in important public service positions throughout the state of Alabama. Because of its outstanding art, music and theater programs, SSCC is known as Alabama’s Community College of the Fine Arts. The C.A. Fredd Campus of Shelton State is designated as one of the nation’s Historically Black Colleges and Universities (HBCU) and plays a special role in extending the operations and activities of SSCC to West Alabama’s culturally diverse population.

Mission

SSCC is an open-admission, state-supported, comprehensive community college whose primary purpose is to provide accessible postsecondary education, training and community educational opportunities.

Accreditation

SSCC is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS) to award the Associate in Arts, Associate in Science, and the Associate in Applied Science degrees.

Located in Tuscaloosa, Alabama SSCC is the third largest community college in the Alabama Community College System with an annual 2006-2007 credit enrollment of 14,958 students (Jarrell, 2007).
CHAPTER IV
DATA ANALYSIS AND RESULTS

Chapter I provided background information and a theoretical framework for the study including the statement of the research problem, significance of the study, purpose of the study, research questions, hypothesis, and study limitations. Chapter II presented a review of research and literature related to the history of the American community college, its missions, statewide transfer articulation programs, use of the web and prior research on transfer articulation. In Chapter III, the methodology of the study was presented.

The main purpose of this study was intended to determine if significant differences existed among STARS-approved hours earned by graduates’ pre and post STARS implementation. Chapter IV is concerned with the findings of the data analysis of the research study. Results of the statistical analysis are presented in both narrative and table form, answering the six research questions presented in chapter one. An analysis of descriptive statistics and frequency distributions, mean scores, minimum, maximum and range scores are also presented throughout the chapter.
Initial contact concerning information and an interest in the STARS program was made in January 2008 (Appendix A). A permission letter from the program’s executive director was obtained in February 2008 (Appendix C). In order to obtain student data, permission to conduct the study was obtained from the president of SSCC on March 28, 2008. Written request from the institution’s president was obtained on April 1, 2008. A report was then generated from the college’s student information system using the following parameters:

1. Degree type: associate in art (AA) or associate in science (AS),
2. Major: general studies,

A 25 page report of all associate degree graduates during the selected study years using the designated parameters was obtained by the researcher that included degree type (AA/AS), SSCC student ID number, and graduation date for those years selected for study research. Research participants for the study were randomly selected by selecting every tenth student identification number off the report until the desired number of study participants was selected. The same method was duplicated for each study year for a total of 240 study participants.

Once all participants were selected, academic transcripts of study graduates were printed by an admissions officer, and provided to the researcher. Transcripts did not include any identifiable student information in order to comply with confidentiality and FERPA. Each transcript included courses
completed, graduation date, and degree(s) earned by selected study graduates. Demographic information including date of birth, gender and ethnicity was provided on each transcript for demographic reporting purposes.

Each transcript was then coded with an assigned identification number ranging from 1-240. Transcripts were organized by study graduation year and evaluated using the SSCC Degree Requirements for an Associate in Art or Associate in Science Check Sheet (Appendix G). An evaluation check sheet was completed on each study participant and attached to the corresponding academic transcript. After each transcript was evaluated, STARS-approved hours earned at SCC were highlighted and calculated on each transcript. Hours that were considered as non STARS-approved hours earned at SCC were also calculated. Once all transcripts were evaluated, transcript data was documented on the data recording sheet created by the researcher (Appendix G).

The independent variable for the study was the STARS articulation program. The dependent variable for the study was the number of STARS-approved hours completed. In testing variables for the research questions, ethnicity, gender, GPA, student status, and student type (traditional or nontraditional) were all used as independent variables. In order to control for many variables simultaneously and while ascertaining the impact of STARS, an analysis of variance, or ANOVA was used to analyze data. An ANOVA is
designed to test the significance of group differences by comparing two or more sample means, and the risk of a type I error is reduced (Frankel & Wallen, 2006).

In order to establish if a sample difference is statistically significant—the result of a real population difference and not just sampling error—it is customary to set up a level of significance, or alpha level (Fox, Levin, & Shively, 2002). A significance level shows the likelihood of a result due to chance. For the purposes of the study, the .05 level of significance was used since it is the most common level used in research.

Normal theory-based tests for the equality of population means assume that data comes from populations that have the same variance, even if the test rejects the null hypothesis of equality for population means. If this assumption of homogeneity of variance is not met, the statistical test results may not be valid (http://www.basic.northwestern.edu/statguidefiles/sg_glos.html#homoscedasticity). In the study, a Levene’s Test was used to test the homogeneity of variance. The homogeneity of variance calculates the Levene statistic, testing whether the variance of the dependent variable(s) is equal for all groups (Norusis, 2002). The results of the Levene’s test revealed that the variances are approximately equal, with a significance level of $F(41,198) = .77, p = .71$. 
The research questions that guided the study are as follows:

1. Are students completing more STARS-approved hours after the adoption of STARS than before the adoption of STARS?

2. Does ethnicity have an effect on STARS-approved hours completed for transfer?

3. Does gender have an effect on the number of STARS-approved hours graduates complete for transfer?

4. Is there a correlation among student type (traditional and nontraditional) who complete STARS-approved hours for transfer?

5. Does cumulative grade point average (GPA) have an effect on the number of STARS-approved hours completed for transfer?

6. Does student status (reverse transfer, transfer, or native) have an effect on the number of STARS-approved hours students complete for transfer?

**Profile of Graduates Used in Study**

The population for the study included 240 associate degree graduates from SSCC. One hundred-twenty pre STARS graduates were selected and 120 post STARS graduates were selected for the study. Of those selected, 192 graduates earned an associate in science degree and 48 earned an associate in art degree (Figure 4.1).
Demographic characteristics and levels of measurement for graduates used in the study were summarized in terms of age, gender, traditional and nontradiotional status, SSCC cumulative GPA, number of semesters enrolled at SSCC, STARS-approved hours earned, non STARS-approved hours earned, total hours earned, and if a dual degree or certificate was earned. Student type, gender, ethnicity, status and if the student graduated before (pre STARS) or after (post STARS) the existence of the program were all measured as nominal levels of data. The cumulative SSCC GPA served as a covariate in the study, and as an interval/ratio level of measurement.
### Table 4.2

Range, Minimum, Maximum and Mean Scores of Graduate Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Graduation</td>
<td>74</td>
<td>19</td>
<td>93</td>
<td>27</td>
<td>10.16</td>
</tr>
<tr>
<td>GPA</td>
<td>2.82</td>
<td>1.18</td>
<td>4.00</td>
<td>3.02</td>
<td>.56</td>
</tr>
<tr>
<td>Number of Semesters Enrolled at SCC</td>
<td>23</td>
<td>1</td>
<td>24</td>
<td>8.90</td>
<td>4.21</td>
</tr>
<tr>
<td>Non STARS hours completed</td>
<td>68</td>
<td>0</td>
<td>68</td>
<td>14.16</td>
<td>13.69</td>
</tr>
<tr>
<td>STARS hours completed</td>
<td>63</td>
<td>0</td>
<td>63</td>
<td>17.25</td>
<td>10.75</td>
</tr>
<tr>
<td>Total hours completed at SCC</td>
<td>161.34</td>
<td>7.66</td>
<td>169.00</td>
<td>73.72</td>
<td>29.13</td>
</tr>
</tbody>
</table>

Table 4.2 displays the range, minimum, maximum, mean and standard deviation scores of demographic variables for study graduates. The mean age of participants used in the study was 27 years old, from minimum age of 19 to a maximum age of 93 years old, with a range 74 years. The minimum SCCC grade point average (GPA) earned was 1.18 with a maximum GPA of 4.00. The range of GPAs used in the study was 2.82, with a mean score of 3.02. The mean score for
the number of semesters enrolled at SCC was 8.90 with students enrolling for a minimum of one semester and a maximum of 24 semesters. The range of semesters enrolled prior to graduation at SCC was 23.

