

AN ANALYSIS OF THE IMPACT OF THE A⁺ SCHOOLS PROGRAM ON
STUDENT ENROLLMENT, CERTIFICATE OR DEGREE COMPLETION, OR
TRANSITIONING TO A FOUR-YEAR UNIVERSITY

A Dissertation presented to the
Faculty of the Graduate School of
University of Missouri – Columbia

In Partial Fulfillment
Of the Requirements for the Degree of
Ed. D. in Educational Leadership

by

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DECEMBER, 2009

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AN ANALYSIS OF THE IMPACT OF THE A+ SCHOOLS PROGRAM ON
STUDENT ENROLLMENT, CERTIFICATE OR DEGREE ATTAINMENT AND
TRANSITIONING TO A FOUR-YEAR UNIVERSITY

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ACKNOWLEDGEMENTS

First I thank my Lord and Savior, Jesus Christ. His power, saving grace and intervention in my life have made all the difference. To be adopted into a loving and caring family was truly accomplished by the hand of the Lord. Because my family lived the life of poor sharecroppers, I was taught the responsibility of hard work and the value of respecting others. We moved often which required a change in schools and adjustment in the structure of my school lessons. After spending the day working in the cotton fields, my mother spent many nights reviewing lessons with me as I struggled. My upbringing led me to a lifelong desire to learn and teach because I realized education is the key that unlocks any door to any person. My four younger sisters followed in my footsteps and have spent their lives teaching others and our baby brother became a nurse, also comfortable in a service profession. My mother, who died so young at age 45, would be proud, she instilled in me the love for learning by first encouraging me to read and later teaching me how to work. My father always expected us to do our best while showing us to respect our fellow man. Regardless of circumstance, we are truly created equal.

This labor I want to dedicate to my husband, David Holloway, who believed in me, nudged me and would not let me stop. For thirty-seven years, he has been my knight in shining armor, always there to defend my honor and champion my quests. We have worked together to achieve a life dedicated to family and eventually adopted our son, Patrick, who is now twenty-two years of age and a daily source of inspiration for me. I feel the Holloway family adopted me as one of their own. I have worked with them for more than 30 years in their successful family business, Holloway Lumber Company. For more than sixty years, it has provided livelihood for members of the Holloway family;

over the years, grandfather, aunt, parents, uncles, cousins, nieces and nephews have worked at the business. Now David, his two younger brothers, and three nephews work there. Always their goal is to provide a service to the community and treat customers fairly and with a caring attitude. Work is not the only tie that binds the Holloway family for they have frequent get-togethers that celebrate family members' birthdays and achievements.

David's only sister, Diane, has played an instrumental role in my educational endeavors. She encouraged me to quit working at a factory and enroll in college. She helped me complete many tasks toward the goal of graduation and job searches. Without her continued support and attention to detail, I would not have accomplished a successful career in education.

I wish to express my appreciation and gratitude to my committee members: Dr. Paul Watkins, Dr. Sharon Gunn, Dr. Bertrand, Dr. Bratberg and especially to Dr. Ruth Ann Roberts, my advisor and mentor, who encouraged me and provided me the support I needed to accomplish this goal. My cohort companions, Maude Harris, Janet Moak, and Tom Eaton, will always have a special place in my life, at a time filled with demands we meshed our talents to successfully achieve our goals while putting our family, jobs and friends on stand-by.

AN ANALYSIS OF THE IMPACT OF THE A⁺ SCHOOLS PROGRAM ON STUDENT
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A FOUR-YEAR UNIVERSITY

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ABSTRACT

The purpose of this research was to discover the number and gender of students utilizing A+ funds to enter a mid-western community college, obtain a certificate or an associate degree, and/or transition to a four-year college or university to determine whether or not the intent of the A+ Schools Program was accomplished. The intent of the policy makers was that this high school reform effort would create a well-prepared workforce by encouraging high school graduates to succeed at some form of post-secondary education.

This study utilized pre-existing data gathered by the A+ Coordinator and the Assistance Institutional Researcher at the mid-western community college and the Department of Higher Education database. Participants consisted of A+ students and non-A+ students enrolled full-time at a mid-western community college in the state of Missouri during the period of the first eleven years in which the A+ Program incentives were made available.

Results from the investigation of the impact of the A+ Schools Program at the mid-western community college was found to have no significant impact on increased enrollment, certificate attainment, associate degree attainment and transition to a four-

year institution. A significant difference was found between the percentages of A+ and non-A+ students who earned associate degrees in the State of Missouri. While data reflecting gender differences for certificate attainment was lacking, the research found no significant difference among gender categories of A+ students and non-A+ students regarding enrollment, associate degree attainment and transfer to a four-year institution.

A common framework for effective collection, analysis and use of data on student outcomes at the community college level was recommended. Additional recommendations include: (a) increase connections with K – 16 educators to provide a seamless path for the success of Missouri students, (b) encourage all high schools in Missouri to adopt the requirements of the A+ Schools Program to ensure all students in Missouri graduate prepared to pursue post-secondary education and employment, and (c) promote vocational programs that provide necessary skill and training for students to pursue post-secondary education and employment.

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CHAPTER ONE

Introduction to the Study

“The A+ Schools Program may be the least heralded success story among Missouri’s school reform efforts of the 1990s,” praised then Governor Mel Carnahan (Designation of New A+ Schools, news release, 1999). Enacted into law as one measure of the Outstanding Schools Act of 1993, the A+ Schools Program offered qualified high school graduates monetary incentives that could be applied to community colleges or vocational schools in the State of Missouri (Missouri Department of Elementary and Secondary Education, 2001). In the years following inception of the A+ Schools Program, adjustments in program administration have occurred along with dynamic changes resulting from unique relationships between and among high schools, community colleges and four-year universities. Continued funding and further evolution of the A+ program may be influenced by the impact of the A+ Schools Program evaluations. This study examined the impact of the A+ Schools Program on the number and gender of students who enroll in a mid-western community college, obtained certificates or associate degrees from the mid-western community college, or transitioned to a four-year college or university. An introduction to the research is provided in this chapter, including the background of the study; conceptual framework for the study; a statement of the problem; the purpose of the study; research questions; limitations and assumptions; and the definition of key terms that are used throughout the research.

Background

The A+ Schools Program (see Appendix A) was designed as a school-improvement initiative established by the Outstanding Schools Act of 1993. Former

Missouri Governor Mel Carnahan summarized the Outstanding Schools Act of 1993 with the following descriptive phrase: “a no nonsense plan for educational reform and workforce development” (Carnahan, 1993). The A+ Schools Program was developed to support students who were not planning to attempt post secondary education by providing the motivation to develop skills and knowledge to graduate from high school and transition to high skill, high wage jobs (Carnahan, 1993). The focus of the A+ Schools Program was to create career based training opportunities for non-college bound students through job-shadowing, internships, or apprenticeship, thereby encouraging them to graduate from high school prepared to receive job training (Carnahan, 1993).

In the decade from 1990 to 2000, educational reforms across the nation shifted toward utilizing a performance-based element (U. S. Department of Education, National Center for Educational Statistics, 2003). Policy makers at the state level used research findings that focused on raising academic standards while holding schools accountable for student performance to draft Senate Bill 380, also known as the Outstanding Schools Act of 1993 (OSA, 1993). Their goal was to develop a model that incorporated factors identified in successful schools as the foundation for the A+ Schools Program. The OSA of 1993 authorized the development of state curriculum standards, frameworks and student assessments (Outstanding Schools Act, 1993). The A+ Schools Program encouraged high schools across the state of Missouri to prepare students to pursue post secondary education or enter the workforce in a high wage job and established three basic requirements for high school administrators who chose to accept the program. The three requirements were: (a) raise academic standards, (b) reduce the dropout rate, and (c) provide career-oriented learning opportunities for all students (Missouri Department of

Elementary and Secondary Education, 2001). To address these requirements the initiative further required staff of participating high schools to develop measurable performance standards, identify knowledge, skills and competencies required of students, discontinue general track classes, establish rigorous coursework in basic academic subjects, form a partnership plan in conjunction with local business leaders and post-secondary institutions, and retain a full-time A+ Coordinator (Missouri Revised Statutes, 2001).

The A+ Schools Program provided financial incentives to graduates that met specific criteria required of them by their high school administrators. To qualify for the educational benefits, students were required to (a) attend a designated Missouri public high school for at least three years, (b) earn a grade point average of 2.5, (c) have at least 95% attendance during the four years in high school, (d) complete fifty hours of unpaid tutoring or mentoring, (e) maintain a record of good citizenship and avoid the unlawful use of drugs and alcohol, and (f) complete a Financial Aid to Students Federal Application (2001). The monetary incentives could only be applied to community colleges or vocational schools in the State of Missouri (2001). State reimbursements covered the cost of tuition for up to six semesters providing the A+ student maintained eligibility by enrolling full time and earning a cumulative grade point of at least 2.5.

During the years since inception, modifications to the A+ Schools Program have occurred as a result of budget cuts, equity concerns and uninformed perceptions. While effective administration of the A+ Schools Program should theoretically rely upon informed data about the failures or successes of the program, few analyses at the post secondary level are available. Continued funding and further evolution of the A+ program may be influenced by evaluations of the impact of the A+ Schools Program.

Goodlad (2002) compared school reform to an enterprise that develops its own social, political, and economic capital that is resistant to program success or failure discovered through research. Evidence of this phenomenon is found within the A+ Schools Program. Contrary to the original premise, local school boards at high schools working to be designated must fund internal changes necessary to revise curricular offerings and administer the requirements of the A+ Schools Program. Administrators at some high schools chose not to seek A+ designation and instead created a similar monetary award within their system. Within the taxing district of the mid-western community college in this study, four of the nine high schools did not have A+ Schools Program designation. These four districts appear in the bottom 27% of Missouri's high schools when ranking school districts by the amount of assessed valuation per eligible pupil (Farley, 2007). This factor indicated school districts in rural areas have less discretionary funds from local opportunities such as commercial businesses and therefore receive a higher percentage of their funding from state and federal sources that are earmarked for specific a purpose (Farley, 2007). In spite of meager local funding, the school boards in three of these four school districts approved locally funded programs similar to the A+ Schools Program (Krakowiak, 2008).

Community colleges and technical schools addressed requirements of the A+ Schools Program by hiring additional staff or increasing responsibilities of existing staff (L. Clark, personal communication, December 5, 2003). Articulation agreements have been established with participating high schools and technical schools, community colleges and four-year colleges. In August 2008, trustees from the mid-western community college voted to create a district-wide scholarship program similar to the A+

Schools Program (Krakowiak, 2008). The scholarship will be available to in-district freshman who enroll in the Fall 2009 semester (S. Cookson, personal communication, June 18, 2009).

Four-year colleges and universities in Missouri are trying to compete with community colleges for students who are eligible for the A+ Schools Program. To compensate for the A+ funding directed to community colleges, four-year institutions have created in-house scholarships available to freshmen students who graduated as students with A+ eligibility (M. Bardwell, 2001). Some four-year institutions have created a unique teacher education program that allows the student to complete the first two years of study at the community college, complete one year at the four-year institution, and the last year back at the community college with an internship at the public school (W. Worts, personal communication, May, 24, 2000). Creative cooperation at all levels has increased student opportunities.

During eleven years of growth of the A+ Schools Program, statistics from the Missouri Department of Elementary and Secondary Education report high schools designated as A+ Schools Program participants have recorded improved student academic performance, better student attendance, lower student dropout rates, and fewer student discipline problems when compared with similar factors in non-designated high schools (Missouri Department of Elementary and Secondary Education, 2007). Lee, Mueser, and Podgursky (2004) reported designated high schools have reduced their dropout rate and raised academic standards, both indicators of a positive impact of the A+ Schools Program at the high school level. Lee, Mueser, and Podgursky (2004), Galbreath (2007), and Jochems (2004) identified a lack of comprehensive analyses of the post

secondary aspects of the A+ Schools Program. There is a need to compile and analyze data to identify the successfulness of the A+ students who enrolled at the community college to utilize funding from the A+ Schools Program. The focus of this study examines the number and gender of students enrolled in a mid-western community college and compares the success of A+ students with non-A+ students in earning a certificate, obtaining an associate degree, or transitioning to a four-year institution during the eleven years the A+ Schools Program has been in operation. This study provides comparisons of A+ and non-A+ students regarding the impact of the A+ reform on the enrollment at a mid-western community college, completion of a certificate or associate degree and transition to a four-year institution.

Conceptual Framework

Comparison of educational performance data in Missouri's schools indicates Missouri has a need for revision of educational policies to improve post secondary education. (Measuring Up, 2006). According to statistics provided by the Rural Trust, schools in Missouri were found to have a larger percentage of schools in rural areas, a larger percentage of students attending small rural schools, and a larger percentage of rural children living in poverty than the other 49 states (Beeson & Strange, 2003). Research by Beeson and Strange identified indicators depicting Missouri as a state that ranks seventh worst in the nation to include per capita rural income and rural teacher salaries (Beeson & Strange, 2003). In spite of this gloomy economic outlook, during the past eleven years Missouri has made progress on four of the six performance indicators of higher education (Measuring Up, 2006.) However the state continues to fall behind when viewing indicators that reflect preparation of students for higher education and enrolling

in college immediately after graduation (Measuring Up, 2006). Measures to address these downward trends need to be considered to bolster Missouri's ability to prepare students for education and training beyond high school. Only 53% of Missouri's high school graduates enroll in college the fall after they graduate (Rocha & Sharkey, 2005). To further exacerbate the issue, only 18% of Missouri's students enrolling in higher education completed a certificate or associate degree (Measuring Up, 2006). Funding successful school reform in Missouri is of utmost importance to taxpayers, legislators, educators and the students whose lives are directly affected.

The purpose of this study is to determine the impact of the A+ Schools Program on enrollment in a mid-western community college and to determine the success of A+ students obtaining certificates, associate degrees, or transitioning to a four-year university. To accomplish this purpose, the researcher presents a document study of eleven years of data (1997-2007) to identify community college enrollment changes regarding students identified as either A+ students or non-A+ students and in gender categories. Trends are identified in measures of student successes utilizing funding from the A+ Schools Program to further education at the post-secondary level. Successes are recognized by the following measures: (a) obtaining certificates, (b) earning an associate degree, or (c) transitioning to a four-year university. This study addresses three primary issues. One area of study focuses on full time fall enrollment trends of males and females at a mid-western community college in Missouri. Additionally, the data is viewed in the categories of A+ students and non-A+ students. A second area of study addresses two indicators of success, (a) the completion of a certificate by A+ students and non-A+ students and (b) the attainment of an associate degree A+ and non-A+ students at the

mid-western community college. The third aspect addresses the rates of transfer to four-year institutions by A+ and non-A+ students.

Statement of the Problem

In the years following inception of the A+ Schools Program, adjustments in program administration have occurred along with dynamic changes resulting from unique relationships between and among high schools, community colleges and four-year universities. Continued funding and further evolution of the A+ program may be influenced by A+ Schools Program evaluations of its impact. This study provides comparisons of A+ and non-A+ students regarding the impact of the A+ reform on the enrollment at a mid-western community college, completion of a certificate, obtaining an associate degree and transition to a four-year institution. This research examines existing documents from a ten-year period beginning with 1997, the first year financial incentives were available to A+ students. The research evaluates the impact of the A+ Program in regard to the number and gender of A+ students enrolling at a mid-western community college, completing a certificate, obtaining an associate degree, and transitioning to a four-year university.

