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Missouri A+ Students: How Are They Doing?

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MISSOURI A+ STUDENTS: HOW ARE THEY DOING?

MISSOURI A+ STUDENTS: HOW ARE THEY DOING?

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education

By

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TABLE OF CONTENTS

| | |
|---|----|
| CHAPTER I: INTRODUCTION | 1 |
| Background of the A+ Program | 2 |
| Impact of the A+ Program | 4 |
| Purposes of the Study | 8 |
| Significance of the Study | 9 |
| Research Questions | 10 |
| Assumptions | 11 |
| Limitations | 11 |
| Delimitations | 12 |
| Definition of Terms | 12 |
| Summary | 14 |
| CHAPTER II: REVIEW OF THE LITERATURE | |
| Introduction | 16 |
| Process Used to Locate Applicable Literature | 17 |
| The Community College Student | 18 |
| History of Merit-Based Scholarships | 20 |
| Success Factors | 24 |
| Student Characteristics | 28 |
| State Scholarship Programs | 35 |
| History and Current Status of the Missouri A+ Program | 45 |
| Summary | 61 |

| | |
|---|-----|
| CHAPTER III: METHODOLOGY AND PROCEDURES | |
| Introduction | 64 |
| Setting of the Study | 64 |
| Research Design | 66 |
| Identification of the Target Population | 67 |
| Selection of a Sample | 68 |
| Data for Collection Procedures | 70 |
| Data Analysis for Procedures | 70 |
| Summary | 75 |
| CHAPTER IV: PRESENTATION OF DATA | |
| Purposes of the Study | 76 |
| Subjects | 77 |
| Presentation of the Data | 78 |
| Summary | 87 |
| CHAPTER V: SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS | |
| Overview of the Study | 88 |
| Findings | 92 |
| Conclusions | 96 |
| Recommendations for Improved Practice | 98 |
| Recommendations for Further Study | 100 |
| Summary | 104 |
| REFERENCES | 108 |

LIST OF TABLES

| | |
|--|----|
| Table 1: Number of Subjects in each Target Sample | 69 |
| Table 2: Description of the Data Needed for Research Question 1 – Did A+ Students Exhibit Higher Academic Performance at OTC than Two Other Comparison Groups of Non-A+ Students Based on Cumulative GPA, Number of Remedial Courses Taken, and Graduation Rate? | 71 |
| Table 3: Description of the Data Needed for Research Question 2 – Regarding the Dependent Variable of College GPA based on Gender, Size of High School, and Degree Sought | 73 |
| Table 4: Description of the Data Needed for Research Question 2 – Regarding the Dependent Variable of Number of Remedial Courses Taken based on Gender, Size of High School, and Degree Sought | 74 |
| Table 5: Mean Results for Research Question 1 – Did A+ Students Exhibit Higher Academic Performance at OTC than Two Other Comparison Groups of Non-A+ Students Based on Cumulative GPA, Number of Remedial Courses Taken, and Graduation Rate? | 78 |
| Table 6: Analysis of Variance for Mean College GPA, Number of Remedial Courses Taken, and Graduation Rate Between A+, Non-A+ Scholarship, and Non-A+ Non-Scholarship Students | 80 |
| Table 7: Mean Results for GPA based on Gender, Size of High School, and Type of Degree Sought | 81 |

| | |
|--|----|
| Table 8: Analysis of Variance for Mean College GPA based on Gender, Size of High School, and Degree Sought | 83 |
| Table 9: Mean Results for Number of Remedial Courses Taken based on Gender, Size of High School, and Degree Sought | 85 |
| Table 10: Analysis of Variance for Mean Number of Remedial Courses Taken based on Gender, Size of High School, and Degree Sought | 86 |