Descriptive characteristics of non STARS and STARS hours earned by graduates were similar in number. The range and maximum scores for approved hours completed that were non STARS-approved totaled 68 and 63 for STARS-approved hours completed by graduates. The minimum scores for both non STARS and STARS hours completed equaled 0. The mean score of non STARS hours completed was 14.16 and 17.25 for STARS hours. When examining total hours completed by study graduates, students earned a minimum of 7.66 hours at SCC and a maximum of 169 hours at SCC prior to graduating with an associate degree. The range for total hours earned at SCC among graduates was 161.34 with a mean score of 73.72.

Figure 4.3 shows the ethnicity of graduates used in the study. The majority of study graduates were white and female. One hundred-two of the graduates were male (42.5%) and 138 (57.5%) were female. One hundred sixty-four of graduates were white (68.3%), 69 (28.8%) were African-American, 5 (2.1%) graduates races were unknown, one (.4%) graduate was Hispanic and one (.4%) graduate race was listed as other.
One hundred thirty-five (56%) graduates were considered as traditional students and 105 (44%) as nontraditional students (age 24 or older) at the time of graduation. Traditional or nontraditional student status was determined by subtracting the date of birth provided from the date of graduation on each academic transcript. Graduates who had not earned any type of dual degree or certificate were the largest percentage used in the study. Of those graduates selected, 205 (85.4%) had not earned a dual degree or certificate prior to completing an associate degree at SSCC. Twelve (5%) earned a certificate, six (2.5%) earned a short certificate, 10 (4.2%) earned a dual associate degree, and seven (2.9%) earned an associate in applied science degree prior to completing an AA/AS degree. Table 4.4 lists these frequencies.
Table 4.4

Dual Degrees, Certificates, and Short
Certificates Earned by Graduates

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Dual Degree</td>
<td>205</td>
<td>85.4</td>
</tr>
<tr>
<td>Certificate</td>
<td>12</td>
<td>5.0</td>
</tr>
<tr>
<td>Short Term Certificate</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>10</td>
<td>4.2</td>
</tr>
<tr>
<td>Associate in Applied Science</td>
<td>7</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>100</td>
</tr>
</tbody>
</table>

The total number of semester’s graduates attended SSCC prior to earning their degree ranged from one to 24 semesters. Frequency distributions (Table 4.5) revealed that the majority of graduates were enrolled for six (12.5%) semesters, the equivalent of two years education prior to completing their degree.
Table 4.5

Frequency Distributions for Number of Semesters Enrolled by Graduates Prior to Earning Degree

<table>
<thead>
<tr>
<th>Number of Semesters Enrolled</th>
<th>f</th>
<th>P</th>
<th>Number of Semesters Enrolled</th>
<th>f</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>1.7</td>
<td>12</td>
<td>12</td>
<td>5.0</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>2.1</td>
<td>13</td>
<td>8</td>
<td>3.3</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>3.8</td>
<td>14</td>
<td>12</td>
<td>5.0</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>3.8</td>
<td>15</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
<td>7.1</td>
<td>16</td>
<td>9</td>
<td>3.8</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>12.5</td>
<td>17</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>7</td>
<td>26</td>
<td>10.8</td>
<td>18</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>8</td>
<td>29</td>
<td>12.1</td>
<td>20</td>
<td>1</td>
<td>.4</td>
</tr>
<tr>
<td>9</td>
<td>28</td>
<td>11.7</td>
<td>23</td>
<td>1</td>
<td>.4</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>4.6</td>
<td>24</td>
<td>1</td>
<td>.4</td>
</tr>
<tr>
<td>11</td>
<td>14</td>
<td>5.8</td>
<td>Total</td>
<td>240</td>
<td>100</td>
</tr>
</tbody>
</table>

86
Table 4.6

Analysis of Variance Summary Table Regarding Significance Levels Between Pre and Post STARS Hours Earned

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>25.34</td>
<td>41</td>
<td>.62</td>
<td>29.79</td>
<td>.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>34.66</td>
<td>198</td>
<td>.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>60.00</td>
<td>239</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question One:

1. Are students completing more STARS-approved hours after the adoption of STARS than before the adoption of STARS?

Results of the statistical analysis revealed that a significant difference \( (F(41, 198) = 29.79, p = .00) \) was found among graduates who completed STARS-approved hours since the existence of the STARS program (Table 4.6). Overall, when examining all factors using pre or post STARS graduates, those students who graduated post STARS implementation completed more STARS-approved hours than before the articulation program began. When examining the sum of STARS and non STARS hours completed by graduates (Figure 4.7), more STARS hours (Sum=4969) were completed by study graduates than non STARS hours (Sum=3102). When examining mean scores among STARS-approved hours
completed for both sets of graduates, those who graduated before the STARS articulation program \((M = 12.12)\) had mean scores that were almost half of those who graduated after the implementation of the STARS program \((M = 23.61)\).

The results of the research revealed several pertinent points relating to articulated credit earned before and after the program. Those students who graduated after the creation of the STARS articulation program earned more STARS articulated hours for transfer than those students who graduated before the program was created. When comparing mean scores between STARS and non STARS hours earned for both pre and post STARS graduates, the number of hours considered as non STARS hours earned by the pre STARS graduates

![Figure 4.7](image)

**Figure 4.7**

Total STARS and Non STARS-Approved Hours Completed by Graduates

The results of the research revealed several pertinent points relating to articulated credit earned before and after the program. Those students who graduated after the creation of the STARS articulation program earned more STARS articulated hours for transfer than those students who graduated before the program was created. When comparing mean scores between STARS and non STARS hours earned for both pre and post STARS graduates, the number of hours considered as non STARS hours earned by the pre STARS graduates
(M=20.82) was significantly higher than those the number of hours earned by students after the program was created (M=7.51). When examining the amount of STARS-approved credit earned by graduates post STARS, the amount of articulated credit earned by graduates significantly increased. Post STARS graduates (M=22.69) earned more articulated credit and fewer non STARS-approved hours (M=7.51) than pre STARS graduates. Those who graduated before the articulation program was created earned larger amounts of credit that may not transfer to a four-year institution. Mean differences revealed that post STARS graduates (M=22.69) earned almost double the amount of articulated credit than pre STARS graduates (M=11.80). Those students who graduated before the existence of STARS earned fewer articulated credit (M=11.80) and more non STARS articulated credit (M=20.82). Table 4.8 lists the mean scores of STARS and non STARS hours earned by graduates.