The A+ Schools Program originally proposed to open new doors for recent high school graduates to higher education, prepare our youth for the workplace, and introduce students to the teaching profession (Carnahan, 1993). Achieving these goals was considered “paramount to the solvency, revitalization, and economic well being of the state” (Missouri Community College Association, 1998). During the span of eleven years, additional schools have been designated as A+ Schools, increasing the total number of A+ high schools in Missouri to 231 for 2007-08 (Missouri Department of

Elementary and Secondary Education, MODESE, 2007). After reaching the high appropriation of \$19.3 million in 2001-02, state appropriations have declined while the number of eligible students has grown (MODESE, 2007). More recently an upward climb in appropriation of \$21.8 million began the fiscal year 2008 and continues with an appropriation of \$25.3 million for fiscal year 2009 (M. Bardwell, personal communication, June 23, 2009).

Evidence shows that enrollment in some form of post secondary education equates to a higher quality of life. Pennington (2004) cited the 2001 research of Carnevale and Desrochers to have found “one year of postsecondary education can increase lifetime earnings by as much as fifteen percent”. Similar to the trend found in Missouri, Pennington noted an increase in the number of high-school graduates who enroll in higher education, while the percentage of graduates who complete any level of postsecondary education has yet to rise significantly (2004). This study informs the reader regarding the impact of the A+ Schools Program on student accessibility and success at a mid-western community college during the initial eleven years the program was operational.

Purpose of the Study

This research examined data during the first eleven years the A+ Schools Program was in effect to identify the number and gender of students utilizing A+ funds to enter a mid-western community college. The research evaluated the effectiveness of the A+ Program in regard to the number and gender of students enrolling at a mid-western community college, completing a certificate or associate degree, and transitioning to a

four-year university. The information was utilized to determine whether the intent of the A+ Schools Program was achieved.

Data gathered in 2006 by the National Center for Public Policy and Higher Education reflects 18% of Missouri's students enrolling in higher education complete a certificate or associate degree (Measuring Up, 2006). A report, conducted by Barnes, Ehlert, Worts, Larivee, and Patterson in 1999, found 29% of the first cohort of A+ students who graduated high school in 1997 completed a certificate or associate degree within the two-year time frame (Barnes, et al 2001). To determine if this was an upward trend, this study examined eleven years of data (1997 – 2007) in order to identify the impact of the A+ Schools Program on the success of A+ students in achieving a certificate of associate degree while utilizing A+ funds to attend a mid-western community college.

Patterns of transfer between community colleges and four-year institutions are no longer clearly defined (Townsend, 2001). Students from a four-year institution may take classes from a community college over the summer. Students may co-enroll in classes at both the community college and a four-year institution. Other students may start at a four-year institution and reverse transfer or attend a community college to earn a certificate or degree before earning a baccalaureate degree (McPhee, 2006). In research comparing students who only attended four-year institutions with community college attendees, MCPhee found that both transfer students and reverse transfer students were less likely to transfer all their credits even when an associate degree or certificate was completed at the community college (McPhee, 2006).

One constant finding in research studies over 20 years indicates that college students who transfer from a community college are significantly less likely to complete a four-year degree than students who begin at four-year institutions (Education Commission of the States, 2004). Few studies reflect the success or lack thereof for A+ students in transferring to a four-year university. This study examines the impact of the A+ Schools Program on the number of A+ students who successfully transfer to a four-year institution. In order to determine the effectiveness of the A+ Schools Program, specific research questions will address how the A+ program has impacted the success of A+ students while attending a mid-western community college.

Research Questions

This study compares A+ and non-A+ students regarding enrollment, certificate attainment, associate degree attainment and transfer to a four-year institution during the first eleven years of A+ program implementation. Gender comparisons were differentiated when the data was available. The following research questions are addressed in this study:

1. Has the A+ Schools Program resulted in an increase in community college fall enrollment?
2. Is there a significant difference among A+ students, non-A+ Students and gender of students in fall enrollment in a mid-western community college?
3. Is there a significant difference between A+ and non-A+ students in community college certificate attainment?
4. Is there a significant difference among A+ students, non-A+ students and gender of students in community college associate degree attainment?

5. Is there a significant difference among A+ students, non-A+ students and gender of students in transitioning from a community college to a four-year college?

Limitations and Assumptions of the Study

This study is limited to the data identified in one mid-western community college and may not be representative of other community colleges across the state. Participation in the A+ Schools Program among high schools was voluntary; therefore reasons some schools chose to meet the criteria while others did not remain unknown and could alter the findings. Student participation within each designated high school was an individual decision, which could make it difficult to pinpoint cause and affect relationships simply based on students who chose to participate in the A+ Program.

It is assumed that the reporting of the data regarding students enrolled in the A+ Program during the eleven-year period was accurate. Students who are identified as eligible to receive funds from the A+ Program were guaranteed a time frame of four years to utilize the A+ funding. It is assumed that using a eleven years of data from one mid-western community college will be sufficient to generalize trends.

Definition of Key Terms

Terms used in the discussion of the research problem and data handling include the following:

A+ Program. Established by Senate Bill 380 in 1993, the program provides the cost of tuition for up to six semesters at a public two-year college or vocational school in the state of Missouri to graduates of A+ designated high schools. Students must meet specific criteria (a) earn a GPA of 2.5, (b) have at least 95% attendance over the four years of

high school, (c) attend an A+ high school for at least three consecutive years, (d) perform fifty hours of unpaid tutoring or mentoring, and (e) maintain good citizenship status (RSMo 160.545, 1993).

A+ Financial Incentive Program at the Community College. A+ financial incentives may be used to pay for up to six semesters of tuition and common fees at Missouri community colleges, area vocational-technical schools or state technical schools. Eligible students must annually apply for a Federal Pell Grant, enroll full time, and maintain a cumulative 2.5 grade point average (Three Rivers College Catalog, TRCC, 2007).

Associate of Arts Degree. A degree granted by the community college that requires a minimum of 64 credit hours with grade point average of 2.0 or higher, primarily for transfer to a four-year university (TRCC, 2007).

Associate of Arts in Teaching Degree. A statewide-specialized degree that is intended for transfer to approved teacher education programs at Missouri four-year colleges and universities (TRCC, 2007).

Associate of Science Degree. A specialized degree granted by the community college that requires a minimum of 62 credit hours, intended for transfer into a pre-professional program (TRCC, 2007).

Community college. A public two-year institution subsidized by local, district and state funds that typically offers certificate and associate degree programs (Missouri Coordinating Board for Higher Education, MCBHE, 2008).

Enrollment. Full time enrollment at the community college level is defined as enrolled in a minimum of 12 hours during the fall semester (TRCC, 2007).

Full Time Equivalent (FTE). Students who enroll in a minimum of 12 hours in the fall semester (Enhanced Missouri Student Achievement Study, 2008).

GPA. The cumulative grade point average of students is a ratio computed by multiplying the grade points associated with the grade received by the number of semester hours for a course. The total is divided by the total number of semester hours attempted. (TRCC, 2007).

Graduation Rate. The graduation rate is found by dividing the number of students completing a program by the number of students entering the program during the same cohort (MCBHE, 2008).

Ineligible. A student who does not maintain a GPA of 2.5 or is not enrolled in a minimum of 12 credit hours will become ineligible to utilize A+ funds. Students may regain A+ eligibility by raising their GPA to 2.5 and enrolling full time (TRCC, 2007).

Measures of success. In this study, measures of success include completing a program to earn a certificate, achieving an associate degree, or transferring to a four-year institution.

Open admissions. A policy inviting all who have an interest in pursuing postsecondary education by walking through the open door of the community college (Education Commission of the States, 2004).

Retaining A+ Eligibility. To keep A+ eligibility at the community college level, a student must earn a GPA of 2.5 and enroll in a minimum of 12 hours per semester (TRCC, 2007).

Transfer. A student who moves between and among institutions and transfers credits to the new institution is considered to transfer (MCHBE, 2008).

Summary

This study is organized into five chapters. Chapter One is outlined in six sections. The first section of Chapter One presents an introduction to the study and begins with background information relating to the creation of the A+ Schools Program. The second section outlines the conceptual framework for this study and identifies the current state of educational performance in Missouri. The third section identifies the need to measure the impact of this legislative reform at a mid-western community college by identifying the success of students utilizing funds from the A+ Schools Program through student enrollment, achieving a certificate or associate degree, and, or transferring to a four-year university. Section four outlines the research questions and refers to the original goals of the A+ Schools Program. The fifth section of Chapter One summarizes the limitations and assumptions of the study. The last section of Chapter One provides definitions of key terms that are used in the study.

Chapter Two presents a review of the relevant literature for community college enrollment, school reform measures, the history and creation of established standards for student improvement and outlines the goals of the A+ Schools Program. Chapter Three provides a description of the research design and methods utilized in the study. Chapter Four reports the findings of the study and includes the data analysis. Chapter Five summarizes the findings and identifies the implications for further research.

CHAPTER TWO

Review of Related Literature

The creation of the A+ Schools Program was identified by Governor Mel Carnahan as accomplishing one of the most important education imperatives facing the State of Missouri: “to reach out to youngsters who are not headed to college, and keep them from dropping out of high school” (Carnahan, 1993). Current informational brochures from the A+ Schools Program have continued to reiterate the primary goal: “to ensure that all students who graduate from Missouri high schools are well prepared to pursue advanced education and employment” (Missouri Department of Elementary and Secondary Education, MODESE, 2007). During the eleven years of the A+ Program, more than 33,000 students have used the financial incentives appropriated by the state legislature for at least one semester (MODESE, 2007). The purpose of this study was to examine the impact of the A+ Schools Program on A+ student enrollment at a mid-western community college, the impact of the A+ School Program on A+ student completion of a certificate or associate degree or the impact on transitioning to a four-year university. Lachat (as cited in NASSP 2004) espoused the need for reliance on results with the following quote,

“What we have learned from eleven years of school improvement efforts is that focusing more on the process of change without a concurrent focus on results does not lead to any significant impact on student achievement.” p. 28

Community colleges collect volumes of data but fail to analyze the data in the context of results. Dougherty (1991) recognized the research on community colleges to be that of hortatory or anecdotal nature rather than systematically evaluative.

Chapter Two is organized into four sections, with an overview of the establishment of community colleges and the unique characteristics they possess presented in the first section. The second section of Chapter Two highlights research concerning the community college open admissions policy, enrollment patterns, certificate or associate degree attainment rates, and rates of transfer to four-year institutions. The third section outlines a brief history of community colleges with emphasis on the mid-western community college involved in this study. The fourth section reviews current literature on the key factors essential for success in higher learning. This literature review includes a synopsis of existing research regarding the A+ Schools Program and presents the specific goals and guidelines for the A+ Schools Program.

Community Colleges

Originally termed junior colleges and first established in the early 1900s across the nation and in Missouri, community colleges were created to fulfill a need for higher education at the local level whether the ultimate goal of attendees was attaining career training or an associate or baccalaureate degree (Missouri Coordinating Board for Higher Education, 2008). The premise for community colleges worked to dispel the thought that higher education was restricted to those ranking economically in the upper class. Boswell and Wilson identified the beginnings of the public commitment to provide open doors to higher education in 1947 when the Truman Commission called for legislation to establish low-cost public community colleges across the nation to establish accessibility to postsecondary education by supporting two-year institutions within commuting distance of all Americans (Education Commission of the States, 2004). Community colleges

created by this legislation were two-year public institutions viewed as a public benefit with the purpose of providing increased opportunities for higher education (Education Commission of the States, 2004). Phelan wrote a policy paper to describe the five functions of a community college as follows: (a) transfer of students to four-year universities, (b) technical and occupational education, (c) remediation, (e) training for business and industry, and (f) community service (Education Commission of the States, 2004).

In 1961 Missouri legislation established the creation of a junior college district system with the power to levy local taxes (Center for Community College Policy, 2006). After a failed attempt to establish an additional residence center nearby Southeast Missouri State University in 1962, the rural community members rallied and began seeking local opportunities to provide higher education to local residents (Forty Years of Progress, 2008). This policy led to the formation of a community college district in rural southeast Missouri in 1966 with a mission to provide equal educational opportunities to residents of the taxing district (Three Rivers College Catalog, 2007). The mid-western community college examined in this study began operation in various buildings scattered through a downtown area with an initial enrollment of 138 students and has grown to develop into the current campus that encompasses almost 80 acres with a student enrollment of 3,190 (Forty Years of Progress, 2008). The mid-western community college adapts to the fluctuating needs of the local community and provides for the diverse requirements of the community through training for the local workforce in 35 occupational-technical programs, continuing education credits, extended learning centers and more than 40 transfer programs (Forty Years of Progress, 2008).

Open Admissions Policy

Typically since inception, community colleges have operated with a policy of open admissions, which allows students direct access to higher education without exclusion in contrast to many four-year institutions (Dougherty, 1991). The policy of open admissions has created a dilemma for community colleges by making higher education more accessible to all students regardless of academic preparation or readiness thereby making attainment of a certificate or associate degree more difficult. Additionally the open admissions policy has guided the type of student enrolled in community colleges to form a different set of characteristics that include a greater percentage of students who: (a) attend part time, (b) attend multiple institutions before obtaining a certificate or associate degree, (c) enroll in more than one institution simultaneously, (d) transfer to other institutions, and (e) take time off from enrolling in higher education (Education Commission of the States, Boswell & Wilson, 2004). As a direct result of community colleges' commitment to open admissions policies and the type of students attracted to enroll in them, Phelan (2000) identified a need for remedial education. Community colleges have attempted to address this need by utilizing standard placement examinations in which completion of developmental coursework could be required prior to acceptance into coursework applicable to associate degree attainment.

Enrollment Trends

Community college enrollment in the United States reached 16,000 students in the early 1900s grew to 850,000 students in the early 1960s and has ballooned to more than six million students in 2002 (Phelan, 2000, U. S. Department of Education National Center for Educational Statistics, U.S. NCEs, 2008). Researchers identified enrollment

trends in the 1990s that depicted enrollment in community colleges across the United States as accounting for almost half of all undergraduate students (Phelan, 2000, Bailey, 2003). A more recent study by the National Center for Educational Statistics reported during the 2006-07 academic year, the number of students who enrolled in community colleges reached 6.2 million comprising 35 percent of all first time undergraduate students (U. S. NECS, 2008). Affordability, small class size, flexible scheduling, quick response to local needs, and continuous open enrollment have been identified as factors influencing the steady increase of enrollment in community colleges (Moltz, 2008). Another factor affecting the enrollment in community colleges that has continued to increase during the past twenty years includes students who are classified as non-traditional, comprising 67% of student enrollment (Education Commission of the States, Boswell & Wilson, 2004). Since 2003 fall enrollment in community colleges has remained a constant number of approximately 6.4 million students or 44% of all undergraduates compared with a continued increase of fall enrollment in four-year institutions (U. S. NECS, 2008).

Certificate or Associate Degree Attainment

“Completion of a certificate program is more likely to be a primary educational goal for first-generation students (Education Commission of the States, 2004, p. 26). Research indicated students who identify certificate or associate degree attainment or transfer to a four-year college as their primary educational goal are more engaged and more likely to achieve their goal, yet only 20% to 30% of all enrollees at a community college complete their associate degree, transfer to a four-year institution and then go on to earn a baccalaureate degree (Phelan, 2000). Dougherty (1991) found the following:

When controlling for differences in family background, academic aptitude, high school record, and educational and occupational aspirations, community college entrants, on average, receive 0.12 to 0.25 fewer years of education, 11% to 19% fewer baccalaureate degrees and significantly less prestigious and remunerative jobs than similar students entering four-year colleges (p. 372).