APPENDIX

Appendix A: Number of A+ High Schools in the State of Missouri listed

By Size, County, and Whether or not Students Have

Enrolled at OTC

116

CHAPTER ONE

Introduction

How much can a college education increase the earning potential of a person? According to the U. S. Department of Labor (2004), “jobs that require high levels of education and skill pay higher wages than jobs that require few skills and little education” (p. 1). Graduates with an Associate of Arts (AA) degree will earn approximately 23% more per year than those with a high school diploma; graduates with a Bachelor’s degree will earn 31% more per year than those with an AA, and those graduates with a Master’s degree will earn 19% more per year than those with a Bachelor’s degree (Dohm & Wyatt, 2002). In addition, doctoral graduates will earn 145% more per year than individuals with only a high school diploma (Dohm & Wyatt, 2002). Not only does higher education produce higher wages, it increases an individual’s chances for long-term employability and, in most cases, guarantees the potential for higher lifetime earnings. An illustration of this employability is a report by the United States Department of Labor (2004), which indicates that those who possess professional degrees have a significantly lower unemployment rate than those who have a high school diploma or less. Higher education provides a positive economic benefit, yet the cost of obtaining a post-secondary degree is skyrocketing at an alarming rate. Given today’s increasing costs of higher education, how can students afford to attend a college or university?

One solution that addresses this growing concern is the availability of financial aid, which offsets the rising cost of tuition and other economic barriers that hinder entrance into institutions of higher learning. St. John (1991), in his review of the

impact of student financial aid, concluded that student aid is an effective mechanism for promoting equal educational opportunity/access into higher education. Financial aid is available in many forms ranging from the Federal Title IV programs to state grants and scholarships. Over the last decade, Missouri and numerous other states have created state-funded, merit-based scholarship programs to encourage students to take more challenging courses during high school in order to better prepare for higher education or the technical workforce and to provide them access into higher education (Creech, 1998). These state-funded, merit-based scholarship programs are relatively new and have become increasingly more popular over the last 10 years; however, there is little information as to whether or not they are having the desired effects.

Missouri's merit-based program is titled the A+ Program. As stated above, there is a significant lack of research regarding its effectiveness, and in fact, as of the date of this study, there was no published research regarding any aspect of the A+ Program. This lack of information stimulated this study.

Background of the A+ Program

The State of Missouri created the A+ Schools Program in 1993 by establishing the Outstanding Schools Act (Missouri, 2002) to help public secondary schools commit to the following three objectives: (a) all students graduate from high school, (b) all students complete a selection of high school studies that is challenging and for which there are identified learning expectations, and (c) all students proceed from high school graduation to a college or postsecondary vocational or technical school or high wage job with work place skill development opportunities (Outstanding Schools Act, 1993). Also, the state designed A+ to lower drop-out rates, increase attendance,

increase high school GPAs, and increase the college enrollment rate of high school students. The program had three main goals: (a) to reduce the high school dropout rate, (b) to raise academic expectations of high school students, and (c) to ensure that all students, when they graduate, are well prepared to pursue advanced education, employment, or both (Missouri, 2002).

For students to qualify and receive A+ funding, they must meet the following four requirements: (a) maintain a cumulative grade point average (GPA) of 2.50 or higher through all four years of high school, (b) maintain a 95% attendance rate over four years, (c) maintain and complete a minimum of 50 hours of non-paid tutoring, and (d) maintain or exceed the high school's good citizenship policy (Outstanding Schools Act, 1993). If students complete these requirements, they are eligible to attend any community college or vocational school in the state of Missouri without paying tuition and required fees. They may continue to receive these benefits as long as they enroll for, and complete, a full-time course load (as defined by the receiving institution) each semester and maintain a 2.50 cumulative GPA. The A+ funding is available for up to 48 months from high school graduation, six terms of attendance, or the completion of an associate's degree, whichever comes first (Missouri, 2002).

As indicated by the above requirements, the A+ Program has the potential to not only improve high school academic performance but also better prepare students for state community college and vocational school attendance. Detailed discussion of the A+ Program is found in Chapter II after the examination of its results since 1993.

Impact of the A+ Program

Although no research has been conducted, signs exist that the A+ Program has had an influence on both secondary and post-secondary institutions across the state. This section will review the impact of A+ on the following: (a) high schools, (b) number of students qualifying, (c) number of students utilizing funding, (d) Ozarks Technical Community College (OTC), (e) state funding, (f) community colleges funding, (g) savings to local taxpayers, and (h) enrollments in Missouri community colleges.