Figure 4.9 displays the mean scores of STARS and non STARS hours earned by graduates in percentages. Before the articulation program was created, students earned a lower percentage of STARS hours (36%) than non STARS hours (64%). After the program was created, the amount of STARS hours earned increased with 75% of the credit earned being STARS-approved hours and the amount of non articulated hours drastically decreased, with 25% of credit earned considered as non STARS-approved courses.
Table 4.8

Mean Scores of STARS and Non STARS Hours Earned Between Graduates Pre and Post STARS Implementation

<table>
<thead>
<tr>
<th></th>
<th>STARS Hours</th>
<th>Non STARS Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre STARS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>11.80</td>
<td>20.82</td>
</tr>
<tr>
<td>$N$</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>$SD$</td>
<td>8.36</td>
<td>14.86</td>
</tr>
<tr>
<td>Post STARS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>22.69</td>
<td>7.51</td>
</tr>
<tr>
<td>$N$</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>$SD$</td>
<td>10.12</td>
<td>8.13</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>17.25</td>
<td>14.16</td>
</tr>
<tr>
<td>$N$</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>$SD$</td>
<td>10.75</td>
<td>13.69</td>
</tr>
</tbody>
</table>
Figure 4.9

Percentage of STARS and Non STARS Hours Earned by Graduates Pre and Post STARS Implementation
Frequency distributions of STARS-approved (major and pre-professional) elective hours earned in area V of the general studies curriculum revealed that more study graduates earned between 15-19 ($f=31$) and 20-24 ($f=23$) elective credit hours that were STARS-approved for transfer to a public Alabama four-year institution (Table 4.10). The SCCC 2007-2009 College Catalog lists the Alabama State Board of Education requirements for an associate degree. Students are required to earn between 19-24 credit hours of elective credit for an associate degree.

Table 4.10

<table>
<thead>
<tr>
<th>STARS Hours Earned</th>
<th>Number of STARS Hours</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>9</td>
<td>7.5</td>
</tr>
<tr>
<td>5-9</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>10-14</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>15-19</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>20-24</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>25-29</td>
<td>14</td>
<td>11.7</td>
</tr>
<tr>
<td>30-34</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>35-39</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>40-44</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>45-49</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>50-54</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>55-59</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>60-64</td>
<td>1</td>
<td>.8</td>
</tr>
</tbody>
</table>
Table 4.11

Analysis of Variance Summary Table Regarding Ethnicity and Significance Levels Between Pre and Post STARS Hours Earned

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>14.88</td>
<td>41</td>
<td>.36</td>
<td>.001</td>
<td>.66</td>
</tr>
<tr>
<td>Within Groups</td>
<td>68.30</td>
<td>198</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>83.18</td>
<td>239</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Research Question Two**

2. Does ethnicity have an effect on STARS-approved hours completed for transfer?

Ethnicities of graduates used in the study were White, African American, Hispanic, Other, and Unknown. Ethnicity was found to have no significant difference ($F(41, 198) = .001, p = .66$) on graduates completing STARS-approved hours towards for transfer (Table 4.11). When looking at ethnicity individually, whites ($M = 17.47$) had a lower mean score than minority graduates ($M = 18.26$) of those who completed STARS-approved hours.

When individually comparing the means of ethnicity with other study predictor variables, such as gender, student type and status, several differences were found. Minority male graduates ($M = 18.68$) completed more STARS-
approved hours compared to white male graduates ($M = 16.80$). White female graduates ($M = 18.14$) completed more STARS-approved hours compared to minority female graduates ($M = 17.87$). Overall, nontraditional white ($M = 18.24$) and traditional minority graduates ($M = 18.81$) earned more STARS-approved hours than traditional white ($M = 16.70$) and nontraditional ($M = 17.72$) minority graduates (Figure 4.12).

![Mean Scores Among Male and Female Completion of STARS Approved Hours](image)

**Figure 4.12**

Mean Scores Among Male and Female Completion of STARS-Approved Hours

Among ethnicity, white ($M = 23.54$) and minority post STARS graduates ($M = 23.68$) completed more STARS-approved hours than pre STARS graduates. Mean scores for both ethnicities were almost similar among white and minority post STARS graduates in the amount approved hours completed. White pre
STARS graduates ($M = 11.40$) earned fewer STARS-approved hours overall, when examining if the hours were earned pre or post STARS, and fewer than minority pre STARS graduates ($M = 12.84$).

Table 4.13

Analysis of Variance Summary Table Regarding Significance Levels Among Gender and Pre and Post STARS Hours Earned

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>13.57</td>
<td>41</td>
<td>.331</td>
<td>1.454</td>
<td>.04</td>
</tr>
<tr>
<td>Within Groups</td>
<td>45.08</td>
<td>198</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58.65</td>
<td>239</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question Three

3. Does gender have an effect on STARS-approved hours graduates complete for transfer?

Results of the statistical analysis revealed among gender, that a significant difference existed ($F(41, 198) = 1.454, p = .04$) in the amount of STARS-approved hours earned by graduates (Table 4.13). Mean scores of STARS-approved hours completed by male traditional ($M = 17.62$), nontraditional male ($M = 17.86$), and traditional female students ($M = 17.90$) were almost identical. Nontraditional female graduates completed the most STARS-approved hours,
with a mean score of 18.10. Also, male ($M = 24.57$) and female ($M = 22.66$) post STARS graduates completed more STARS-approved hours than pre STARS graduates. Female pre STARS graduates completed more ($M = 13.23$) STARS-approved hours than male pre STARS graduates ($M = 10.91$).
<table>
<thead>
<tr>
<th></th>
<th>Pre STARS</th>
<th>Post STARS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Traditional</td>
<td>9.68</td>
<td>19.00</td>
<td>14.44</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>11.72</td>
<td>26.67</td>
<td>17.70</td>
</tr>
<tr>
<td>Nontraditional Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total White</td>
<td>10.60</td>
<td>21.63</td>
<td>15.7</td>
</tr>
<tr>
<td>(Traditional and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontraditional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority Traditional</td>
<td>8.90</td>
<td>33.00</td>
<td>10.92</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority Nontraditional</td>
<td>13.63</td>
<td>19.57</td>
<td>16.40</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Minority</td>
<td>10.89</td>
<td>21.25</td>
<td>13.96</td>
</tr>
<tr>
<td>(Traditional and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontraditional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Male</td>
<td>9.42</td>
<td>19.58</td>
<td>13.70</td>
</tr>
<tr>
<td>Traditional Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Nontraditional</td>
<td>12.31</td>
<td>24.05</td>
<td>17.26</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for Male</td>
<td>10.69</td>
<td>21.56</td>
<td>15.27</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.14 lists the mean scores of male graduates’ pre and post STARS implementation. When examining the mean scores among male graduates, post STARS \( (M = 21.56) \) graduates completed more STARS-approved hours for transfer than pre STARS \( (M = 10.69) \) graduates among both whites and minorities. Post STARS white male graduates (traditional and nontraditional) completed more post STARS-approved hours \( (M = 21.63) \) than pre STARS white male graduates, both traditional and nontraditional \( (M = 10.60) \). Among minorities, nontraditional and traditional post STARS graduates \( (M = 21.25) \) completed more STARS-approved hours than pre STARS graduates, traditional and nontraditional \( (M = 10.89) \).