Dougherty (1991) postulated the lower rate of baccalaureate attainment could be categorized in three ways: (a) attrition during the first two years, (b) failure to transfer to a four-year college, and (c) attrition after transfer.

Transfer rates

Research statistics depict a challenging prospect for transfer students. In 1991 Dougherty found that transfer students comprise a sizeable portion of four-year college students. Yet, students who transfer from community colleges are significantly less likely to complete a baccalaureate degree than students who begin at a four-year institution (Sandy, Jonathan, & Hilmer, 2006). In the publication, *Keeping America's Promise*, Price cited the 2001 research of the U. S. National Center for Education Statistics that found approximately 25% of students initially enrolled in community college in 1989 transferred to a four-year college five years later (Education Commission of the States, 2004). The Educational Commission of the States reported one study in which less than half of the community college students who attained a certificate or associate degree prior to transferring were able to transfer all credits earned citing ineffective state policies as one barrier to the transfer process (McPhee, 2004). The Advisory Committee on Student Financial Assistance identified three basic junctures that are critical transition points for students enrolling in community college planning to obtain a baccalaureate degree:

enrollment, persistence and transfer (Johnson, 2008). Barriers that inhibit the success of students were recognized at each critical stage, especially when attempting to transfer (Johnson, 2008). Transfer challenges included (a) inadequate policies, (b) insufficient academic preparation, and (c) the need for financial aid (Johnson, 2008). National studies demonstrated a need for action to improve the success of students who attend community colleges with intentions of attaining a bachelor's degree.

Agreement on the definition of what constitutes a transfer has been contentious. In 1997 the intention of Transfer Assembly project was to gather consistent transfer data for all community colleges. Data was compiled from more than 400 community colleges that enrolled more than half of all first-time community college students and reported a transfer rate of 22% (Cohen & Sanchez, 1997). The Transfer Assembly project considered transfer students as those with no previous post-secondary experience who complete a minimum of 12 credits within four years (Cohen & Sanchez, 1997). Other studies have defined transfer rate as initial enrollment in a community college followed by subsequent enrollment in any four-year college within a period of five years (Dougherty, 1991). This study considered transfer students as students with no previous post-secondary experience who complete a minimum of 12 credits within four years and transfer some credit to the new institution.

A+ Schools Program, an Educational Reform

The literature review of effective practices in school reform was informed by the 12 principles of learning identified by the American Psychological Association (Mid-continent Regional Education Laboratory, McRel, 1993). The American Psychological

Association principles integrate theory with practice and can effectively frame school reform. The twelve principles are:

1. Learning is a natural process
2. Learners create and refine meanings
3. Learners integrate new knowledge with prior knowledge
4. Learners develop strategies related to the thinking process
5. Learning is influenced by self-awareness, personal values, expectations, states of mind and motivation to learn
6. Learners possess an intrinsic motivation to learn
7. Authentic learning tasks stimulate the learning process
8. Learning occurs in developmental stages
9. Learning is facilitated by interactions with others
10. Learning is facilitated in respectful, caring relationships
11. Learners have differing capabilities and preferences for learning strategies
12. Learning is filtered through cognitive, emotional and social experiences.

McClenney, as cited in the publication, *Keeping America's Promise*, identified six characteristics of a learner-centered institution that promote student success (Education Commission of the States, 2004). Those include (a) clearly defined outcomes, (b) systematic assess student learning, (c) engage students in active learning experiences, (d) utilize student data to guide decisions, (e) emphasize student learning in all processes, and (f) focus policies on learning. Research has identified focusing on learning regardless of the age level of the student can positively influence factors indicating student success. The task for community colleges must be to develop appropriate indicators of student performance that guide student learning and academic progress (Education Commission

of the States, 2004). Building school environments based on principles of motivation and social interactions can result in positive student involvement as measured by high attendance, few suspensions, low dropout rate, high graduation rate, and parent/student satisfaction, all goals inherent in the A+ Schools Program.

The next section outlines the specific goals and guidelines for the A+ Schools Program, to be used for comparison of the requirements of the A+ Schools Program with other successful reforms. The purpose of the review of literature is to identify and contrast specific aspects of effective school reform with outcomes from the A+ Schools Program to determine the responses of young adults to the incentives and the effectiveness of the policy.

Educational Policies for School Reform.

Webster's New Collegiate Dictionary provides a succinct definition of reform as improvement by change (Woolf, et al, 1977). While change means to do something different or in a different way, improvement is defined as progress toward a desired outcome. Therefore when measuring growth we must use our expectations or goals as guides to judge progress. Kliebard and Brouillette (as cited in Louis, Toole, & Hargreaves, 1999) suggest four categories of educational goals: rigorous coursework, focus on the process of learning, employability skills, and social justice. The A+ Schools model incorporates these important categories by establishing requirements for schools designated as A+ Schools and guidelines for students to follow if they are to graduate with A+ eligibility.

“The U.S. Department of Education defines comprehensive school reform (CSR) using eleven components that, when coherently implemented, represent a

“comprehensive” and “scientifically based” approach to school reform” (Borman, 2002). Those eleven components systematically list areas in the educational realm that must not simply accept but wholly champion the change. The eleven components include:

1. instruction is based on effective practices or scientifically based research
2. combines instruction with assessment, classroom management
professional development, parental involvement, and school management
3. high quality staff development
4. measurable goals with benchmarks
5. has staff support
6. shared leadership
7. meaningful involvement of parents, community in planning,
implementing, & evaluation
8. partners with external entity for support & assistance
9. annual evaluation
10. coordinates myriad of resources avail
11. evidence that program improves academic achievement of students

Missouri legislators incorporated all eleven components when the A+ Schools initiative was drafted with general provisions requiring rigorous coursework with measurable learning expectations in the high school curriculum, establishing a partnership with local businesses and post secondary institutions and identifying specific leadership for the program. Stringent requirements for schools desiring to achieve the designation as an A+ School and for students desiring to graduate with eligibility and maintain the eligibility status were established under the auspices of SB 380 (RSMo

160.545, 1993). Procedures for annually evaluating the effectiveness of the program at the high school level were authored by the Missouri Department of Elementary and Secondary Education (MDESE, 2001). These procedures required annual self-monitoring reviews. School reform has evolved to become the central focus of education by requiring personnel of public school districts to collect data that depicts how their schools compare in performance (Bernhardt, 1998, Smoker, 1999). Community colleges are required to employ staff to administer the A+ Schools Program and track A+ students who utilize funds from the A+ program. Senge noted that organizations must develop a culture to support change and risk taking before they can learn and evolve (1990). Continuous improvement occurs when the faculty and staff at all levels of education strive to become educational institutions whose policies are informed and guided by performance data that can be analyzed and integrated into revision of ineffective policies (DeFour & Eaker, 1998).

Historical Perspective of Reform Issues

Massell (1997) grouped education reforms into three eleven year periods, the focus of the 1970s was on balancing school finance, the 1980s promoted excellence in education, and the 1990s were characterized by the standards-based reform movement with a central theme of establishing measures of accountability. This review of literature will concentrate on the high school reforms that promoted excellence in education from the 1980s and the accountability measures begun in the 1990s.

School reform issues that highlight the difficulty in improving the educational success of all students pepper the educational literature. However, there exists a scarcity of journal literature and educational materials that focus on the effectiveness of current

educational policies that directly relate to high school age youth. A newsletter written by the Mid-continent Research for Education and Learning (McRel) reported that federal and state policy initiatives have historically concentrated on early childhood or early elementary education programs (2004). In fact current literature has reported, “historically high schools have been the stepchild of school reform efforts in this country” (National Association of Secondary School Principals, 2005). More recent reform efforts have focused on improving student achievement at the middle and high school level. As part of the No Child Left Behind Act (NCLB) of 2001, several initiatives focused on high school reform. This review of literature will concentrate on reform efforts at the high school level.

Missouri’s Historical Concerns.

According to statistics provided by the Rural Trust, several conditions in rural schools of the State of Missouri indicate a need for revision of education policy (Beeson & Strange, 2003). In comparing educational data from Missouri to the other forty-nine states, Missouri was found to have a larger percentage of schools in rural areas, a larger percentage of students attending small rural schools, and a larger percentage of rural children living in poverty (Beeson & Strange, 2003). Indicators that include per capita rural income and rural teacher salaries depict a state that ranks seventh worst in the nation (Beeson & Strange, 2003). These statistics set the stage for systemic reform.

A Nation at Risk

In 1983, Secretary of Education Terrel Bell chaired the National Commission on Excellence in Education. The outcome was a report “A Nation at Risk: The Imperative for Educational Reform” that transformed the country by garnering support for more

rigorous standards for students and teachers. The report compared achievement levels of students in the United States with those in other countries. Public press transformed average achievement levels to a lack of employability skills that would directly affect our economy. Vold and DeVitis (1991) wrote that public education has been identified as either the cause or cure for most of America's problems. Daggett (2004) summarized the atmosphere created by the report when he noted public education has had two eleven years of pressure from economic and political leaders to transform schools. Bolman and Deal described the nature of schools to be one of a complex political ecosystem resisting top-down change (1997). Typical to the nature of school culture, leaders at the high school dug in their heels to maintain the status quo. While skills students needed to successfully compete in the world of work dramatically changed, schools relied on the traditional methods of teaching the same curriculum in much the same fashion. Bolman and Deal note that effective change requires support, training, response to new needs and realignment in the culture (1997).

Outstanding Schools Act of 1993.

The Outstanding Schools Act of 1993, also known as Senate Bill 380 (SB 380), contained 20 sections and was 105 pages in length (OSA, 1993). According to data reported to the Missouri Department of Elementary and Secondary Education (MODESE), an 18.2% increase in statewide expenditures in all Missouri school districts occurred during a three-year phase-in period (RSMo 160.545, 1993). This increase in education expenditures allowed Missouri to move from a rank of 42nd out of 50 states in 1992-93 to a rank of 37th in 1995-06 (Jones, 1997). In addition to the A+ Schools Program, this initiative authorized new curriculum standards, state frameworks, student

assessments, designating one percent of state aid for professional development, minimum salary for teachers, public school choice for families in unaccredited school districts, and public reporting by school districts, higher education, and the Missouri Department of Elementary and Secondary Education (OSA, 1993).

The key components of A+ Schools Program include ensuring that all students graduate well prepared to pursue advanced education or high wage employment, or both. A school district voluntarily applied for a grant to reach the status of an A+ school and was assessed by the criteria established by Missouri Department of Elementary and Secondary Education (MODESE, 2001). The Missouri School Improvement Program (MSIP), initiated by SB 380, was given the task of reviewing and awarding accreditation to the 525 school districts in Missouri within a five-year review cycle (Outstanding Schools Act, 1993). A team of educators led by a Department School Improvement Committee annually conducts in-depth reviews of over one hundred school districts, often including review of the A+ Schools component. Annual reporting updates are required of schools seeking the continuing status of an A+ School (MODESE, 2001).

The Goals 2000: Educate America Act.

The federal law, Goals 2000, enacted in 1994, espoused standards-based content reform that addressed what all students should know and be able to do (Goals, 2000). The federal government with the 1994 reauthorization of the Elementary and Secondary Education Act (ESEA) supported reforms inherent in Goals 2000 by providing the largest single source of federal aid to K – 12 schools (Goals 2000: Educate America Act, Policy Brief, 1994). The reauthorized ESEA influenced the direction of future reform by

allowing schools with poverty rates as low as 50% to use Title 1 funds within the whole school.

No Child Left Behind Act of 2001.

Federal legislation to reauthorize the Elementary and Secondary Education Act, specifically the NCLB Act of 2001, created a new urgency in raising the achievement of students, by centering the focus on accountability. Schools were required to give attention to what has been found effective by establishing high standards for achievement of all students. Lambert recognized improvement in academic performance of students regardless of ethnicity or low socioeconomic levels who attended schools that focused on continuous improvement of student learning instead of the narrow objective of raising test scores (2003). Whether poor performance was a result of disadvantaged socioeconomic status, minority status, or school-associated issues, student centered accountability has been linked to dramatic improvements in achievement and equity (Lambert, 2003). LeFloch, Taylor, and Thomsen identified the term student-centered accountability to refer to a system that includes not only academic achievement scores, but also specific information about curriculum, teaching practices, leadership practices, and other quantitative and qualitative indicators (American Institutes for Research, 2005). These issues were directly addressed in the requirements of Missouri's A+ Schools Program. Student performance did not depend upon changes in federal or state policy. Educational leaders resolved to make accountability more than test scores by choosing 4 or 5 measurable variables that reflect their own antecedents of excellence which include such items as peer tutoring, collaborative scoring of student work, parental support, time management skills. Reeves reported that student centered accountability has been linked

to dramatic improvements in achievement and equity (Reeves, 2005). Students who graduate with the A+ designation on their transcript have served a minimum of fifty hours of unpaid tutoring or mentoring. Spin-off activities described as innovative results that occurred when striving to meet A+ Program requirements have been documented to include mentoring groups among specific subject areas.

Continuous School Improvement

Whether these school reform issues have a positive impact on teaching and learning remains the unanswered question. Research has uncovered a direct relationship between successes in student learning and a high leadership capacity defined to include teaching and instructional excellence in schools (Lambert, 2003). The American Psychological Association more succinctly stated, “educational practice will improve only when the educational system is redesigned with the primary focus on the learner” (McRel, 1993).

Daggett’s study of high performing schools highlighted the “importance of building a culture of high academic expectations for all students, a tradition of continuous improvement, powerful structures of teaching and learning, collaborative leadership, and student support” (2004, p. 6). Research indicated the process of change in schools is difficult because traditions, rules, and regulations form the foundation in educational systems. Daggett suggested a three-step process for schools to initiate change (2004). First stakeholders must be convinced why a school needs to change. Secondly, data analysis can be used to arrive at decisions. Only then can the third step occur with stakeholders involved working to determine how schools must be adapted (Daggett, 2004).

Implementing educational change is a complex process. Hatch (2002) discussed the set of beliefs and assumptions that are inherent in schools and school improvement programs. These beliefs and assumptions reflect how students learn, the organization of a school, and how change occurs. Hatch called these beliefs ‘theories of action’ (2002). Schools must clearly articulate the beliefs and assumptions. Daggett (2004) stated, “True leaders of change have no use for the viewpoint that it has always been done this way and therefore must continue to be done this way.” (p.2) His focus on high performing high schools found that change is viewed as “challenging and exciting rather than intimidating and threatening” (Daggett, 2004). Leaders who embrace change view the process of how to change from a different perspective because they understand the reality that there is no choice but to change, so they actively develop a strategic plan for change and work to continuously improve. Daggett noted many school reform efforts concentrate on identifying weaknesses and working to overcome areas of concern (2004). This focus tends to accentuate the negative rather than building on existing strengths.

Davies (2002) found that the highly embraced concept of involving the whole community in school reform is a critical aspect of successful reform. He called for development of partnership programs between school and community groups that are designed to involve all who have a stake in the outcome, centered on successes proven through research, to be consistently administered, evaluated without bias, and continually in operation. Thus, the environment was primed to willingly accept the philosophical changes established through SB 380, specifically the A+ Schools Program (RSMo160.545, 1993).