Impact on High Schools

Although there has been no published research conducted regarding the impact of the A+ Program on high schools, high school administrators indicate the program has influenced graduation rates, attendance rates, GPAs, drop-out rates, and discipline problems. In addition, to receive A+ designation, the high schools must show a commitment to the A+ Program. These program requirements are detailed in Chapter II, but briefly the high schools must: (a) establish performance standards to meet the goals and objectives of the program, (b) specify competencies for all high school courses, (c) eliminate the general education track and require more rigorous coursework for vocational students, (d) outline procedures to identify dropouts and establish intervention services, (e) develop a partnership plan with local businesses, parents, and colleges, and (f) create and fund an A+ Coordinator's position.

Impact on Number of Students Qualifying

At the beginning of the program in 1996-97 school year (the first year Missouri had A+ graduates), 433 high school students were eligible for A+ funding. The

number of eligible students has continued to increase each year as follows: (a) 1997-98, 1,855 students; (b) 1998-99, 4,771 students; (c) 1999-00, 9,379 students; (d) 2000-01, 15,148 students; (e) 2001-02, 21,740 students, and (f) 2002-03, 28,302 students. The final numbers were not available for the 2003-04 school year; however, the state is predicting over 40,000 students to be eligible for this funding (Missouri Department of Education, 2003).

Impact on Number of Students Utilizing Funding

The State of Missouri reimbursed 291 students in 1997-98, the first academic year that students were eligible to utilize A+ funding. The number of students has increased every year as follows: (a) 1998-99, 1,057; (b) 1999-00, 2,218; (c) 2000-01, 3,530; (d) 2001-02, 5,381, and (e) 2002-03, 6,747. The final numbers were not available for 2003-04; however, the state is predicting the use of A+ funding for over 7,000 students (Missouri Department of Education, 2003).

Impact on OTC

In the 1997-98 academic year, OTC had 21 A+ students enrolled at the institution. This number has continued to increase each year as follows: (a) 1998-99, 88 A+ students; (b) 1999-00, 212 A+ students; (c) 2000-01, 420 A+ students; (d) 2001-02, 811 A+ students; (e) 2002-03, 999 A+ students, and (f) 2003-04, 1,225 A+ students (Ozarks Enrollment Report, 2003).

Impact on State Funding

In order to fund this program, Missouri began with a state appropriation of \$5 million in 1994 (Missouri Department of Education, 2003). The level of funding increased the first seven years but has then been reduced in the last two years due to

state budget cuts. The million dollar state appropriations are as follows: (a) 1995, \$7.5; (b) 1996, \$10.5; (c) 1997, \$13; (d) 1998, \$13.9; (e) 1999, \$15.4; (f) 2000, \$18.2; (g) 2001, \$19.3; (h) 2002, \$18.525, and (i) 2003, \$17.1 (Missouri Department of Education, 2003 and Missouri State Government, 2004). Many involved with the A+ Program are becoming concerned that as tuition costs rise and the number of A+ students increases, there will not be sufficient funds to assist all of the eligible students.

Potential Impact on Community Colleges

As the State of Missouri continues to struggle with balancing its budget, many legislators are looking for ways to cut funding, including funding for higher education. Since A+ students may only attend a community college or vocational school, some legislators have suggested that the state view this funding as part of the money allotted to the community college sector and want to reduce the regular appropriation made to community colleges by the amount allocated to the A+ Program. The state sets the budget for the A+ Program based on the potential maximum amount of money needed to cover the total number of A+ eligible students. However, not all students who are eligible for A+ funding actually attend a community college. If the legislature were to reduce the community college allocation by the budgeted A+ funding level without all of these students actually attending community colleges, there would be no way for the colleges to recuperate the lost funding.

In addition, many students may not be able to attend community colleges without this funding. This could lead to devastating decreases in overall enrollments, especially to some specific program areas.

Potential Impact on the Tax Payer

Another impact is cost-savings to the state. Many legislators view the program as a way to save the state money because it is less expensive to educate students at community colleges than at four-year colleges and universities. During the 2002-03 school year, the average tuition cost at a community college in Missouri was \$2,130 per year, while the average tuition cost at a public four-year college or university was \$4,140 per year (Ozarks, 2004). A further savings to the tax payer evolves from the A+ regulation allowing colleges to bill the State of Missouri for required tuition and fees only after any Federal Pell Grant has been applied to all eligible students' accounts. For example, if a student's total tuition bill is \$2,000, and the student qualifies for \$1,500 in Federal Pell Grant, the state would only be billed for \$500 in A+ funding, saving the state \$1,500. Thus, since tuition costs are less in the community college and the state pays only if students do not qualify for federal monies, the A+ Program is a potential money saver for the state.