Minority traditional post STARS graduates completed the most STARS-approved hours \( (M = 33.00) \) compared to nontraditional white male post STARS graduates \( (M = 26.67) \). Mean scores revealed that pre STARS white nontraditional graduates earned fewer STARS-approved hours \( (M = 11.72) \) and minority traditional pre STARS graduates earned even fewer STARS-approved hours \( (M = 8.90) \). Among nontraditional and traditional male graduates, nontraditional post STARS males completed more STARS-approved hours \( (M = 24.05) \) than traditional pre STARS \( (M = 19.58) \) graduates, but more than nontraditional and traditional graduates. Male nontraditional pre STARS
graduates ($M = 12.31$) and male pre STARS traditional graduates ($M = 9.42$) earned the least amount of STARS-approved hours.

Table 4.15 lists the mean scores of graduates’ pre and post STARS implementation. White traditional ($M = 24.22$) and white nontraditional post STARS graduates ($M = 24.10$) completed more STARS-approved hours for transfer. Traditional post STARS minority graduates completed fewer STARS-approved hours for transfer as compared to traditional white graduates. Minority post STARS traditional graduates completed ($M = 18.60$) fewer STARS-approved hours than non-traditional post STARS minority graduates ($M = 23.77$) but more STARS-approved hours than pre STARS traditional white graduates ($M = 13.76$), white nontraditional pre STARS ($M = 10.22$), pre STARS minority traditional ($M = 15.00$) and pre STARS minority nontraditional graduates ($M = 14.42$). Post STARS traditional female graduates ($M = 23.00$) completed fewer STARS-approved hours than nontraditional post STARS female graduates ($M = 23.89$). Female traditional pre STARS graduates ($M = 13.97$) and nontraditional pre STARS graduates ($M = 11.90$), earned fewer STARS-approved hours than post STARS graduates.
Table 4.15
Mean Scores of Female Graduates Pre and Post STARS Implementation

<table>
<thead>
<tr>
<th></th>
<th>Pre STARS</th>
<th>Post STARS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Traditional Graduates</td>
<td>13.76</td>
<td>24.22</td>
<td>19.93</td>
</tr>
<tr>
<td>White Non-traditional Graduates</td>
<td>10.22</td>
<td>24.10</td>
<td>15.18</td>
</tr>
<tr>
<td>Total White (Traditional and Nontraditional) Graduates</td>
<td>12.28</td>
<td>24.20</td>
<td>18.44</td>
</tr>
<tr>
<td>Minority Traditional Graduates</td>
<td>15.00</td>
<td>18.60</td>
<td>17.40</td>
</tr>
<tr>
<td>Minority Nontraditional Graduates</td>
<td>14.42</td>
<td>23.77</td>
<td>19.90</td>
</tr>
<tr>
<td>Total Minority (Traditional and Nontraditional) Graduates</td>
<td>14.59</td>
<td>21.85</td>
<td>19.04</td>
</tr>
<tr>
<td>Total Female Traditional Graduates</td>
<td>13.97</td>
<td>23.00</td>
<td>19.43</td>
</tr>
<tr>
<td>Total Female Nontraditional Graduates</td>
<td>11.90</td>
<td>23.89</td>
<td>17.58</td>
</tr>
</tbody>
</table>
Table 4.16

Analysis of Variance Summary Table Regarding Significance Levels Among Student Type and Pre and Post STARS Graduates Hours Earned

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>8.90</td>
<td>41</td>
<td>.22</td>
<td>38.81</td>
<td>.72</td>
</tr>
<tr>
<td>Within Groups</td>
<td>50.17</td>
<td>198</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59.06</td>
<td>239</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Research Question Four**

4. Is there a correlation among student type (traditional and nontraditional) who complete STARS-approved hours for transfer?

Tests between variables revealed that no significant differences existed among nontraditional or traditional students (Table 4.16) who completed STARS-approved hours ($F(41, 198) = 38.81, p = .72$). Post STARS graduates, both traditional ($M = 23.74$) and nontraditional ($M = 23.49$) did have higher mean scores of STARS-approved hours than pre STARS traditional ($M = 11.77$) and nontraditional graduates ($M = 12.47$).
Table 4.17

Analysis of Variance Summary Table Regarding
Significance Levels Among GPA and
Pre and Post STARS
Hours Earned

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>7.13</td>
<td>41</td>
<td>.17</td>
<td>.002</td>
<td>.96</td>
</tr>
<tr>
<td>Within Groups</td>
<td>68.13</td>
<td>198</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>75.27</td>
<td>239</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question Five

5.  Does cumulative grade point average (GPA) have an effect on the number of STARS-approved hours completed for transfer?

According to the results of the statistical analysis, GPA did not have a significant effect on the amount of STARS-approved hours (Table 4.17) students completed \((F(41, 198) = .002, p = .96)\) for transfer. Frequency statistics for GPA ranges of graduates are listed in Table 4.18. The cumulative GPA of graduates was used to determine if graduate GPA had an effect on the number of STARS-approved hours completed for transfer. The largest frequency of GPA earned by graduates was 2.76-3.0 \((f = 43)\).
Table 4.18

Grade Point Average Frequencies Among Graduates

<table>
<thead>
<tr>
<th>GPA</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0-1.25</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>1.26-1.50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.51-1.75</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.76-2.0</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>2.01-2.25</td>
<td>14</td>
<td>5.8</td>
</tr>
<tr>
<td>2.26-2.50</td>
<td>35</td>
<td>14.6</td>
</tr>
<tr>
<td>2.51-2.75</td>
<td>28</td>
<td>11.7</td>
</tr>
<tr>
<td>2.76-3.0</td>
<td>43</td>
<td>17.9</td>
</tr>
<tr>
<td>3.01-3.25</td>
<td>27</td>
<td>11.2</td>
</tr>
<tr>
<td>3.26-3.50</td>
<td>36</td>
<td>15</td>
</tr>
<tr>
<td>3.51-3.75</td>
<td>23</td>
<td>9.6</td>
</tr>
<tr>
<td>3.76-4.0</td>
<td>30</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Table 4.19

Analysis of Variance Summary Table Regarding Student Status Significance Levels Between Pre and Post STARS Hours Earned

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>239.59</td>
<td>41</td>
<td>5.84</td>
<td>3.24</td>
<td>.07</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1141.89</td>
<td>98</td>
<td>5.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1381.49</td>
<td>239</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question Six

6. Does student status (reverse transfer, transfer, or native) have an effect on the number of STARS-approved hours students complete for transfer?