Characteristics Common to Successful Reform Efforts

Clark, Shreve, and Stone (2004) found four common characteristics of programs that focus on the success of secondary students to include caring adults, community involvement, collaboration, and parental involvement. Efforts from Taking Stock in Children (TSIC), a comprehensive partnership program in Alachua County, Florida, indicated positive outcomes when these four characteristics were incorporated into reform efforts (Clark, Shreve, & Stone, 2004). Breakthrough High Schools 2005 used key components of personalization, relevant and rigorous curriculum, and collaboration (National Association of Secondary School Principals, 2005). Strictly a merit-based scholarship, the Helping Outstanding Pupils Educationally (HOPE) Program in Georgia required high school students who earned a GPA of 3.0 to maintain a “B” average in college to qualify for up to \$3000 in tuition, fees and books at any public or private college or university in Georgia (Clark, Shreve, & Stone, 2004).

The A+ Program meshed characteristics from successful reform efforts with expectations of accountability to create the unique program. The goals inherent in the A+ Schools Program of Missouri were designed to encourage high schools to develop measurable performance standards and skills for students, develop rigorous coursework for all students pursuing a high school diploma, and form a partnership plan with local businesses and post-secondary institutions. However, Measuring Up: the National Report Card on Higher Education (Measuring Up, 2006) reported Missouri’s position among the states continues to be lower than average in preparing students for higher education and enrolling them in college immediately after high school. With evaluation results of A+ Program scarce, this research could become a valuable tool for all stakeholders.

Goals of the A+ Program

With the passage of the Outstanding Schools Act of 1993, the State of Missouri earmarked \$5 million in funds for the 1995, \$15.4 million for the 1999-00 school year, and \$19.3 million during 2002, for the implementation of the A+ Schools Program. The program was intent on the following three goals: (a) all students graduate from high school, (b) raise academic standards by ensuring that all students complete a selection of high studies that is challenging and has identified learning expectations, and (c) provide career-oriented learning opportunities for all students (Carnahan, 1993). The A+ Schools Program originally proposed to open new doors to higher education and introduce students to the teaching profession. Evaluation procedures involved collecting historical data that includes the dropout rate, graduation rate, number of high school graduates enrolled in post-secondary schools, vocational education follow-up/placement rates, and the number of high school graduates entering the work force.

Under the regulations of CSR 50-350.040 to maintain A+ status, schools must sustain or improve the graduation rate, reduce the dropout rate, continue to meet the eleven requirements of the A+ Schools Program, and sustain or improve the placement rate for post secondary education or employment in a high wage job. School districts track students' annual progress toward completion of the program requirements.

Requirements for high school students to earn A+ status include: (a) attend a designated A+ high school for three consecutive years, (b) maintain a cumulative grade point average (GPA) of 2.5 or higher throughout four years of high school, (c) achieve an attendance rate of 95% over four years of high school, (d) complete 50 hours of unpaid tutoring or mentoring, (e) abide by the high school's good citizenship policy (Missouri

Department of Elementary & Secondary Education, 2001). When a student graduated and met the A+ eligibility requirements the high school official stamped the transcript with an A+ seal to signify the student's A+ designation to community colleges or vocational schools. An additional requirement for all students seeking to utilize funds from the A+ Program included completing the Free Application for Federal Student Aid (FAFSA). Male students were responsible for registering for Selective Service prior to receiving tuition incentives.

The A+ Program provided tuition incentives to qualified students enrolling in community colleges or technical schools within a period of four years after high school graduation. Two-year institutions were reimbursed the cost of tuition and fees not covered by an eligible student's federal financial aid for up to six semesters. To maintain eligibility after high school graduation students must (a) enroll and attend full time at a Missouri public community college or vocational or technical school, and (b) maintain a grade point average of 2.5 or higher on a 4.0 scale (Missouri Community College Association, Resource Book, 1998-99).

Statistics from the Missouri Department of Elementary and Secondary Education (MODESE, 2001) show that A+ Schools demonstrated improved academic performance, better attendance, lower dropout rates, and fewer discipline problems compared to other public high schools. Currently 231 public high schools in the state have been designated as A+ Schools (MODESE, 2007). Who can imagine the amount of unrecognized potential that exists? Gov. Mel Carnahan touted, "The A+ Schools program may be the least-heralded success story among Missouri's school-reform efforts of the 1990s." With this study the researcher examines the impact of the A+ Schools Program on the

enrollment, certificate or associate degree attainment, and transfer at a mid-western community college in Missouri.

Summary

Chapter Two presented a definition of school reform, historical perspective of high school reform and the background of research that established the foundation for the A+ Schools Program. Key factors of successful reforms were identified with accountability highlighted as a weighty component of continuous improvement in several school reform efforts. The goals of the A+ Schools Program were outlined.

Chapter Three describes the methods and procedures used in conducting this study. A discussion addresses the research problem, purpose of the study, research questions and the design of the research. Chapter Three reviews the population and sample, the data collection procedures and analysis of the data. Lastly, Chapter Three provides an overview of the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Introduction

A description of the methodology and procedures used in conducting this study is provided in Chapter three. The discussion includes the research problem, the purpose of this study, research questions, the design of the research, the population and sample, the data collection procedures and data analysis processes.

Purpose and Overview

Enacted into law as one measure of the Outstanding Schools Act of 1993, the A+ Schools Program offered qualified high school graduates monetary incentives that could be applied to community colleges or vocational schools in the State of Missouri (MODESE, 2001). In the years following inception of the A+ Schools Program, adjustments in program administration have occurred along with dynamic changes resulting from unique relationships between and among high schools, community colleges and four-year universities. Continued funding and further evolution of the A+ program may be influenced by evaluations of the impact of the A+ Schools Program on student enrollment, attainment of a certificate or associate degree, or transfer to a four-year institution.

The purpose of this research was to discover the number and gender of students utilizing A+ funds to enter a mid-western community college, obtain a certificate or an associate degree, or transition to a four-year college or university. The information allows the determination of whether or not the intent of the program was accomplished. The intent of the policy makers was that this high school reform effort would create a well-

prepared workforce by encouraging high school graduates to succeed at some form of post-secondary education. This research analyzes data to determine if a higher percentage of students who utilized A+ Program funds complete a certificate, earn an associate degree, or transfer to a four-year university when compared to students who were not eligible for the A+ Program. It is assumed this school reform effort has increased enrollment in community colleges across the state and expected that these students will transfer to a four-year university, but little identification of success or failure at the post-secondary level has been reported.

Missouri State University completed an enrollment management study in May 2007, noting expectations for increase in student enrollment or transfers from Missouri community colleges “primarily due to the full implementation of the A+ Program” (Missouri State University, 2007). Measures of success for students utilizing monetary incentives from the A+ Schools Program include (a) certificate attainment, (b) associate degree completion, or (c) transfer to a four-year university. To determine effectiveness of the A+ Schools Program, this research focuses on gender comparisons between the results of A+ and non-A+ students by analyzing the aforementioned measures of success throughout the first eleven years the A+ Schools Program was operational. This study informs stakeholders with accountability measures for reference when making future programming decisions. In addition this research may have implications for future research in various community colleges across the state. Continued funding and further evolution of the A+ program may be influenced by A+ Schools Program evaluations of its impact. The focus on data for making programmatic decisions is crucial to improving the status quo.

Research Questions

This study compares A+ and non-A+ students regarding enrollment, certificate attainment, associate degree attainment and transfer to a four-year institution during the first eleven years of A+ program implementation. Comparisons are differentiated by gender when the data was available in those categories. The following research questions were addressed in this study:

1. Has the A+ Schools Program resulted in an increase in community college fall enrollment?
2. Is there a significant difference among A+ students, non-A+ students and gender of students in fall enrollment in a mid-western community college?
3. Is there a significant difference between A+ and non-A+ students in community college certificate attainment?
4. Is there a significant difference among A+ students, non-A+ students and gender of students in community college associate degree attainment?
5. Is there a significant difference among A+ students, non-A+ students and gender of students in transitioning from a community college to a four-year college?

Data Collection and Procedures

The research focuses on A+ students enrolled full-time at a mid-western community college in the state of Missouri during the period of the first eleven years in which the A+ Program incentives were made available. This study utilizes pre-existing data gathered by the A+ Coordinator and the Assistance Institutional Researcher at the mid-western community college and the following databases:

1. Enhanced Missouri Student Achievement Study (EMSAS)
2. Missouri Department of Elementary and Secondary Education
3. Missouri Coordinating Board for Higher Education Website www.mochbe.gov
4. National Center for Educational Statistics Website <http://nces.ed.gov>

Population and Sample

This study focused on enrollment data and measures of success of A+ students enrolled at a public community college in mid-western Missouri during an eleven-year period beginning 1997 and continuing through 2007. Enrollment data includes Full Time Equivalent (FTE) students who enroll in a minimum of 12 hours in the fall semester and is disaggregated by gender. The category of A+ Program eligible students includes only those students who met specific criteria at the high school and graduated with notation of A+ eligibility on their transcript. The category of non-A+ eligible students includes all other full time equivalent students. Indicators or measures of success include (a) completion of a certificate, (b) earning an associate degree, and (c) transferring to a four-year university. A review of documents and data provides factual information regarding fall enrollment, attainment of a certificate or associate degree, and transitioning from a mid-western community college to a four-year institution.

This study utilized data from a mid-western community college in Missouri that was established in 1966, when voters in four surrounding counties approved the formation of a taxing district for a junior college. Classes were first held in 1967 in various buildings in the downtown area. Currently the campus for the mid-western community college encompasses 80 acres and eight additional learning centers scattered throughout Missouri (Forty Years of Progress, 2008). Enrollment has surpassed 3000

students with a full-time enrollment at 57% of the total enrollment. Presently A+ students comprise more than 20% of the full-time enrollment at the mid-western community college.

Data Analysis

Quantitative research applies objective, unbiased processes to develop and test hypotheses, guide decisions and inform stakeholders (Patton, 1997). This study utilized pre-existing data compiled by the A+ Schools Program Coordinator at a mid-western community college and databases from Missouri Department of Elementary and Secondary Education, Missouri Coordinating Board for Higher Education Website www.mochbe.gov, Enhanced Missouri Student Achievement Study, and the National Center for Educational Statistics Website <http://nces.ed.gov>. This section includes a discussion of the various data analyses that were used in this study. Data analysis for each research question is discussed in this section. Tables with narrative descriptions of data are included in Chapter Four. The section summarizing results includes a discussion of the type of statistical analysis, if applicable, that was used.

A comparison of data among A+ students, non-A+ students and gender categories of students enrolled at a mid-western community college was made to determine the impact of the A+ Schools Program. A series of chi-square tests for independence were computed to investigate whether or not there was a significant relationship between two variables. The chi-square test provided an effective analysis of a relationship between two variables by comparing the actual count and the expected count in relation to full time enrollment, completion of a certificate or associate degree, or transfer to a four-year university. Chi-square tests were computed to measure the significance of gender upon

enrollment for all students, enrollment for A+ students, and enrollment for non-A+ students. Additionally chi-square tests of independence were utilized to measure the significance among gender and the attainment of an associate degree. Chi-square tests were performed to determine whether the observed percentages for A+ students differ significantly from what is expected. The significance level of 0.05 was utilized for the series of analyses performed. Results can be stated that there is no relationship between two variables and the distributions have equal proportions or that there is a significant relationship between the two variables indicating the distributions vary significantly.

Summary

The purpose of this study was to analyze existing quantitative data for a significant relationship between the A+ Schools Program and impact on fall enrollment at a mid-western community college. Further analysis investigated the impact of the A+ Schools Program on A+ students' successful completion of a program to earn a certificate or associate degree or transfer to a four-year institution. A comparison of the rate of success of A+ and non-A+ students was made to determine the effectiveness of the A+ Schools Program. Identification of successful or unsuccessful strategies can assist stakeholders in utilizing program evaluation results to revise existing guidelines, remove roadblocks to success and apply proven methods to ensure program sustainability (Patton, 1997).

This study consisted of data analysis from students who enrolled full time in a mid-western community college in Missouri beginning in 1997 through 2007. Data through 2007, informing the researcher of the number of certificates or associate degrees earned or transfers to a four-year university, was utilized. Student data was viewed in

various data groups. The first set comprised students who enrolled as students identified with A+ eligibility, while the second group included all other FTE students. Enrollment data, attainment of an associate degree and transfer data was viewed in gender categories. The data was obtained from the mid-western community college and several databases. Only anonymous data, other than recognition of A+ status, non-A+ status, and gender was included in this study.

Chapter Three provided an explanation for the purpose of the study, presented the research questions, introduced the data collection procedures, discussed the sample population and outlined the data analysis. Chapter Four presents an analysis of the data and discusses each of the research questions and associated hypotheses. Chapter Five summarizes the study and presents a discussion of the findings. Conclusions from the study are presented and implications for future research are highlighted.

CHAPTER FOUR

Overview of the Study

The purpose of this research was to examine the impact of the A+ Schools Program on the number and gender of students who enroll in, obtain certificates or associate degrees from, or transition from a mid-western community college to a four-year college or university. This research examined eleven years of data in order to evaluate the effectiveness of the A+ Program at the post-secondary level in regard to student enrollment, certificate or associate degree attainment, or transition to a four-year university.

The overarching intent of reforms inherent in the A+ Schools Program was to create a well-prepared workforce through some form of post-secondary education (Carnahan, 1993). Statistics from Missouri Department of Elementary and Secondary Education compiled during the first eleven years the A+ Program was in operation have identified positive impact for students at the high school level through a decreased dropout rate and higher standards of academic performance (MODESE, 2001). The researcher compiled pre-existing data from databases managed by the National Center for Educational Statistics, Missouri Department of Higher Education, Missouri Department of Elementary and Secondary Education and Three Rivers Community College. Data comparisons were made among A+ students, non-A+ students and gender categories by analyzing the following four indicators of effectiveness (a) enrollment in post-secondary education, (b) certificate attainment, (c) associate degree completion and (d) transfer to a four-year university. Participants in this study consisted of students who enrolled in a mid-western Missouri community college beginning Fall 1997 through Fall 2007. Future

programming decisions can benefit from the identification of program effectiveness. Continued funding and further evolution of the A+ Schools Program may be informed by the findings of this study.

This study compared gender categories of A+ and non-A+ students regarding enrollment, certificate attainment, associate degree attainment and transfer to a four-year institution during the first eleven years of A+ program implementation. Gender comparisons were not differentiated in the area of certificate attainment because the data was not available. This study addressed the following research questions:

1. Has the A+ Schools Program resulted in an increase in community college fall enrollment?
2. Is there a significant difference among A+ students, non-A+ students and the gender of students in fall enrollment in a mid-western community college?
3. Is there a significant difference between A+ and non-A+ students in community college certificate attainment?
4. Is there a significant difference among A+ students, non-A+ students and the gender of students in community college associate degree attainment?
5. Is there a significant difference among A+ students, non-A+ students and gender of students in transitioning from a community college to a four-year college?

The following section includes a description of how the presentation of the data is organized. A review of the research questions addressed in the study is included. An

analysis of the findings is presented. Results for each research question are displayed in text and/or table format in the data analysis portion.

Presentation of Data

The next section presents data organized by tables with descriptive summaries provided in the text. Tables containing actual numbers and percentages depict eleven years of information. Data are presented beginning with Fall 1997 and continue through Fall 2007. Data reflect student information from a mid-western community college in Missouri regarding fall enrollment, certificate or associate degree attainment, and transfer to a four-year university. Information provided includes the total number of students then the data are disaggregated into the categories of gender, non-A+ students, and A+ students.