Potential Impact on Enrollment in Missouri's Colleges

The Chronicle of Higher Education Almanac (2003) lists 119 colleges and universities in the state of Missouri. Of these 119 institutions, 64 are private, four-year colleges; 13 are public, four-year colleges; 19 are public, two-year colleges; and 23 are private, two-year colleges. During the 2002-03 academic year, 266,802 undergraduate students enrolled in these Missouri institutions. Of this total undergraduate population, only 79,219 students, or 30%, were enrolled in public two-year institutions (*Chronicle*, 2003). Approximately 18% of the total undergraduate population in the state consisted of minorities, and the proportion of minority students

enrolling at the public two-year colleges was 16.2% (*Chronicle*, 2003). The report also indicated that 56.4% of the students were women and 58.4% were considered full-time (*Chronicle*, 2003).

In contrast to these numbers, Ozarks Technical Community College (OTC) Enrollment Report (2003) showed that during the 2002-03 academic year, 44.9% of the students were considered full-time, 51.7% were women, and 5.1% were minorities. With the costs of tuition rising, the A+ Program could increase the percentage of students attending community colleges. In addition, the A+ Program should definitely increase the percentage of students attending community colleges full-time and could possibly increase the percentage of women and minorities attending these institutions.

The influence of the A+ Program can be associated with its impact on high schools, college going rates, number of students qualifying, number of students utilizing funding, OTC enrollment, and state funding. Several other potential areas of impact include community college funding, savings for taxpayers, and enrollment numbers in Missouri's colleges. The focus of this research will now shift to the purposes of the study.

Purposes of the Study

The first purpose of this study was to determine if students receiving assistance through the A+ Program exhibited higher academic performance at OTC than two comparison groups of non-A+ students with similar background characteristics. Academic performance was measured by college cumulative grade point average, number of remedial courses taken, and graduation rates. The second purpose of the study was to determine if students receiving assistance through the A+ Program

(categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics.

Significance of the Study

This research study was an important project for a number of reasons. Four reasons are discussed below.

First, despite A+ having been in existence for 11 years and therefore it having recently consumed a total of \$17.1 million dollars in the state budget, I was unable to locate a published research study dealing with any aspect of the A+ Program. When I contacted the State Director of the A+ Program I again found no study existed.

Second, the State of Missouri is currently in a monetary crisis with a budget shortfall. Legislators are looking for ways to cut funding, save money, or both. Without a study of the A+ Program, legislators could cut the program based on their own anecdotal evidence. With the results of a study, the present legislators will find whether or not the program is a justifiable expense.

Third, Ozarks Technical Community College (OTC), the Department of Elementary and Secondary Education (DESE), the Coordinating Board of Higher Education (CBHE), public high schools, and the other community colleges and vocational schools participating in this program will all benefit from this study in several ways. First, DESE and CBHE could use this information to propose policy changes to the program. Second, OTC and other community and technical colleges may be able to better assist A+ students. And third, high schools might be able to better prepare A+ students for higher education.

Fourth, OTC is looking for ways to better assist the A+ students on its campus, to provide resources to those students trying to regain eligibility, to assist high school A+ students with the transition to college, and to provide feedback to high schools on ways they can help their college bound A+ students better succeed. Currently, OTC has over 1,200 A+ students enrolled and receiving A+ assistance. Therefore, relevance of this study to OTC is significant.

Research Questions

To accomplish the purposes of this study, several research questions had to be answered. They included the following:

1. Did students receiving assistance through the A+ Program exhibit higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics? Specifically:
 - a. Did they have statistically significant higher cumulative grade point averages?
 - b. Were they required to take a statistically significantly lower number of remedial courses?
 - c. Did they graduate at a higher rate?
2. Did students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibit higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics? Specifically:
 - a. Did males or females differ in achievement?

- b. Did size of high school matter? Did students who graduated from a small high school (less than 500 students), a medium high school (501 to 999 students), or a large high school (1000 or more students) differ in achievement?
- c. Did students seeking an Associate of Arts degree or those seeking an Associate of Applied Science degree differ in achievement?