Results show (Table 4.19) that student status did not have a significant effect on STARS-approved hours completed ($F(41, 198) = 3.24, p = .07$) for transfer. Overall, native students earned more STARS-approved hours than those who were considered as transfer and reverse transfer students. Reverse transfer students earned the least amount of STARS-approved credit. Mean scores revealed that native students ($M = 18.54$) earned more STARS-approved hours than transfer ($M = 16.23$) and reverse transfer students ($M = 15.46$). Native traditional students ($M = 17.81$) and nontraditional native students ($M = 19.26$) earned more STARS-approved hours than traditional transfer ($M = 14.98$),
reverse transfer ($M = 14.73$), and nontraditional transfer students ($M = 15.81$). Pre STARS ($M = 13.38$) and post STARS ($M = 18.33$) native students earned more STARS-approved hours than post STARS transfer ($M = 10.30$), and reverse transfer ($M = 10.62$) students.

Table 4.20

<table>
<thead>
<tr>
<th>Status</th>
<th>$F$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse UA</td>
<td>42</td>
<td>17.5</td>
</tr>
<tr>
<td>Reverse Stillman</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>Reverse Other College</td>
<td>31</td>
<td>12.9</td>
</tr>
<tr>
<td>Community College Transfer</td>
<td>24</td>
<td>10.0</td>
</tr>
<tr>
<td>Native</td>
<td>137</td>
<td>57.1</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.20 lists the frequency distributions of reverse transfer, transfer and native students. Native students were the largest population of graduates used in the study. One hundred thirty-seven or (57.1%) were considered as native students who enrolled only at SSCC prior to attending the college. Forty-two
(17.5%) were reverse transfer students from The University of Alabama (UA), and six (2.5%) were reverse transfer students from Stillman College. Thirty-one (12.9%) were reverse transfers from another four-year institution and 24 (10%) were transfer students who attended another community college before enrolling at SSCC.

When examining the mean scores between reverse transfer UA, Stillman College and other reverse transfer students, data analysis results revealed that those students who were reverse transfer UA ($M = 17.09$) students earned more STARS-approved hours than reverse transfer students from Stillman College ($M = 13.00$), and those that attended other four-year colleges prior to enrolling at SSCC ($M = 13.61$). Those who attended Stillman College prior to enrolling at SSCC earned the least amount of STARS-approved hours when comparing its mean scores to those from other four-year institutions and UA. It is important to note that Stillman College is a private institution and the STARS articulation agreement was only created for public in-state institutions. Those students who attended another out-of-state community college before entering SSCC as a transfer student earned the least amount ($M = 10.79$) of STARS-approved hours. Table 4.21 lists the mean and standard deviation scores among student status.
Table 4.21
Mean and Standard Deviation Scores Among Student Status

<table>
<thead>
<tr>
<th>Student Status</th>
<th>M</th>
<th>N</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse UA</td>
<td>17.09</td>
<td>42</td>
<td>10.41</td>
</tr>
<tr>
<td>Reverse Stillman</td>
<td>13.00</td>
<td>6</td>
<td>6.54</td>
</tr>
<tr>
<td>Reverse Other Four-Year Institution</td>
<td>13.61</td>
<td>31</td>
<td>8.70</td>
</tr>
<tr>
<td>Out of State Community College Transfer</td>
<td>10.79</td>
<td>24</td>
<td>9.29</td>
</tr>
</tbody>
</table>

In examining interaction between gender, student type with student status, male traditional native students ($M = 17.81$) earned fewer STARS-approved hours than female nontraditional native students ($M = 18.55$).

Nontraditional male native students ($M = 18.53$) earned fewer STARS-approved hours than female nontraditional native students ($M = 19.99$). When examining data among gender, status and student type, male traditional transfer students earned the least number of STARS-approved hours ($M = 14.00$).
Summary of Research Questions

This chapter included an analysis of data on 240 randomly selected pre
STARS (1992-1997) and post STARS (2002-2007) associate degree graduates from
SSCC. Findings of the study revealed significant differences in the amount of
STARS-approved hours earned by students when comparing credits earned
before and after the STARS articulation program was created. Academic
transcripts were chosen by the researcher as the data collection method.
Previous research by the TRUCCS considered academic transcripts as an
effective way to examine transfer data between two-year and four-year
institutions. Graduates used in the study were on average 27 years old, white
and female. Students were more likely to have only attended SSCC prior to
earning a degree (native). Most students were considered as traditional at the
time of their graduation, and had not earned any type of dual degree or
certificate prior to graduating from SSCC.

Descriptive statistics, including frequency distributions, were performed
to determine if the number of observations fell into several ranges or values.
Descriptive statistics were also analyzed to describe features of the data used in
the study. Students who graduated after program implementation earned more
articulated hours for transfer than those who graduated before the program
began. Significant differences were also found among student gender and the
number of STARS-approved hours completed for transfer. Male graduates

108
completed more STARS-approved hours than female graduates. When examining ethnicity, minority males completed more STARS-approved hours than white graduates. When examining the mean scores among male graduates, post STARS graduates completed more STARS-approved hours for transfer than pre STARS graduates among both whites and minorities. Post STARS white male graduates (traditional and nontraditional) completed more STARS-approved hours than pre STARS white male graduates, both traditional and nontraditional. Among minorities, nontraditional and traditional post STARS graduates completed more STARS-approved hours than pre STARS minority graduates, traditional and nontraditional.

Non significant differences were found when examining study graduates’ ethnicity, status, student type, and GPA among STARS-approved hours earned. Post STARS graduates, both traditional and nontraditional did have higher mean scores of STARS-approved hours than pre STARS traditional and nontraditional graduates. The cumulative GPA among graduates was used to determine if a graduate’s GPA had an effect on the number of STARS-approved hours completed for transfer. A significant difference was not found among GPA. The largest frequency of GPAs earned by graduates was 2.76-3.0.

Native students earned more STARS-approved hours than those students who either transferred or were considered as reverse transfer students at SSCC. Reverse transfer students from UA earned more STARS-approved hours than
reverse transfers from Stillman College and other four-year colleges. Those students who transferred from Stillman College, a private four-year college, earned the least amount of STARS-approved hours.

An analysis of additional data did reveal a significant relationship between group predictor variables using gender, pre or post STARS, and student status ($F(1, 239) = 6.97, p = .01$) When examining data before and after the existence of STARS, post STARS native male ($M = 21.64$) and female graduates ($M = 24.43$) earned more STARS-approved courses. Male transfer and reverse transfer post STARS students earned more STARS hours ($M = 19.88$) than pre STARS ($M = 9.56$) students. Among females, post STARS transfer or reverse transfer ($M = 21.35$) graduates earned more STARS-approved hours than their female counterparts ($M = 11.03$).
CHAPTER V
SUMMARY, CONCLUSIONS, IMPLICATIONS,
FINDINGS AND RECOMMENDATIONS

Community colleges today serve many functions and have diverse missions. One of the most important missions of the community college is its transfer mission. Students transfer from community colleges to four-year institutions and from four-year colleges back to community colleges. Students and parents are interested in those courses completed at the two-year level that may be counted towards baccalaureate degree requirements. In order to assist and make the process smooth, many states have implemented articulation agreements to assist with four-year transfer from community colleges. Several states have created or are developing mainstream articulation programs to assist with the transfer process. Alabama has developed STARS, which assists all transfer community college students in the state with the guidance and support needed for appropriate course selection in order to avoid any loss of credit when transferring.