The A+ Schools Program was in effect beginning with the 1993-1994 school year, however, students were given three years in which to earn qualifying status. Therefore, 1997 became the first year A+ eligible students could utilize the monetary incentives to seek some form of post-secondary education. Early in the A+ Schools Program time line, the number of high schools with A+ designation and student participation in the program was minimal, but over time participation numbers steadily grew, justifying the perusal of a eleven years of data. The examination of data over time is important to identify trends in performance factors and to view evidence of effectiveness.

Analysis of Data

Data analysis for each research question is discussed in this section. If applicable, results include a discussion of the type of statistical analysis that was used. The chi – square test for independence is used to test whether or not there is a significant

relationship between two variables. The chi-square test provides an effective analysis of a relationship between two variables by comparing the actual count and the expected count. The expected count is the number expected to be present if the two groups were equal. For example, if gender between A+ and non-A+ students were equal, the expected count for each group would be very close to the actual count. If there is a significant difference between the groups, the expected count may be much higher or lower than the actual count. The chi-square statistic was computed to measure whether the set of observed frequencies for the measures of success of A+ students deviated significantly from the set of expected frequencies for the same measures of success of non-A+ students. The significance level of 0.05 was utilized for the series of analyses performed, noting if the difference in frequencies are significant at the 0.05 level, the probability that it was produced by chance sampling factors is 0.05 or less. Measures of success include (a) enrollment in a community college, (b) attain a certificate, (c) attain an associate degree and (d) transfer to a four-year institution.

Table 1 provides an overview of the A+ student data from the mid-western community college during the first eleven years the A+ Schools Program was operational. The table displays the total number of A+ students enrolled in a mid-western community college in Missouri, and provides the number of males and females enrolled except for 1997 and 1998. Student enrollment for 1997 and 1998 was an amount that could allow for identification of individual students when disaggregating the data into gender categories. Data for the next measure of success, certificate attainment, depicts the total certificates A+ students earned during that time however, data reflecting certificate attainment could not be disaggregated into gender categories or by the year the certificate

was earned. The sixth column depicts the number of associate degrees earned by A+ students. The information is then grouped into gender categories. The last column displays the number of A+ students who transferred to a four-year institution. The amount shown for 2003 includes students who were first eligible to transfer as well as students enrolled in earlier years, therefore the number may be larger than expected. Column totals are provided to show that 2,430 A+ students were enrolled in the mid-western community college during the first eleven years of the A+ Schools Program. Of that number ten A+ students earned a certificate, at least 364 received an associate degree and 294 transferred to a four-year public institution in Missouri.

Table 1

A+ student enrollment data from a mid-western community college in Missouri

Year	Enroll	Enroll Male	Enroll Female	Cert	AA	AA Male	AA Female	Transfer
1997	1	-	-	-	-	-	-	-
1998	15	-	-	-	-	-	-	-
1999	83	29	54	-	-	-	-	-
2000	118	51	67	-	2	1	1	-
2001	133	52	81	-	28	9	19	-
2002	242	104	138	-	30	12	18	-
2003	324	125	199	-	39	16	23	124
2004	396	160	236	-	58	24	34	86

2005	363	146	217	-	69	29	40	84
2006	384	149	235	-	70	37	33	-
2007	371	151	220	-	68	24	44	-
Totals	2430	967	1447	10	364	152	212	294

Note. Dashes indicate unavailable data. Certificate data was available in aggregate. Gender data was not available in for 1997, 1998, and 1999. Transfer data was available for 2003, 2004, and 2005.

Research Question 1 – Has the A+ Schools Program resulted in an increase in community college fall enrollment?

Data from Table 1 indicates 2,430 students from the A+ Schools Program enrolled in the mid-western community college during the eleven years. The number of A+ students enrolled in the Fall Semester 1997 at the mid-western community college in Missouri was 1 and by Fall Semester 2007 had reached 371. Table 2 displays the number and percentages for enrollment data at the mid-western community college during the eleven years for A+ and non-A+ students to allow for comparisons between the two groups of students. The percentages along with comparisons and contrasts are used to evaluate the data. This research computes the chi-square tests for independence to determine significant impact upon the enrollment at a mid-western community college regarding the full time fall enrollment (FTE) of degree seeking A+ and non-A+ students in a mid-western community college in Missouri.

Fall enrollment in the mid-western community college for A+ students began in 1997 with 1 student, or less than 1% of the total enrollment, and steadily increased to reach a high of 25% of the total FTE enrollment in Fall 2006. The percentage of

enrollment for A+ students fell slightly to 21% in Fall 2007. During the eleven years the percentage of A+ students enrolled ranged from less than 1% to 25% of the total enrollment. The FTE for all students was 878 for the Fall Semester 1997, or 99% and 1,780 or 79% by Fall Semester 2007. Over the eleven years the mid-western community college experienced a 61% increase in fall enrollment, not including the number of A+ students in the count. The FTE for all students at the mid-western community college more than doubled in the eleven years.

Table 2

Historical trends of full time fall enrollment of A+ and Non-A+ students at a mid-western community college in Missouri

Year	A+FTE	% A+FTE	Non-A+FTE	%Non-A+	Total FTE
1997	1	<1%	877	99.9%	878
1998	15	1%	1064	98.6%	1079
1999	83	8%	967	92%	1050
2000	118	12%	855	88%	973
2001	133	11%	1113	89%	1246
2002	242	20%	976	80%	1218
2003	324	21%	1211	79%	1535
2004	396	24%	1239	76%	1635
2005	363	24%	1125	76%	1488

2006	384	25%	1134	75%	1518
2007	371	21%	1409	79%	1780

Chi-square tests for independence were used to determine significant differences in the proportion of A+ and non-A+ students regarding full time fall enrollment at a mid-western community college in Missouri. The value of the Pearson's chi-square, with 90 degrees of freedom, was shown to be 37.889, with a two-tailed significance level of .101, or $\chi^2(9) = 37.889, p = .101$ indicating the groups of enrollees were equally distributed and the enrollment at a mid-western community college was not significantly impacted by the A+ Schools Program. Financial incentives from the A+ Schools Program encouraged enrollment in community colleges instead of four-year institutions through a requirement that the financial incentives could only be applied to a community college or vocational institution in Missouri. Prior to the A+ Schools Program students had two major choices when seeking post-secondary education, a four-year or a two-year institution, therefore the following data in Table 3 depicts fall enrollment in both categories of public institutions in Missouri in order to view enrollment trends. Table 3 indicates the total number of A+ Eligible students and the number and percentage enrolling in public four-year and two-year institutions in Missouri the fall semester immediately after high school graduation. A+ Eligible students have enrolled in public two-year institutions in Missouri since inception of the A+ Schools Program at percentages ranging from 34% to 40%. In Fall Semester 1997, 10% of A+ students enrolled in four-year institutions. Over the span of eleven years the percentage of A+ students enrolling in four-year institutions has grown to reach approximately 25% of all

A+ eligible students, while the percentage of A+ students enrolling in two-year public institutions has demonstrated a gradual decrease to 34%. The research computes the Pearson's chi-square to determine whether the observed percentages for A+ students who enroll in two-year institutions differ significantly from what is expected. Results can be stated that there is no relationship between two variables and the distributions have equal proportions, therefore the increased enrollment in community colleges and four-year institutions was not significantly impacted by the A+ Schools Program.

Table 3

Historical trends of A+ students enrolling in public institutions the fall immediately after high school graduation

Year	4-Year	% 4-Year	2-Year	% 2-Year	Total # of A+ Students
1997	41	10%	173	40%	433
1998	187	13%	563	40%	1,421
1999	393	14%	1,154	40%	2,910
2000	725	16%	1,794	39%	4,607
2001	1,196	20%	2,418	39%	6,141
2002	1,605	20%	2,956	37%	7,967
2003	1,898	20%	3,471	37%	9,447
2004	2,356	23%	3,794	37%	10,158
2005	2,801	26%	3,910	36%	10,909
2006	2,842	26%	3,848	36%	11,027
2007	3,009	25%	4,018	34%	11,833

Table 3 presented a view of enrollment for all A+ students in Missouri beginning in 1997 through 2007. A+ students have continued to enroll in two-year institutions at a greater rate than four-year institutions; however the trend has shown a slight increase in the initial fall enrollment of A+ students at four-year institutions. The value of Pearson's chi-square analysis, with 9 degrees of freedom, was shown to be 37.889, with a two-tailed significance level of .101, or $\chi^2(9) = 37.889, p = .101$, indicating there is no significant difference in the observed frequencies from the expected frequencies when viewing A+ enrollment data between two-year and four-year schools.

Research Question 2 - Is there a significant difference among A+ students, non-A+ students and the gender of students in fall enrollment in a mid-western community college?

The following summary of data addresses the two categories of enrollment for A+ students and non-A+ students and focuses on the enrollment data by gender. Table 2 presents historical enrollment data in numbers and percentages for A+ and non-A+ students at a mid-western community college. Fall enrollment for A+ students began in 1997 with 1 student, or less than 1% of the total enrollment, and steadily increased to reach a high of 25% of the total FTE enrollment in Fall 2006. The percentage of enrollment for A+ students fell slightly to 21% in Fall 2007. During the first eleven years of the A+ Program, the percentage of A+ students enrolled ranged from less than 1% to 25% of the total enrollment. The total FTE was 878 for the Fall Semester 1997 and 1,780 by Fall Semester 2007. During the same period, the mid-western community college experienced a 61% increase in fall enrollment, not including the number of A+ students

in the count. The research computes chi-square tests for independence to identify significant differences in the proportions of A+ and non-A+ students with regard to enrollment in the mid-western community college.

When comparing enrollment by gender at community colleges, a report by the Center for American Progress identified the rates to be 41% for males and 59% for females (2009). Table 4 depicts the Full Time Fall Enrollment (FTE) of A+ and non-A+ students, disaggregated by gender, in a mid-western community college in Missouri. This information allows for comparisons to be made between the trends in FTE when disaggregating between males and females in the two categories of A+ students and non-A+ students. The percentage of males enrolled in a mid-western community college in Missouri ranged from 35% to 40% from 1997 through 2007, with the percentage range of 35% to 41% for A+ Eligible males closely resembling the range for enrollment of total males at the mid-western community college and community colleges in the nation. The research computes chi-square tests for independence to identify significant differences in the proportions of the gender of A+ and non-A+ students with regard to enrollment in the mid-western community college.

Table 4

Historical trends of FTE of A+ and non-A+ students disaggregated by gender at a mid-western community college in Missouri

Year	Non A+ Male	% Non A+ Male	A+ Male	% A+ Male	Non A+ Female	% Non A+ Female	A+ Female	% A+ Female
1997	355	40%	-	-	523	60%	-	-
1998	395	37%	-	-	684	63%	-	-

1999	381	36%	29	35%	669	64%	54	65%
2000	374	38%	51	43%	599	62%	67	57%
2001	458	37%	52	39%	788	63%	81	61%
2002	453	37%	104	43%	765	63%	138	57%
2003	531	35%	125	39%	1004	65%	199	61%
2004	568	35%	160	40%	1067	65%	236	60%
2005	558	37%	146	40%	930	63%	217	60%
2006	528	35%	149	39%	990	65%	235	61%
2007	627	35%	151	41%	1153	65%	220	59%

Note. Dashes indicate the data could not be disaggregated by gender for 1997 and 1998.

The chi-square test was performed to measure significance between the difference in enrollment percentages of A+ males and non-A+ males. The chi-square test produced an obtained value of $\chi^2(7) = 63.000$, $p = .243$. The observed frequencies for A+ males did not differ significantly from the expected frequencies. The total number of females enrolled during the same period ranged from 60% to 65% of the total enrollment. Mirroring that percentage was the percentage of enrollment of A+ eligible females at 57% to 61% of the total enrollment. The chi-square test was performed to test for significance between the enrollment percentages of A+ females and non-A+ females. The chi-square test produced an obtained value of $\chi^2(7) = 17.500$, $p = .132$. The observed frequencies for A+ females did not differ significantly from the expected frequencies.

Research Question 3 – Is there a significant difference between A+ and non-A+ students in community college certificate attainment?

One primary goal of the A+ Schools Program was to ensure high school students were prepared to proceed to some form of post-secondary education or high wage job. The increased demand for some form of post-secondary education has occurred along with the increased technological skills required for occupations in the current workforce. Attainment of a certificate could satisfactorily prepare students to transition into the workforce in Missouri with a high wage job. Community colleges across the state have aggressively developed the role of providing technical and continuing education. The mid-western community college has developed training programs to upgrade the skills of the present workforce; however the data in Table 5 does not reflect a similar increase in certificate attainment.

The first three columns in Table 5 depict the total number of non-A+ students and the number and percentage of certificates they earned beginning 1997 through 2007 at a mid-western community college in Missouri. Non-A+ students earned certificates at the rate of 2% for a total of 290 certificates. The next three columns depict the number of A+ students and the total number and percentage of certificates attained by A+ eligible students at a mid-western community college. A+ students enrolled in a mid-western community college in Missouri beginning in 1997 and continuing through 2007 were awarded a total of ten certificates and could not be disaggregated into gender categories because the identification of individuals might be possible. The last column displays the percentage of all A+ students in Missouri who attained a certificate during the eleven years.

Table 5

Historical trends of certificates awarded to A+ and non-A+ students at a mid-western community college in Missouri

Year	Non-A+ Students	Non-A+ Cert	% Non-A+ Earned	A+ Students	A+ Cert	% A+ Earned	MO % A+ Cert
1997	877	24	3%	1	-	-	2%
1998	1064	37	3%	15	-	-	1%
1999	967	-	-	83	-	-	1%
2000	855	13	2%	118	-	-	1%
2001	1113	43	4%	133	-	-	1%
2002	976	54	6%	242	-	-	1%
2003	1211	32	3%	324	-	-	1%
2004	1239	18	1%	396	-	-	1%
2005	1125	26	2%	363	-	-	>1%
2006	1134	26	2%	384	-	-	>1%
2007	1409	25	2%	371	-	-	-
Totals	11970	290	2%	2430	10	.004	1%

Note. Dashes indicate annual data for A+ students earning certificates at the mid-western community college was not available.

The total number of certificates earned by A+ students at a mid-western community college during the first eleven years the A+ Schools Program was in operation was ten, or less than 1% of A+ students earned certificates, while the number of

certificates earned by all students enrolled at the mid-western community college was 290 or approximately 2% of non-A+ students who enrolled full time earned a certificate. Across the state of Missouri the percentage of A+ students who attained a certificate gradually decreased to less than 1% of all A+ students. The value of Pearson's chi-square, with 4 degrees of freedom, was shown to be 2.25, with a two-tailed significance level of .69, or $\chi^2(4) = 2.25, p = .69$, indicating no significant difference was found between the percentage of A+ and non-A+ students who earned certificates while enrolled in community colleges in Missouri.

Research Question 4 – Is there a significant difference among A+ students, non-A+ students and gender in community college associate degree attainment?