A student’s inability to transfer credit may result in longer enrollment, additional tuition payments, and additional federal financial aid (GAO, 2005).
Further, uniform and consistent credit acceptance is not only important to students, but also to the receiving institution. A uniform articulation agreement not only provides some consistency to credit acceptance but also adds a degree of certainty when transferring community college credit to four-year institutions. Successful transfer from the community college to a four-year college is often the only opportunity some students will have to receive a bachelor’s degree (Solomon, 2001). It is important for community colleges, four-year institutions, and transfer articulation governing bodies to recognize if the state’s transfer articulation program is assisting students not only with transferring, but also in ascertaining whether transfer credit will be accepted towards a student’s major from a community college to four-year university.

The primary purpose of the study was to determine if students have earned more articulated and transferrable hours since the creation of the STARS program than students did before the existence of the program. Additional variables such as ethnicity, gender, GPA, status, and student type were used to determine if significant differences existed among these variables in students completing STARS-approved hours. Non-identifiable academic transcripts of 240 randomly selected associate degree graduates before and after the implementation of the program were used in the study. Study years included 20 randomly selected students from each pre STARS chosen year (1992-1997) and from each post STARS (2002-2007) years for a total of 240 study graduates. Only
credits earned at SSCC were evaluated to examine if selected graduates for the study completed STARS-approved hours that would transfer to a state public four-year institution, or were those courses completed only applied to general requirements towards earning an associate degree at SSCC, with no guarantee of credits transferring to a public Alabama four-year institution.

Data collection included the researcher obtaining a generated report of AA/AS degree graduates for the selected study years. A 25 page report was obtained by the researcher that included degree type (AA/AS), graduation year and major. The research group for the study was randomly selected by selecting every tenth student listed on a generated report for each graduate until 20 participants for each year were selected. The same method was duplicated for each study year for a total of 240 study participants. After each transcript was evaluated, STARS-approved hours earned at SSCC were highlighted and calculated for each transcript along with non STARS hours completed. A graduation evaluation check sheet was completed on each transcript. Once all transcripts were evaluated, data for graduation purposes was documented on the data recording sheet created by the researcher. The following research questions were answered in the research study:

1. Are students completing more STARS-approved hours after the adoption of STARS than before the adoption of STARS?

2. Does ethnicity have an effect on STARS-approved hours completed for transfer?
3. Does gender have an effect on STARS-approved hours graduates complete for transfer?

4. Is there a correlation among student type (traditional and nontraditional) who complete STARS-approved hours for transfer?

5. Does cumulative grade point average (GPA) have an effect on the number of STARS-approved hours completed for transfer?

6. Does student status (reverse transfer, transfer, or native) have an effect on the number of STARS-approved hours students complete for transfer?

**Summary and Conclusions**

The primary purpose of the study was to determine if students have earned more approved transfer hours since the establishment of the STARS program than students did before the existence of the program. Additional variables such as ethnicity, gender, GPA, status, and student type were used to determine if significant differences existed among these variables in students completing STARS-approved hours. The following conclusions are based on the results of the research study conducted in regard to the STARS articulation program.

1. The STARS program has had a significant impact on the amount of STARS-approved hours students have earned when comparing it to those hours students earned before implementation of the STARS program. Due to the effectiveness of the articulation program, students, parents, administrators and advisors can be assured that
those courses completed at an Alabama community college will transfer to a public in-state institution. The guarantee of community college credits transferring saves the student, parent and the state money. If the articulation program is followed, then students are guaranteed to complete their first 60 hours of college credit, which amounts to the freshman and sophomore years of college, and possible associate degree completion. These students may enter a senior four-year state institution with junior standing, thus taking upper level courses towards earning a baccalaureate degree without losing any baccalaureate degree completion time.

Before the existence of the STARS program, community college students were not guaranteed that courses completed at an Alabama community college would transfer to a four-year in-state institution and if they lacked any lower level deficiencies due to unaligned curriculum and degree requirements. Due to the effectiveness of the STARS program, students now have access to what courses are needed for transfer and to assist in completing a four-year degree in more efficient, lateral, coordinated, and less confusing manner.
2. STARS has assisted students in completing the required hours needed for earning an associate degree and for transfer. The Alabama State Board of Education requirements for an associate degree are that students earn between 19-23 credit hours in area V of the state’s general studies requirements for an AA/AS degree. The minimum amount of hours needed for an associate degree is 60 and should not exceed 64 credit hours. Most four-year institutions will only allow students to transfer a maximum of 64 hours towards baccalaureate degree requirements. Study frequency results revealed that on average, the majority of post graduates earned between 15-19 and 20-24 hours that were STARS-approved pre-major, professional elective hours. Therefore, not only are students completing the appropriate hours needed to obtain an AA/AS degree, but also the required elective hours needed for transfer. This saves students, parents and the state money since students are not taking too many elective hours that may not transfer, but only those credits that are required for associate degree requirements.

3. A student’s ethnicity was found to have no significant difference on completing STARS-approved hours for transfer. Of those students
selected for the study, white students had lower mean scores of
STARS-approved hours earned than minority students.

4. Gender was found to have a significant difference on completing
STARS-approved hours. Nontraditional female graduates
completed the most STARS-approved hours. Also, both male and
female post STARS graduates completed more STARS-approved
hours than pre STARS graduates. Female post STARS graduates
completed more STARS-approved hours than male pre STARS
graduates.

5. White traditional and nontraditional post STARS graduates
completed more STARS-approved hours for transfer when
compared to pre STARS graduates. When examining the mean
scores among male graduates, post STARS graduates completed
more STARS-approved hours for transfer than pre STARS male
graduates among both whites and minorities.

6. No significant differences existed among student type
(nontraditional or traditional students) who completed STARS-
approved hours. Post STARS graduates, both traditional and
nontraditional, did have higher mean scores of STARS-approved
hours than pre STARS traditional and nontraditional graduates. Traditional post STARS graduates completed more STARS-approved hours than nontraditional post STARS graduates. Traditional pre STARS graduates completed the least amount of STARS-approved hours, along with nontraditional pre STARS students.

7. A student’s GPA did not have a significant effect on the number of STARS-approved hours students completed. The largest frequency of GPAs earned by graduates in the study was 2.76-3.0.

8. Status did not have a significant effect on the amount of STARS-approved hours completed. Native students earned more STARS-approved hours than transfer and reverse transfer students. Reverse transfer UA students earned more STARS-approved hours than those students who transferred from a private institution. Male transfer and reverse transfer post STARS students earned more STARS-approved hours than pre STARS students. Among females, post STARS transfer or reverse transfer graduates earned more STARS-approved hours than female pre STARS graduates.
9. An analysis of additional data revealed a significant relationship between group predictor variables using gender, student status and pre and post STARS status. Post STARS native male and female graduates earned more STARS-approved hours. Male transfer and reverse transfer post STARS students earned more STARS-approved hours than pre STARS students. Among females, post STARS transfer or reverse transfer graduates earned more STARS-approved hours than their female counterparts.

**Implications and Recommendations for Further Research**

An analysis of data for the present study, including the review of literature and research has led to the development of the conclusions, recommendations and implications for further research and practice. The research findings of this study should not only be used as a guide for SSCC, and the STARS articulation program, but also for all two-year institutions in the state of Alabama. All STARS articulated courses are guaranteed to transfer to any Alabama public four-year institution, as mandated by state legislature, thus saving the student time, money and simplifying the transfer process. Parents and the state benefit since STARS-approved courses are guaranteed to transfer. It has been estimated that since the program began in 1998, STARS has saved the
state of Alabama and tax payers millions of dollars that might have been lost on courses that may not transfer to public four-year institutions (Sessions, 2008).

Both two-year and four-year colleges’ benefit from the STARS program since there is a structured and more effective method for academic advisement and determining which courses will transfer. Students and community colleges are aware and know what courses are needed not only for AA/AS degree requirements due uniform degree alignment, but courses needed for transfer.

The following recommendations for future research are proposed based on the results of the study:

1. Research for the study focused on a random sample of graduates who graduated from SSCC between pre STARS (1992-1997) and post STARS (2002-2007) implementation. This study should be replicated at all two-year state institutions to determine if the program has had a similar impact statewide on STARS-approved hours completed for transfer from Alabama’s community colleges. Use of research findings would not only benefit the STARS program, Alabama’s community colleges, and four-year institutions, taxpayers, parents and students, but the state as a whole.
2. In order to acquire federal financial aid, students are required among other things to demonstrate financial need, qualify to enroll in post secondary education, be a US citizen, and maintain satisfactory academic progress while in school (GAO, 2005). Due to federal financial aid regulations, community college students are required to complete courses appropriate to their program of study for degree requirements (Cousette, 2008). Further research is needed for a careful and detailed study on STARS-approved courses completed by students who receive financial aid compared to those students who do not receive financial aid. Research would not only benefit institutions for federal reporting purposes, but college advising practices and if federal financial aid students are more focused by taking appropriate articulated courses for transfer compared to non-financial aid students.

3. Academic advising plays a significant role in assisting with appropriate course selection for degree requirements, transfer and retention. Advising is also extremely important for potential transfer students (Wechsler, 1989). According to Heisser (2002), academic advising is one of the major social aspects of the college experience that affects a student’s decision to complete a degree or
drop out of college. A further study comparing the advising practices of community college academic advisors to community college faculty advisors utilizing the STARS program is needed. Use of the findings could determine if academic advisors or faculty advisors lack any deficiencies in advising using STARS and if further training is needed on the STARS program for faculty advisors or academic advisors.

4. The completion rates of students who utilize STARS should be studied. Progress tracking from the time a community college student consults a STARS contract to graduation from a community college and a four-year college should be studied for further retention research on those who utilize the articulation program. The matriculation rate and the amount of time it takes for a student to complete an associate degree on to the bachelors degree could be used to assist with state postsecondary level and STARS reporting.

5. Further studies should examine those students who complete a technical degree and later decide to transfer in order to earn a four-year degree. Study research should focus on course deficiencies students lack by completing an occupational degree and how many lower division 100 and 200 level courses students are required to
complete before obtaining junior status at a four-year institution.
Further research could assist community colleges in aligning its
technical program curriculum with alternative courses students
may complete at the two-year level in order to transfer to a four
year college. Also, bilateral institutional agreements, or a “2+2”
technical degree program could be developed between two-year
colleges and four-year colleges to ensure that students who
complete a technical degree and later decide to pursue a four-year
degree have meet the lower level deficiencies needed to complete a
bachelor’s degree.

6. A detailed and careful study comparing STARS to another
southeastern state articulation program is needed for further
research to compare the effectiveness of STARS with other
articulation programs. Research findings could assist STARS with
expanding its articulation services beyond those that are offered to
students who utilize the program. A comparison of STARS to
another state articulation program could provide useful
information and insight for developing new resources to assist
students who plan to transfer.
7. Further research on student transfer majors should be examined. Research should focus on the student’s major and if STARS articulated courses are completed appropriate to a four-year transfer major or if courses are STARS-approved articulated courses that may transfer to a four-year institution as elective hours earned and not as articulated approved hours towards an academic major. Research findings would assist STARS with information outlining program success when students transfer, and if those courses that transfer are articulated approved courses that would count towards a college major.

8. Much research has made reference to two preferred advising styles: developmental and perspective. According to Alexitch (2002), developmental advising simply goes beyond advising a student of what courses to complete for a degree and signing a registration form. Developmental advising recognizes the importance of student development and considers the well being of the student. The advisor cares about student matriculation and development. Perspective advising entails advising in which a student is directly told what requirements are needed to complete a degree. There is no real advisee-advisor relationship or mentoring.
When examining gender, study data findings revealed that study males completed more STARS-approved hours than females. In order to assist with gender differences in transferable STARS-approved courses completed, further research on female and male students should be compared to determine if additional mentoring or which preferred advising style may be needed for those students who complete fewer STARS-approved hours in order to increase the amount of articulated credit completed among both genders for transfer.

9. Currently, in the state of Alabama, there are no statewide articulation agreements with private in-state institutions. Measures to create articulation agreements with private state institutions should be examined, especially among those transfer majors that may only be program specific at certain private four-year institutions. Those community colleges that are located near private institutions could be a starting point and serve as a pilot group for developing articulation agreements between private and two-year state institutions.
Discussion of Findings

As mentioned earlier, before the implementation of transfer articulation programs, community college students were not assured that their credits would transfer from a community college to a four-year institution although students earned an associate degree. Transfer is an important community college mission. Although maintaining transfer agreements requires a considerable commitment, these agreements are useful because they allow for a transparent and smooth transition from a two-year to a senior institution.

An analysis of research data has shown that students have earned more STARS-approved hours since the implementation of the STARS program at SCC when examining academic transcripts of associate degree graduates pre and post STARS implementation. Findings from the research study are consistent with the literature, which suggest that articulation agreement information is vital for prospective transfer community college students since it ensures that courses students complete at a two-year college will prepare them for upper division collegiate demands and obstacles that may be faced during the process of transferring. Most importantly, students can be assured that their courses will transfer to a four-year institution.
REFERENCES


*Arkansas Course Transfer System (ACTS)*. Retrieved on February 7, 2008 from [http://www.acts.adhe.edu](http://www.acts.adhe.edu)


*Florida's Official Online Student Advising System (FACTS)*. Retrieved on October 15, 2007 from [http://www.facts.org](http://www.facts.org)


Statistical Package for Social Sciences (SPSS) version 16.0.