Table 6 presents the total number of associate degrees earned by A+ students while attending a mid-western community college during the first eleven years the A+ Schools Program was operational. Additionally, associate degree attainment data in Table 6 reflects the number and percentage of associate degrees earned by A+ males and females enrolled in the mid-western community college. Data was not available for 1997, 1998, or 1999. The number of associate degrees attained by A+ eligible students in a mid-western community college in Missouri steadily increased until a high of 70 was achieved during 2006. The percentage of associate degrees earned by A+ males ranged from the low of 32% to a high of 53% of the total associate degrees attained. A+ eligible females earned approximately 47% to 68% of all the associate degrees attained by A+ eligible students. This research computes the chi-square tests for independence to determine significance of the distribution frequencies of A+ students, non-A+ students

and gender regarding associate degree attainment from a mid-western community college in Missouri.

Table 6

Associate degrees earned by A+ eligible students at a mid-western community college in Missouri disaggregated by gender

Year	Males	% Male	Females	% Female	Total Earned
1997	-	-	-	-	-
1998	-	-	-	-	-
1999	-	-	-	-	-
2000	1	50%	1	50%	2
2001	9	32%	19	68%	28
2002	12	40%	18	60%	30
2003	16	41%	23	59%	39
2004	24	41%	34	59%	58
2005	29	42%	40	58%	69
2006	37	53%	33	47%	70
2007	24	35%	44	65%	68

Note. Dashes indicate the data for 1997, 1998 and 1999 were not available.

Table 7 presents the number and percentage of associate degrees earned by non-A+ students and is disaggregated in the categories of non-A+ males and non-A+ females at a mid-western community college in Missouri. Data was not available for gender categories in 1999. The total number of associate degrees attained by non-A+ students in

a mid-western community college in Missouri was 3007, ranging from a low of 249 to a high of 349. This research computes the chi-square tests for independence to determine significance of the distribution frequencies of A+ and non-A+ students regarding associate degree attainment from a mid-western community college in Missouri.

Table 7

Associate degree earned by non-A+ students at a mid-western community college in Missouri disaggregated by gender

Year	Associate Non-A+ Male	% Associate Non-A+ Male	Associate Non-A+ Female	% Associate Non-A+ Female	Total Associate Earned
1997	85	34%	164	66%	249
1998	120	35%	227	65%	349
1999	-	-	-	-	315
2000	106	34%	209	66%	293
2001	80	27%	213	73%	341
2002	103	30%	238	70%	302
2003	90	30%	212	70%	264
2004	88	33%	176	67%	325
2005	84	26%	241	74%	273
2006	79	29%	194	71%	296
2007	80	27%	216	73%	3007

Note. Dashes indicate associate degree attainment data by gender was unavailable for 1999.

Data from Table 6 and Table 7 was used to compute the chi-square test of independence between associate degree attainment of A+ and non-A+ students at a mid-western community college. The value of Pearson's chi-square, with 8 degrees of freedom, was shown to be 80.00, with a two-tailed significance level of .242, or $\chi^2(8) = 80.00, p = .242$, indicating the observed frequency distribution of A+ students who attained an associate degree did not significantly differ from the expected frequency distribution. The chi-square test was performed to measure significance between the percentages of A+ males and non-A+ males at the mid-western community college and produced an obtained value of $\chi^2(6) = 34.00, p = .281$. The observed frequencies of associate degree attainment for A+ males did not differ significantly from the expected frequencies. The chi-square test was performed to test for significance between the percentages of A+ females and non-A+ females attaining an associate degree and produced an obtained value of $\chi^2(6) = 40.00, p = .258$. The observed frequencies for A+ females attaining associate degrees did not differ significantly from the expected frequencies.

Table 8 displays an unduplicated count and percentage of the associate degrees earned by A+ and non-A+ students enrolled as full-time degree seeking students in all public two-year colleges in Missouri. The last two columns present the number and percentage of degrees attained by A+ students who were enrolled but not as full-time degree seeking students and therefore not utilizing A+ incentives to pay for post-secondary education. This data allows for comparisons of the data for A+ and non-A+ students regarding associate degrees attainment from all public community colleges in Missouri. In addition it provides a baseline to compare the associate degree attainment

data from the State of Missouri with that of the mid-western community college. Data reflecting the number of associate degrees was not yet available for 2007. The percentage of associate degrees earned by A+ students enrolled as full-time degree seeking students, or FTE, in community colleges in Missouri ranged from a high of 24.5% in 1997 to a low of 0.1% in 2006. Data was not available for 2007. The percentage of associate degrees earned by non-A+ students enrolled as full-time degree seeking students (FTE) in Missouri community colleges ranged from a high of 36.7% in 1997 to a low of 1% in 2006. The percentage of associate degrees earned by A+ students enrolled part time (Not FTE) ranged from a high of 18% in 1997 to less than 1% by 2006. The research uses the Pearson chi-square test to measure the significance of observed frequencies and the expected frequencies of the percentages between A+ and non-A+ students in attaining an associate degree while attending a public community college in Missouri.

Table 8

Number and percent of associate degrees earned by full-time degree seeking A+ and non-A+ students and A+ students who are not full-time degree seeking at all public community colleges in Missouri

Year	# of Degrees	% of Degrees	# of Degrees	% of Degrees	# of Degrees	% of Degrees
	A+ FTE	A+ FTE	Non-A+ FTE	Non-A+ FTE	A+ Not FTE	A+ Not FTE
1997	106	24.5%	1815	36.7%	76	18%
1998	269	18.9%	1771	35.2%	123	9%
1999	565	19.4%	1879	34.8%	282	10%
2000	907	19.7%	1783	35.1%	425	9%
2001	1139	18.5%	1723	30.5%	470	8%

2002	1450	18.2%	1452	25.3%	508	6%
2003	1745	18.5%	1325	19.5%	439	5%
2004	1573	15.6%	918	14.0%	348	3%
2005	706	6.5%	415	6.5%	137	1%
2006	13	0.1%	69	1.0%	6	<1%
2007	-	-	-	-	-	-
Total	8473	14%	13,150	33%	2814	4%

Note. Dashes indicate data reflecting associate degree attainment were not yet available for 2007.

Table 8 reported data regarding associate degree attainment in Missouri by A+ and non-A+ students. The data was used to compute the Pearson chi-square test of independence to measure the significance of the difference between the observed frequencies and the expected frequencies of percentages of A+ and non-A+ students in attaining an associate degree. The chi-square test produced an obtained value of $\chi^2(8) = 50.000$, $p = .048$. The value of Pearson's chi-square, with 8 degrees of freedom, was shown to be 50.000, with a two-tailed significance level of .048, indicating the observed frequencies for A+ students who attained associate degrees was significantly different from the expected frequencies. A significant difference was found between the percentages of A+ and non-A+ students who earned associate degrees in Missouri when using the alpha level of 0.05 as the criterion to identify significance. Results can be stated that there is a significant relationship between the two variables indicating the distributions vary significantly.

Research Question 5 – Is there a significant difference among A+ students, non-A+ students and gender of students in transitioning from a community college to a four-year college?

Transfer rates from community colleges to four-institutions are viewed as a measure of achievement for community colleges. This study considers transfer students as students with no previous post-secondary experience who complete a minimum of 12 credits within four years and transfer some credit to the new institution. Table 9 depicts the number and percentage of A+ and non-A+ students who completed a first time transfer from a mid-western community college in Missouri to a four-year institution in Missouri. Data reflecting the transfer by gender of neither A+ students nor non-A+ students at the mid-western community college was available. Transfer data for A+ students was available for three consecutive years, 2003 through 2005. According to Financial Aid Advisor, Lydia Clark, accurate transfer data for A+ students is no longer available because A+ students are not required to complete a “Declaration of Transfer” at the mid-western community college in Missouri (personal communication, L. Clark, October 27, 2009). The chi-square test of independence compares the observed frequency distribution of A+ students who transferred to a four-year public institution in Missouri with that of non-A+ students to measure the significance of the differences in the percentages of transfer between A+ and non-A+ students.

Table 9

Student transfer data from a mid-western community college in Missouri

Year	Total Transfers	Non-A+ Transfers	% Non-A+	A+ Transfers	% A+

2001	142	-	-	-	-
2002	157	-	-	-	-
2003	155	31	20%	124	80%
2004	140	54	39%	86	61%
2005	186	102	55%	84	45%
2006	145	-	-	-	-
2007	118	-	-	-	-
Total	943	187	69%	294	31%

Note. Dashes indicate unavailable data for 1997, 1998, 1999, 2000, 2006 and 2007.

Chi-square tests were computed using the data in Table 9 to test for significance between the transfer percentages of A+ and non-A+ students at a mid-western community college in Missouri. The chi-square test produced an obtained value of $\chi^2(2) = 12.000$, $p = .213$. The observed frequencies for the rates of transfer by A+ students did not differ significantly from the expected frequencies, indicating no significant difference was found between the percentage of A+ and non-A+ students who transfer from a the mid-western community to a four-year institution in Missouri. The research did not perform an analysis of transfer by gender at the mid-western community college because the data was not available.

Table 10 depicts the number of A+ Eligible students who first attended a public Missouri community college from 2002 through 2005 and transferred to a public Missouri four-year institution at any time through the 2007- 2008 school year. Table 10 provides a breakdown by gender of the 16,837 A+ students who transferred from a public

two-year institution to a public four-year institution in Missouri from 2002 through 2007. The rate of transfer for A+ students in Missouri is 36.8%, with males accounting for 16% of the transfers and females comprising 21% of all A+ students transferring to a public four-year institution. The chi-square test of independence compares the observed percentage of A+ males who transferred to a four-year public institution in Missouri with that of A+ females to measure the significance of the differences in the percentages of transfers.

Table 10

A+ students enrolled in two-year public institution and transferred to a four-year institution in Missouri disaggregated by gender

Year	Male Transfer	% Male Transfer	Female Transfer	% Female Transfer	% A+ Transfer	Total A+
2002 – 2007	2,655	16%	3,544	21%	36.8%	16,837

The chi-square test produced an obtained value of $\chi^2(1) = 2.000, p = .157$. The observed frequencies for transfers by A+ males and A+ females did not differ significantly from the expected frequencies. Analysis of the difference in the percentages of transfer by A+ and non-A+ students by gender was not completed because the disaggregated data was not available.

Summary

Data analysis of the pre-existing data recorded by the A+ Coordinator at a mid-western community college and compiled by the institutional researcher at the community college and research associate at the Missouri Department of Higher

Education provided a comprehensive exploration of the impact of the A+ Schools Program for students utilizing A+ funds to seek post-secondary education at a mid-western community college in Missouri. Chi-square tests for independence were utilized to determine significant differences in the proportions of A+ students, non-A+ students and gender categories in regard to the measures of success for A+ students. Measures of success include (a) enrollment in a community college, (b) attainment of a certificate, (c) attainment of an associate degree, or (d) transfer to a four-year institution. The chi-square statistic was computed to measure whether the set of observed frequencies deviate significantly from the set of expected frequencies for the same measures of success of non-A+ students. The final chapter formulates conclusions, make inferences and suggest recommendations for further study. A discussion of the implications of these results is presented.

CHAPTER FIVE

Findings, Conclusions and Implications

This study examined community college enrollment data, and measures of student success that included obtaining a certificate or associate degree, or transferring to four-year institutions by students utilizing A+ funds to seek post-secondary education at a mid-western community college in Missouri. Chapter Five provides a summary of the research, presents the findings and provides discussion of the conclusions and implications for theory and practice as well as recommendations for future research.

Summary of the Study

The purpose of this study was to examine the impact of the A+ Schools Program on fall enrollment and measures of success for A+ students enrolled at a public community college in mid-western Missouri beginning 1997 and continuing through 2007. Measures of success included analyzing the following four indicators of effectiveness (a) enrollment in post-secondary education, (b) certificate attainment, (c) associate degree completion and (d) transfer to a four-year university. Data comparisons were made among A+ students, non-A+ students and gender categories by utilizing pre-existing data from databases managed by the National Center for Educational Statistics, Missouri Department of Higher Education, Missouri Department of Elementary and Secondary Education and Three Rivers Community College.

The findings from the present study are useful in making decisions regarding the A+ Schools Program. Continued funding and further evolution of the A+ Schools Program may be informed by the findings of this study. An effective analysis of the data can prove useful for validation of the A+ Schools Program at the mid-western community

college. This research has potential use for stakeholders, including community college administrators, when attempting to meet the requirements of accountability. Additionally, this study has implications for future research on the impact of the A+ Schools Program. Future research conducted using statewide data could determine if the results can be generalized to community colleges in Missouri.

Research Questions

1. Has the A+ Schools Program resulted in an increase in community college fall enrollment?
2. Is there a significant difference among A+ students, non-A+ students and the gender of students in fall enrollment in a mid-western community college?
3. Is there a significant difference between A+ and non-A+ students in community college certificate attainment?
4. Is there a significant difference among A+ students, non-A+ students and the gender of students in community college associate degree attainment?
5. Is there a significant difference among A+ students, non-A+ students and gender of students in transitioning from a community college to a four-year college?

The literature review began with a discussion of characteristics unique to community colleges and the related issues that occurred. Next an overview of school reform presented the historical perspective of high school reform and the background of research that established the foundation for the A+ Schools Program with identification

of the key factors of successful reform efforts. The review concluded with an outline of the goals of the A+ Schools Program.

Findings

The findings reported in this section are organized under each of the five research questions included in this study. In addressing each question, the researcher reports findings from the data obtained from databases managed by the National Center for Educational Statistics, Missouri Department of Higher Education, Missouri Department of Elementary and Secondary Education and Three Rivers Community College.

Research Question 1 - Has the A+ Schools Program resulted in an increase in community college fall enrollment?

The National Center for Education Statistics reported a percent of change in total fall enrollment from 2000 to 2006 for two-year public institutions to be a 9% increase and a 15% increase for four-year public institutions (NECS, 2008). In 2000, the national participation rate for students in the age range of 18 to 24 years was reported to be 34%, with an expected growth rate to be at 13% (Education Commission of the States, 2004). Data from Missouri Coordinating Board for Higher Education indicated Missouri's community college enrollment of first time, full time freshmen in the past eleven years has increased by 28.8% (NECS, 2008). Using the Fall Semester 2000 through Fall Semester 2006 time frame to measure the growth of enrollment at the community college in mid-western Missouri, results provide a comparison that shows a 56% increase in the enrollment of all students. A report from Missouri Coordinating Board for Higher Education compared A+ students with all other students and found a higher percentage of A+ students were enrolled in public two-year institutions during 1997 through 2002

(NECS, 2008). Chi-square tests for independence were used to determine significant differences in the proportion of A+ and non-A+ students regarding full time fall enrollment at a mid-western community college in Missouri. The value of Pearson's chi-square, with 10 degrees of freedom, was shown to be 0.000, with a two-tailed significance level of 1.00, or $\chi^2(10) = , p = .101$ indicating the enrollees were equally distributed and the enrollment at a mid-western community college was not significantly impacted by the A+ Schools Program. When using the data for enrollment percentages at two-year institutions to compare with enrollment of four-year institutions, the value of Pearson's chi-square, with 28 degrees of freedom, was shown to be 37.889, with a two-tailed significance level of .101, or $\chi^2(9) = 37.889, p = .101$, indicating the increased enrollment in community colleges and four-year institutions was not significantly impacted by the A+ Schools Program. Results can be stated that there is no relationship between two variables and the distributions have equal proportions therefore the increased enrollment in community colleges and four-year institutions was not significantly impacted by the A+ Schools Program.

Research Question 2 –Is there a significant difference among A+ students, non-A+ students and the gender of students in fall enrollment in a mid-western community college?