Two plus two pathways to success: Planning on pursuing a bachelor’s degree. Retrieved on January 7, 2008 from [http://www.facts.org/cgi-bin/eaglelec](http://www.facts.org/cgi-bin/eaglelec)


APPENDIX A

LETTER REQUESTING INFORMATION FROM STARS
Keith Sessions, Ed D  
Executive Director AGSC/STARS  
LL Adams Administration Building  
Troy University  
Troy, Alabama 36082

Dear Dr. Sessions,

I have enjoyed corresponding with you over these past couple of months concerning AGSC/STARS. I would really appreciate your willingness in the process of helping me fulfill the requirements towards my doctoral degree at Mississippi State University.

Currently, I am employed at Shelton State Community College where I am responsible for degree audit and transfer credit evaluation. My dissertation study will involve both two year colleges and public four year colleges/universities in the state of Alabama.

I would like to remind you that the information obtained will be strictly for the purpose of my dissertation. Each university’s participation will be voluntary and I can assure confidentiality. Data from this study will be of great value to STARS/AGSC, Alabama’s community colleges, public universities and the state. Results from this study will be available upon your request. I look forward to hearing from you soon.

Sincerely,

Khristy Large  
Doctoral Candidate  
Mississippi State University
APPENDIX B

LETTER REQUESTING DATA FROM

SHELTON STATE COMMUNITY COLLEGE
Khristy Large
Doctoral Candidate
Community College Leadership Program
Mississippi State University

May 23, 2008

Mark Heinrich, PhD
President
Shelton State Community College
9500 Old Greensboro Road
Tuscaloosa, AL 35405

Dr. Heinrich,

Thank you for granting me permission to conduct my dissertation study on our AA/AS degree graduates. Per our discussion, my study will involve graduate data from Shelton State pre and post STARS implementation.

I can assure you that the information obtained will be strictly for the purpose of my dissertation and measures to ensure confidentiality will be taken. Data from this study will be of great value to STARS/AGSC and Alabama’s community colleges. Again, thanks for your cooperation and support in conducting my research.

Sincerely,

Khristy

Khristy Large
APPENDIX C
PERMISSION LETTER FROM STARS
February 5, 2008

Mrs. Khristy Large
2133 Lenox Drive
Tuscaloosa, AL 35405

Dear Mrs. Large,

Thank you for your interest in our program. More specifically, thank you for your interest in focusing your dissertation research on the success, or lack thereof, of our program in assisting transfer students in Alabama.

This letter is verification that we have talked about your dissertation and that you have my permission to continue a dialog with me and/or my staff in order to obtain the necessary information to complete your doctoral work. My participation is completely voluntary. Due to privacy laws, I will not be able to share personal information (names, addresses, phone numbers, e-mail addresses, etc.) about students who use the STARS System; however, I can share with you specific usage data (numbers) that contains non-personal student information.

I look forward to working with you as you conduct your research. I also look forward to reading your final findings once you have completed your study.

Sincerely,

[Signature]

Keith Sessions, Ed. D.
Executive Director
APPENDIX D

MISSISSIPPI STATE IRB APPROVAL LETTER
July 29, 2008

Khristy Large

RE: IRB Study #08-073: A Study of Statewide Transfer and Articulation Reporting System (STARS) Approved Courses Completed at an Alabama Community College

Dear Ms. Large:

This is to reflect that the modification request submitted to change the study title has been approved on 7/29/2008. The above referenced title is the approved title.

This project was originally reviewed and approved via administrative review on 3/17/2008 in accordance with 45 CFR 46.101(b)(4). 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. The first of these changes is the implementation of an approval stamp for consent forms. The approval stamp will assist in ensuring the IRB approved version of the consent form is used in the actual conduct of research. You must use copies of the stamped consent form for obtaining consent from participants.

Please refer to your IRB number (#08-073) 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 Christine Williams at cwilliams@research.msstate.edu or call 662-325-5220.

Sincerely,

Christine Williams
IRB Compliance Administrator

cc: Dr. James Davis
APPENDIX E

LETTER OF PERMISSION TO RE-PRINT

FIGURE 2.1
Ms. Strombitski,
I am a doctoral student at Mississippi State University. I would like to request permission to reprint your Transfer and articulation policies, full time-equivalent fall enrollment, and percentage distribution of enrollment in public two year institutions by state: 2000. I have attached a copy of this table.

Thanks,
Khristy Large

--
This message has been scanned for viruses and dangerous content by MailScanner, and is believed to be clean.

From: Mary Ann Strombitski [mailto:MStrombitski@ecs.org]
Sent: Thursday, June 05, 2008 10:20 AM
To: Large, Khristy
Cc: Kyle Zinth
Subject: Re: Permission to reprint chart

Khristy,
We are pleased to grant permission as long as you continue to cite the Education Commission of the States as shown at the bottom of the table. Thank you for your interest in resources provided by ECS.
Mary Ann

Mary Ann Strombitski, APR
Director of Communications
Education Commission of the States
(303)299-3609
fax (303)296-8332
APPENDIX F

LETTER OF PERMISSION TO RE-PRINT

FIGURE 2.2
Large, Khristy

Mr. Young,

My name is Khristy Large. I am a PhD student at Mississippi State University. I would like to request permission from the GAO to reprint a figure "The Evaluation Process of Transfer Credits" published in your October 2005 Congressional Report entitled Postsecondary institutions could promote more consistent consideration of transfer work by not basing determination on accreditation."

I would like to publish this figure with my doctoral dissertation.

Thanks,

Khristy Large

-----Original Message-----
From: Charles Young [mailto:YoungC1@gao.gov]
Sent: Tuesday, June 24, 2008 12:32 PM
To: kll163@msstate.edu
Subject: Re: Permission to Reprint Chart

Ms. Large,

Our work is not under copyright so you are free to reproduce it so long as you cite the source.

Chuck Young
GAO

>>> <kll163@msstate.edu> 6/24/2008 1:24 PM >>>
APPENDIX G

DATA RECORDING FORMS

FOR DATA COLLECTION
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### SHELTON STATE COMMUNITY COLLEGE DEGREE REQUIREMENTS
**FOR AN ASSOCIATE IN ART OR ASSOCIATE IN SCIENCE DEGREE**

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<td>(3) History</td>
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<th>AREA V - PRE-PROFESSIONAL, PRE MAJOR AND ELECTIVE COURSES</th>
<th>19-23</th>
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<td>(Choose courses below based on STARS <a href="http://stars.troy.edu">http://stars.troy.edu</a> and the catalog of college to which the student plans to transfer)</td>
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APPENDIX H

VITA
VITA

Education:

2001- B.A.  The University of Alabama, Cum Laude

2003- M.S.  The University of Alabama
Concentration: Interactive Technology

2008- Ph.D.  Mississippi State University
Major Field: Community College Leadership

Professional Experience:


Teaching Experience:

2005- Present  Adjunct Instructor. Computer Science Department, Shelton State Community College, Tuscaloosa, Alabama.

2004  Adjunct Instructor. Computer Science Department, Reid State Technical College, Evergreen, Alabama.

Personal:

Born  Brewton, Alabama

Married  J. Gaston Large, III on December 18, 2004