Fall enrollment in the mid-western community college for A+ students began in 1997 with 1 student, or less than 1% of the total enrollment, and steadily increased to reach a high of 25% of the total FTE enrollment in Fall 2006. The percentage of enrollment for A+ students decreased slightly to 21% in Fall 2007. During the eleven years comprising the study the percentage of A+ students enrolled ranged from less than

1% to 25% of the total enrollment. The total FTE was 878 for the Fall Semester 1997 and 1,780 by Fall Semester 2007. The mid-western community college experienced a 61% increase in fall enrollment during the span of eleven years, not including the number of A+ students in the count. The chi-square test was performed to test for significance between the difference in enrollment percentages of A+ students and non-A+ students at a mid-western community college. The value of the Pearson's chi-square, with 9 degrees of freedom, was shown to be 37.889, with a two-tailed significance level of .101, or $\chi^2(9) = 37.889, p = .101$ indicating the groups of enrollees were equally distributed and the enrollment at a mid-western community college was not significantly impacted by the A+ Schools Program. At the mid-western community college the enrollment of A+ students did not differ significantly from that of non-A+ students. Enrollment trends identified in this study indicate there is no significant difference in the community college fall enrollment between A+ and non-A+ students.

Other research has noted a trend in increased enrollment in two-year rather than four-year institutions and the proportion of males has shown a slight increase since 2005. In additional research of A+ students, Lee found "initial two-year enrollment rates of A+ students increased while 4-year enrollment rates decreased, which substantiated the original intent of the A+ Schools Program, to support students who were not planning to attempt post-secondary education (2003). Data from the mid-western community college in Missouri reflect the upward trend in enrollment of A+ students to be a reflection of the growth in enrollment of all students and not a significant contributing factor in the enrollment spike for this particular community college.

Comparisons of fall enrollment disaggregated by gender at the mid-western community college follows. A+ Eligible males ranged from 35% to 40% beginning in 1997 through 2007, conversely the fall enrollment trend for A+ Eligible females ranged from 60% to 65%. These percentages mirrored the fall enrollment trend for all males and females enrolled during the same period at the community college in mid-western Missouri. The chi-square test was performed to test for significance between the difference in enrollment percentages of A+ males and non-A+ males. The chi-square test produced an obtained value of $\chi^2 (7) = 63.000, p = .243$. The observed frequencies for A+ males did not differ significantly from the expected frequencies or it can be stated that the groups of enrollees were equally distributed. The total number of females enrolled during the same time span ranged from 60% to 65% of the total enrollment. Mirroring that percentage was the percentage of enrollment of A+ Eligible females at 57% to 61% of the total enrollment. The chi-square test was performed to test for significance between the enrollment percentages of A+ females and non-A+ females. The chi-square test produced an obtained value of $\chi^2 (7) = 17.500, p = .132$. The observed frequencies for A+ females did not differ significantly from the expected frequencies. No significant difference was found in community college fall enrollment trends between the number of A+ and non-A+ students when disaggregated into the categories of male and female students.

Research Question 3 – Is there a significant difference between A+ and non-A+ students in community college certificate attainment?

Statewide data reported in Measuring Up found 18 of every 100 students in Missouri receive recognition of completion through a certificate, associate degree, or some type of diploma (Measuring Up, 2006). One primary goal of the A+ Schools

Program was to ensure high school students were prepared to proceed to some form of post-secondary education or high wage job. Statistics included by Governor Mel Carnahan highlighted the importance of post-secondary education in the 20 fastest growing future occupations that required more than a high school diploma, but less than a four-year degree (Carnahan, 1993). Bailey noted some education beyond high school is required for access to jobs with earnings that support a family (2003). Bailey and others found the economic value of one year of community college is equivalent to one year of education at a four-year institution (2003). The A+ Schools Program focused on the creation of technology laboratories at A+ designated high schools to infuse technology into courses and require application of theory, replacing general track courses, in order to prepare students to succeed at post-secondary education or high wage job. With the technological skills required for occupations of today, earning a certificate could satisfactorily prepare students for a high wage job. In a 2001 study by the U.S. Department of Education, a cohort class of 1992 was found to transition successfully into the job market as midlevel technicians with three-fourths of their course work in graphics or computer science fields (U. S. NCES, 2001). However, the data from this study does not reflect a similar occurrence. Certificates attained by A+ students in Missouri steadily rose until a high of 97 or 1% of all A+ students was achieved during 2004 then fell to 38 or less than 0.3% of the total of A+ students in 2006. A total of ten certificates were awarded to A+ students at a mid-western community college during the eleven years. Contrary to expectations of the A+ Schools Program, data has not shown an increase in certificate attainment by A+ students at a mid-western community college in Missouri. Certificate attainment is still viewed as a pathway for older workers to move upward in

the job rather than being viewed as preparation for entering the workforce (Personal communication, M. Hamann, October 27, 2009).

Research Question 4 – Is there a significant difference among A+ students, non-A+ students and gender of student in community college associate degree attainment?

Missouri Coordinating Board for Higher Education noted a two-year associate degree completion rate for Missouri two-year public institutions to be on average of 11% (MCBHE, 2008). Data compiled beginning 1997 through 2007 indicated the percentage of degrees earned by all non-A+ Eligible students in Missouri community colleges ranged from 36.7% in 1997 to 6.5% in 2006. The percentage of associate degrees earned by A+ Eligible students ranged from 61.3% in 1997 to 1.1% in 2006. The data was used to compute the Pearson chi-square test of independence to measure the significance of the difference between the observed frequencies and the expected frequencies of percentages of A+ and non-A+ students in attaining an associate degree in all Missouri community colleges. The chi-square test produced an obtained value of $\chi^2(8) = 50.000$, $p = .048$. The value of Pearson's chi-square, with 8 degrees of freedom, was shown to be 50.000, with a two-tailed significance level of .048, indicating the observed frequencies for A+ students who attained associate degrees differed significantly from the expected frequencies. Using the alpha level of 0.05 as the criterion to identify significance, a significant difference was found between the percentages of A+ and non-A+ students who earned associate degrees in Missouri.

The total number of associate degrees attained by non-A+ students in a mid-western community college in Missouri was 3007, ranging from a low of 249 to a high of 349. Data from Table 6 and Table 7 was used to compute the chi-square test of

independence between associate degree attainment of A+ and non-A+ students at a mid-western community college. The value of Pearson's chi-square, with 8 degrees of freedom, was shown to be 80.00, with a two-tailed significance level of .242, or $\chi^2(8) = 80.00, p = .242$, indicating the observed frequency distribution of A+ students who attained an associate degree did not significantly differ from the expected frequency distribution. When compared with non-A+ students, A+ students earned a higher percentage of degrees during that period, however the difference in associate degree attainment between A+ and non-A+ students at a mid-western community college in Missouri is not significant.

Research of a cohort group of A+ students in 1999 that found 41% of A+ students compared with 20% of non-A+ students earned a certificate or degree after 3 years (Martin and Neal, 1999). Galbreath completed a three-year cohort study of A+ high school graduates for 2002 and found 38% of the A+ students attained a certificate of associate degree within three years (2007). In comparison Galbreath cited data from the Missouri Coordinating Board for Higher Education that reported less than 20% of the 2002 non-A+ students earned a certificate or associate degree (2007). The various findings indicate a need for research of a current cohort group of A+ students regarding associate degree completion.

The chi-square test was performed to measure significance between the percentages of A+ males and non-A+ males at the mid-western community college and produced an obtained value of $\chi^2(6) = 34.00, p = .281$. The observed frequencies of associate degree attainment for A+ males did not differ significantly from the expected frequencies. The observed frequencies of associate degree attainment for A+ males did

not differ significantly from the expected frequencies. The chi-square test was performed to test for significance between the percentages of A+ females and non-A+ females attaining an associate degree and produced an obtained value of $\chi^2(6) = 40.00, p = .258$. The observed frequencies for A+ females attaining associate degrees did not differ significantly from the expected frequencies. Data from this research indicate A+ males and females attain associate degrees at rates similar to non-A+ males and females at the mid-western community college.

Achievement of an associate degree may not be a valid indicator of success because students choosing to attend a community college enroll for various other reasons than completing an associate degree (Phelan, 2000). Open enrollment may be one characteristic of community colleges that makes attainment of an associate degree more difficult. Research compiled by Measuring Up, 2000, found the rate of degree completion to be dependent upon the selectivity of the degree granting institution, with more exclusive higher education institutions having higher completion rates (Measuring Up, 2006). A representative from the mid-western community college noted a decline in associate degree attainment was due to the trend of students transferring without attaining an associate degree (Phone conversation with M. Hamann, October 27, 2009).

Research Question 5 – Is there a significant difference among A+ students, non-A+ students and gender in transitioning from a community college to a four-year college?

Community college enrollees who complete their associate degree, transfer to a four-year institution and continue to earn a baccalaureate degree comprise 20% to 30% nationally (Phelan, 2009). A representative from the mid-western community college reported that students often transfer without attaining an associate degree and their

numbers would not be included in the definition of transfer considered by the Missouri Department of Higher Education (Phone conversation, M. Hamann, October 27, 2009). Transfer data for A+ students was available for three consecutive years, 2003 through 2005. According to Financial Aid Advisor, Lydia Clark, accurate transfer data for A+ students is no longer available because A+ students are not required to complete a “Declaration of Transfer” at the mid-western community college in Missouri (personal communication, L. Clark, October 27, 2009). Chi-square tests were computed using the data in Table 9 to test for significance between the transfer percentages of A+ and non-A+ students at a mid-western community college in Missouri. The chi-square test produced an obtained value of $\chi^2(9) = 12.000$, $p = .213$. The observed frequencies for the rates of transfer by A+ students did not differ significantly from the expected frequencies, indicating no significant difference was found between the percentage of A+ and non-A+ students who transfer from a the mid-western community to a four-year institution in Missouri. The research did not perform an analysis of transfer by gender at the mid-western community college because the data was not available.

Using data provided by Missouri Department of Higher Education, the rate of transfer for A+ students at 36% was higher than the average rate of 25% reported for all students who began post-secondary education at a community college (J. Kintzel, personal communication, July, 31, 2009). Less than 25% of community college students in the United States successfully transfer to four-year institutions reported by Bailey (2003), painting a bleak rate of transfer for all community college students. Galbreath cited other researchers including Bingham-Newman and Hopkins, 2004, and Townsend,

2002, whose research identified the national transfer rate to range between 14% and 25% (Galbreath, 2007).

Though the major goal of community colleges noted by Brint and Karabel in 1989, as cited in research by the National Center for Education Statistics, was to prepare students to transfer to four-year institutions, the type of student population served by community colleges may negate achievement of such goal (U.S. NCES, 2003). The characteristics of the community college student population may have a great amount of influence on the bleak national rate of transfer. As noted earlier the open admissions policy has guided the type of student enrolled in community colleges to form a different set of characteristics that include a greater percentage of students who: (a) attend part time, (b) attend multiple institutions before obtaining a certificate or associate degree, (c) enroll in more than one institution simultaneously, (d) transfer to other institutions, and (e) take time off from enrolling in higher education (Boswell & Wilson, 2004). All of the previously mentioned characteristics can inhibit measures of success including transfer to a four-year university. However, previous research by Lee noted the typical A+ students in his study did not exhibit any of these typical characteristics of community college attendees (2003). Lee found that the A+ Schools Program incentives had a tendency to be utilized by middle-income students who already planned to attend college (2003). While the data reflects an impact on increasing transition to four-year institutions, it may indicate the A+ Schools Program is not addressing the original intent to motivate and encourage students who are not planning to seek some form of post-secondary education.

Research in 1999, by the Missouri Community College Association, attempted a follow-up survey of transfer students at the statewide level and found of the 488 students

surveyed, 95% were either very satisfied or satisfied with their transfer preparation (Cosgrove, 1999). Results of the study reported by Cosgrove indicated a problem occurred with 20% of students who completed 24 or more credits by losing credit hours in the transfer process (1999). Overall, the survey indicated Missouri's community colleges were making progress in ensuring transferability of community college credits (Cosgrove, 1999). A tendency might be to attribute this increase in the rate of transfer to cooperative transfer agreements between two-year and four-year institutions, however, McIntosh and Rouse reported research by Roska and Keith in 2008, that found transfer programs have had little impact on transfer rates and degree attainment (McIntosh & Rouse, 2009).

Conclusions

The A+ Schools Program has impacted many aspects of participating high schools throughout Missouri with changes in curriculum focus on technological advances and providing opportunities for making connections with job skills. This research investigated the impact of the A+ Schools Program on community college enrollment data and measures of student success that included obtaining a certificate or associate degree and, or transferring to four-year institutions by students utilizing A+ funds to seek post-secondary education at a mid-western community college in Missouri. Results from the investigation of the impact of the A+ Schools Program at the mid-western community college was found to have no significant impact on increased enrollment, certificate attainment, associate degree attainment, or transition to a four-year institution. A significant difference was found between the percentages of A+ and non-A+ students who earned associate degrees in Missouri. While data reflecting gender differences for

certificate attainment was lacking, the research found no significant difference among gender categories of A+ students and non-A+ students regarding enrollment, associate degree attainment, or transfer to a four-year institution.

Recommendations

Many community colleges do not track students after they leave, as was the situation for the focus of this study, the mid-western community college in Missouri (Phone conversation with M. Hamann, September, 3, 2009). This research along with previous research on the A+ Schools Program by Lee, 2003, Jochems, 2004, and Barbis, 2003, identified a need to centralize the state database system to allow for a more comprehensive study of students as they transition from the K-12 system into post-secondary education. Specifically, there is a need to develop a common framework for effective collection, analysis and use of data on student outcomes at the community college level. The primary use of data at the state and community college levels should be to improve decision making at all levels. Further development of a strong connection with educators at all levels, K – 16, would provide more seamless path for the success of Missouri students.

Requirements of the A+ Schools Program could be mandated statewide to encourage and motivate students in preparations for post-secondary education or high wage job. The original intent of the A+ Schools Program Research was to create a well-prepared workforce through some form of post-secondary education. It appears the group of A+ students achieved success at a similar rate to non-A+ students at the community college level with regard to enrollment, certificate attainment, associate degree attainment and transitioning to a four-year institution. With the technological skills required for

occupations of today, earning a certificate could satisfactorily prepare students for a high wage job, yet this research has found that most A+ students are not seeking vocational certificates at community colleges. When obtaining a certificate is sufficient for students to transition to a high wage job as in the fields of health care and computer technology, educators should promote the attainment of a certificate.

Because community colleges operate with diverse roles, institutional characteristics should be viewed differently. Attainment of an associate degree may not be the most accurate predictor of student success. Another important factor in identifying student success might be tracking the completion rates for the state mandated 42 hours of general education program.

Future Research

Additional research is warranted on the effectiveness of transfer programs. Associate degree attainment may not be the normal avenue for A+ students who transfer to four-year institutions. An official with the Missouri Department of Higher Education suggested using the 42-hour general education block as a measure of success (Phone conversation with J. Kintzel, October 27, 2009). Cohort comparisons with regard to specific the outcomes of the A+ Schools Program that probe into the success of students regarding preparation for post-secondary education, time to degree completion, and competition with non-A+ students for high paying jobs would demonstrate effectiveness of the A+ Schools Program. A new database system adopted by the A+ Schools Division of School Improvement will allow improved tracking of A+ students and assist educational leaders and other stakeholders in making determinations of impact of the A+ Program (Phone conversation with M. Bardwell, July 31, 2009). Reporting of many

aspects of A+ students may be difficult to enforce at the community college level because many community colleges are locally supported entities and therefore not subjected to the same reporting regulations as other institutions (conversation with R. Payne, August 3, 2009). The mid-western community college is working with a clearinghouse to establish the creation of tracking of student transfers at the community college level (Phone conversation with M. Hamann, September 27, 2009). If information gleaned from one-year and five-year follow-up studies conducted by Missouri high schools could be delineated by A+ students and non-A+ students, results could provide valuable data regarding measures of success for those students. Perhaps a focus on the vocational education follow-up and placement rates could highlight outcomes for students attaining certificates utilizing A+ incentives.

Summary

The purpose of this study was to examine the impact of the A+ Schools Program on fall enrollment and measures of success for A+ students who enrolled at a public community college in mid-western Missouri beginning 1997 and continuing through 2007. Measures of success included analyzing the following four indicators of effectiveness (a) enrollment in post-secondary education, (b) certificate attainment, (c) associate degree completion and (d) transfer to a four-year university. Enacted into law as one measure of the Outstanding Schools Act of 1993, the A+ Schools Program offered qualified high school graduates monetary incentives that could be applied to community colleges or vocational schools in the State of Missouri (MODESE, 2001). In the years following inception of the A+ Schools Program, adjustments in program administration

have occurred along with dynamic changes resulting from unique relationships between and among high schools, community colleges and four-year universities.

The A+ Schools Program appears to have no significant impact on fall enrollment at Missouri community colleges and in particular the mid-western community college. Results for the measures of success for A+ students at a mid-western community college in Missouri were found to be similar to the results of non-A+ students. Certificate attainment did not appear to be influenced by the A+ Schools Program. Associate degree completion by A+ students was not significantly different than non-A+ students. Additionally, the rate of transfer for A+ students was not significantly higher than the rate of transfer for all students attending a mid-western community college in Missouri from 1997 to 2007. Differences in gender did not account for differences in A+ students with regard to enrollment in community colleges, associate degree attainment or transfer to a four-year institution. The data for certificate attainment indicated this measure of success was minimal statewide. Data was not available for delineation into gender categories of male and female; therefore no conclusions could be formed from this research regarding certificate attainment. Implications from this study are two-fold with one focus on the development of a common framework for effective collection, analysis and use of data on student outcomes at the community college level for development of a strong connection with educators at all levels, K – 16. The focus of the second implication is to increase participation in the A+ schools program or adhere to program requirements to ensure all students in Missouri are prepared to pursue post-secondary education and employment.

Results of this study could be used to justify increasing the number of participants in the A+ program to include all high schools in Missouri and to increase the capacity for collecting student data and utilize the data to improve decision making at all levels. Personnel at high schools, vocational schools and community colleges and local communities should revisit the original intent of the A+ Schools Program through the partnership plan in order to provide the best path for post-secondary education and transition into the world of work. If future research indicates that vocational programs can provide necessary skill and training for students to pursue post-secondary education and employment, students could be directed at the high school level toward certificate attainment as a cost saving and time saving path.

REFERENCES

- Achieving the Dream. (2006). *Increasing Student Success at Community Colleges*. Retrieved May 31, 2009, from <http://www.achievingthedream.org/images/index03/Framing-Paper July-2006-final.pdf>
- American Institutes for Research (2005, April). *The implications of NCLB accountability for comprehensive school reform*. Presented at the 2005 Annual Conference of the American Education Research Association, Montreal, Canada. Retrieved October 22, 2007, from <http://www.ccsso.org/content/pdfs/AERA2005Lefloch.doc>
- Bailey, T. R. (2003). Community colleges in the 21st century: Challenges and opportunities. Community College Research Center Brief Number 15. Retrieved January 31, 2009, from <http://www.tc.columbia.edu/ccrc/Collection.asp?cid=8>
- Barbis, A. M. (2003). The impact of the Missouri A+ schools program on high school graduation rates and post-secondary enrollment rates.
- Barnes, T., Ehlert, M., Worts, W., Larivee, G., & Patterson, T. (2001, February). *Grading A+ Schools: A panel discussion of promise, practice, & results*. Presented at the 2001 Statewide Conference on Transfer and Articulation, Osage Beach, MO.
- Bernhardt, V. L. (1998). Data analysis for comprehensive schoolwide improvement. Larchmont, NY: Eye on education.
- Beeson, E. & Strange, M. (2003). Why rural matters 2003: The continuing need for every state to take action on rural education. Retrieved June 2, 2003, from <http://www.ruraledu.org>
- Bogdan, R. C. & Biklen, S. K. (1998). *Qualitative research in education: an introduction to theory and methods*. (3rd ed.). Boston: Allyn and Bacon.
- Bolman L. G., & Deal, T. E. (1997). *Reframing organizations: Artistry, choice, and leadership*. (2nd ed.). San Francisco: Jossey-Bass.
- Borman, J. D. (2002). *Comprehensive school reform and student achievement: A meta analysis* (Rep. No. 59). Baltimore: Johns Hopkins University, Center for Research on the Education of Students Placed At Risk. Retrieved September 27, 2004, from <http://csos.jhu.edu>
- Brubaker, D. L. & Thomas, R. M. (2000). *Thesis and dissertations: A guide to planning, Research, and writing*. Westport, CT: Bergin & Garvey.
- Carnahan, M. (1993). *A Primer to the Outstanding Schools Act*. Jefferson City, Missouri.

- Center for American Progress. (2009). The other college: Retention and completion rates among two-year college students. Retrieved March 17, 2009, from <http://www.americanprogress.org/issu>
- Center for Community College Policy, State Files, Missouri, Historical Overview, 2006. Retrieved March 18, 2008, from <http://www.communitycollegepolicy.org>
- Clark, M. A., Shreve, K. & Stone, C. B. (2004). Taking stock in children: Collaborating to promote success for low-income secondary students. *National Association of Secondary School Principals*, 88(641), 61-73.
- Cohen, A. M. & Sanchez, J. R. (1997). The transfer rate: A model of consistency. (ERIC Document Reproduction Service No. ED409952).
- Cosgrove, J. J. (1999). Missouri's transfer experience: Mapping the peaks and valleys on the road to student success. Retrieved October 22, 2007, from www.natn.org/assets/files/StateATransferPolicy2.pdf
- Daggett, W. R., (2004). Reforming American high schools: Why, what, and how. Retrieved May 27, 2005, from <http://daggett.com/pdf.ref>
- Davies, D. (2002). The 10th school revisited: Are school/family/community partnerships on the reform agenda for now? *Phi Delta Kappan*, 83(5), 388-392.
- Designated A+ Public High Schools. Retrieved November 16, 2007, from <http://www.dese.state.mo.us/divvoted/aplus/index.html>
- Dougherty, K. J. (1991). Community colleges. New York: Teachers College Press.
- DuFour, R. & Eaker, R. (1998). Professional learning communities at work: Best practices for enhancing student achievement. National Education Service. Bloomington, IN: Association for Supervision and Curriculum Development.
- Education Commission of the States. (July, 2004). *Keeping America's Promise: A report on the future of the community college*. [Brochure]. Denver, CO: Wilson, C. D. & Boswell, K.
- Farley, D. (2007, October 5). Area schools hurt by few taxable properties. *Daily American Republic*, pp. A1, A2.
- Fowler, F. C. (2000). *Policy studies for educational leaders: An introduction*. New Jersey: Allyn & Bacon.
- Fullan, M., with Stiegelbauer, S. (1991). The new meaning of educational change (2nd ed.). New York: Teachers College Press.

- Fullan, M. (2001). *Leading in a culture of change*. San Francisco: Jossey-Bass.
- Galbreath, L. M. (2007). Tracking Public Post-Secondary Enrollment Patterns of Missouri A+ Program Graduates. Unpublished doctoral dissertation, University of Missouri, Columbia.
- Goals 2000: Educate America Act. (1994). Retrieved February 22, 2006, from <http://www.nd.edu/~rbarger/www7/goals200.html>
- Goodlad, J. L. (2002). Kudzu, rabbits, and school reform. *Phi Delta Kappan*, 84(1), 16-23.
- Hatch, T. (2002). When improvement programs collide. *Phi Delta Kappan* 83(8), 626-639.
- Jochems, J.T. (2004). Missouri A+ students: How are they doing? Unpublished doctoral dissertation, University of Arkansas, Fayetteville.
- Johnson, J. (2008, May). *Transition matters: Community college to bachelor's degree*. Proceedings of the 2008 Advisory Committee Symposium on Student Financial Assistance. Retrieved January 31, 2009, from <http://www.ed.gov/acsfa/d7.pdf/>
- Jones, J. A. (1997). Memo to members of the State of Missouri General Assembly.
- Krakowiak, T. (2008, August, 22). TRCC OKs own A+ scholarships. *Daily American Republic*, pp. A1, A2.
- Lambert, L. (2003). Leadership capacity for lasting school improvement. Alexandria, VA: Association for Supervision and Curriculum Development.
- Lee, M., Mueser, P R., & Podgursky, M. (2004). *An evaluation of Missouri's A+ schools program*. Unpublished doctoral dissertation, University of Missouri, Columbia.
- Martin, B. N. & Neal, V. (1999, October). *A descriptive study of the implementation and alignment of career pathways and the A+ schools program*. Paper presented at the meeting of the Rural Education Research Forum, Colorado Springs, CO.
- Massell, D, Kirst, M., & Hoppe, M. (1997). Persistence and Change: Standards-based reform in nine states. *Consortium for Policy Research in Education*. Retrieved November 1, 2004, from <http://www.upenn.edu/gse/cpre/>
- McPhee, S. (2006). *En route to the baccalaureate: Community college student outcomes*. Retrieved January, 12, 2008, from <http://aacc.nche.edu/Publications/Briefs/Documents/09162006enroute.pdf>

- Measuring Up: The National Report Card on Higher Education (2006). Retrieved November 12, 2007, from <http://measuringup.highereducation.org/reports/stateprofilenet.cfm?myyear=2006&stateName=Missouri>
- Mid-continent Regional Education Laboratory (McRel). (1993). Presidential Task Force on Psychology in Education American Psychological Association. *Learner centered psychological principles: Guidelines for redesign and reform*.
- Missouri Community College Association (1998). *Cash in on A+: Resource book 1998-1999*. [Brochure] Jefferson City, MO: Department of Elementary and Secondary Education.
- Missouri Coordinating Board for Higher Education. (2008). State Files. Retrieved March 18, 2008, from www.mochbe.gov
- Missouri Department of Elementary and Secondary Education (2006). *Improving Missouri High Schools: A report of the commissioner's study group on high school reform*. [Brochure] Jefferson City, MO.
- Missouri Department of Higher Education. (2005). *Enhanced Missouri Student Achievement Study Manual*. Retrieved February 7, 2008, from <http://www.dhe.mo.gov/emsasmanualreport.shtml>
- Missouri State University, Springfield. (2007, May). Countdown to SMSU centennial: The six-year plan, Enrollment Management – Countdown to SMSU Centennial. Retrieved January 31, 2009, from <http://www.missouristate.edu/countdown/enrollmentmanagement.htm>
- Moltz, D. (2008). The community college enrollment boom. *Inside Higher Education*. Retrieved January 31, 2009, from <http://www.insidehighered.com/layout/set/print/news/2008/08/22/growth>
- National Association of Secondary School Principals (NASSP, 2004). *Breaking Ranks II: Strategies for leading high school reform*. Reston, VA.
- National Association of Secondary School Principals (2005). Outline legislative recommendations for high school reforms to Congress. Retrieved February 28, 2005, from http://www.principals.org/s_nassp/sec.asp?CID=1238&DID=55535
- Outstanding Schools Act, Missouri Senate, C. C. C. H. S. C. S. S. S. C. S. S. B. 380 (1993).
- Patton, M. Q. (1997). *Utilization-focused evaluation: the new century text*. (3rd ed.). Thousand Oaks, CA: Sage Publications.

- Pennington, H. (2004). Fast track to college: Increasing postsecondary success for all students. *Renewing our Schools, Securing Our Future, A National Task Force on Public Education*.
- Phelan, D. J. (2000). *Education Commission of the States*. Enrollment policies and student access at community colleges.
- Reeves, D. B. (2005). Constructive alternative in a destructive debate. *Principal Leadership* 5(7), 38–43.
- Rocha, E. & Sharkey, A. (2005). *Education: The state we're in*. Renewing our Schools, Securing Our Future, A National Task Force on Public Education.
- RSMo 160.545 (1993).
- Sandy, J., Gonzales, A., & Hilmer, M.J. (2006, October 10). *Alternative paths to college completion: Effect of attending a 2-year school on the probability of completing a 4-year degree*. *Economics of Education Review* 25(5), 463 – 471. (ERIC Document Reproduction Service No. EJ743701).
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.
- Schmoker, M. (1999). *Results: The key to continuous school improvement*. 2nd Ed. Alexandria VA: Association for Supervision and Curriculum Development.
- Stadler, D., & Johnson, J. (1999, August). *Missouri's A+ schools: A legislative attempt to stimulate high school reform*. Paper presented at the Annual Meeting of the National Council of Professors of Educational Administration, Jackson WY.
- Three Rivers Community College Catalog. (2007). Volume 37(1). [Brochure]. Poplar Bluff, MO: Author.
- Townsend, B. K. (2001). Blurring the lines: Transforming terminal education to transfer education. *New Directions for Community Colleges*, 115, 63-71.
- U.S. Department of Education, National Center for Educational Statistics (NCES, 2001). Community college transfer rates to 4-year institutions using alternative definitions of transfer. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001197>
- U. S. Department of Education, National Center for Educational Statistics (2003). Overview and inventory of state education reforms: 1990 to 2000. NCES 2003-02, by Hurst, D., Tan, A., Meek, A., & Sellers, J. Project Officer: McArthur, E. Washington, DC: 2003.

Vold, D. J. & DeVitis, J. L. (Eds.). (1991). *School reform in the deep south: A critical appraisal*. Tuscaloosa, AL: University of Alabama Press.

Woolf, H. B. & et al. (Ed.) (1977). *Webster's New Collegiate Dictionary*. (8th ed.). Springfield, MA: G. & C. Merriam Co.

VITA

Patricia Jane Foster Holloway was born January 1, 1952 in Poplar Bluff, Missouri. She spent the majority of her early life moving from one sharecropper house to another, relocating to four elementary schools by the age of nine. With each move she found that her skills varied from being at the top of the class to being placed in a low reading group. One teacher took particular notice and encouraged her to succeed. Being the eldest of five children, her responsibilities grew with age. She graduated from Puxico High School in 1969 and worked in a factory for five years. During that time she married her high school sweetheart, David Holloway. After encouragement from her sister-in-law, Pat embarked on a mission to seek a college degree. After three short years, she graduated with honors and began teaching students with learning disabilities at the same school district she was graduated. During her 29-year tenure with Puxico R-VIII Schools, Pat continued seeking new skills and education, which led her to various assignments with the district. In 1981, she graduated with a Master of Art for Guidance & Counseling. She earned certificates to become a Psychological Examiner, Elementary Principal and Special Education Director. In 2001, Pat entered the doctoral program at the University of Missouri-Columbia where she completed her degree in educational leadership successfully defending this dissertation on December 1, 2009. Pat retired from public school in 2006 to become a Conservation Education Consultant for the Missouri Department of Conservation where she teaches graduate environmental courses and engages in curriculum assistance to schools and communities throughout Southeast Missouri.