Assumptions

The methodology and procedures of this study were based on two assumptions.

They were:

1. The three-year period, fall 2000 through spring 2003, was a sufficient time frame from which to collect reliable data.
2. The methods used to choose the samples resulted in groups who were representative of the population.

Limitations

The institution and students chosen for this study may not be representative of the entire state of Missouri. As a result, the findings may not be applicable to other institutions and A+ students across the state.

A+ schools are required to revamp their curriculum, eliminate the general track and add new rigorous courses, such as algebra and advanced English, to the vocational track. Whereas students in the comparison groups may or may not have taken these courses, A+ schools required their students to take these new courses. In Springfield, for example, there are five public schools, but only three are designated as A+ eligible

high schools. Although not all of these high schools are participating in the A+ Program, all five schools realigned their curriculum to be in compliance with A+.

Delimitations

The original intent of this research was to do a statewide evaluation. With this goal in mind, the Department of Elementary and Secondary Education, the Coordinating Board for Higher Education, and the Missouri Director of A+ were contacted regarding collecting a statewide sample of A+ students. They were unable to assist with this request due to restraints on resources and time, making it impossible to collect a statewide sample. Therefore, the study was delimited to A+ students enrolled at Ozarks Technical Community College.

The A+ Program is restricted for use at only community colleges or vocational schools. Given this limitation, the literature review will be delimited to studies related to these types of institutions.

Definition of Terms

To avoid confusion, the following key terms needed to be defined:

A+ Program: A program started in 1993 that provides tuition and required fees at any community college or vocational school in the state of Missouri for students who graduate from an A+ designated high school and meets the following requirements: (a) they have maintained a cumulative GPA of 2.50 or higher all through four years of high school, (b) they have maintained a 95% attendance rate over four years of high school, (c) they have completed a minimum of 50 hours of free tutoring, and (d) they have met the high school's good citizenship policy (Missouri, 2002).

Cumulative grade point average: The grade point average (GPA) is a ratio denoting the overall quality of a student's academic record and is used in comparing the student with either a standard or with other students. The GPA is commonly calculated by (a) multiplying the credits for each course by the grade points associated with the grade earned (A=4, B=3, C=2, D=1, F=0), (b) totaling the points earned for all courses, and (c) dividing the total points by the total number of graded credits attempted, as defined by the institution (AACRAO, 1996).

Graduation rate: The number of students completing the degree program divided by the number of students entering the program in the same cohort (Hyatt, 2001).

Remedial courses: Any credit course taken at the community college that is numbered below 100 and for which the student will receive a grade designated with an "N" in front of the grade, indicating that the grade will not be used in the calculation of the GPA (Ozarks Catalog, 2003). These courses are also referred to as developmental courses. The terms remedial and developmental will be used interchangeably throughout this study.

Scholarship recipient: Any student enrolled full-time at the community college who is receiving any one of 12 institutionally funded merit-based scholarships.

Associate of Arts degree: A degree program requiring a minimum of 64 credit hours of prescribed general education courses that is designed for transfer to a four-year college or university.

Associate of Applied Science degree: A degree program requiring a minimum of 62 credit hours in a specific technical area that is designed to lead directly to employment.

Summary

This chapter began not only by introducing the importance of possessing an education in economic terms for the individual but also by mentioning that the cost of obtaining this education has skyrocketed. One solution to address these high costs is financial aid, especially merit-based aid such as the A+ Program. Also mentioned was the significant lack of research regarding the A+ Program.

The second section gave a brief overview of the A+ Program. This review included the main objectives and goals of A+ in addition to the criteria students must meet in high school to qualify for funding. This section ended with requirements for students to maintain their college eligibility and their funding time span.

The third section examined the impact of the A+ Program. Five different impacts were covered including the impact on high schools, the impact on the number of students qualifying, the impact on the number of students utilizing funding, the impact on OTC, and the impact on state funding. In addition, three potential impacts were explored including community colleges, savings to the taxpayer, and enrollments in Missouri's colleges.

The next three sections stated the purposes for the study, the significance of the study, and the specific research questions for the study. This study had a two-fold purpose and two research questions.

The last three sections of the chapter covered the assumptions, limitations, and delimitations of the study. Two assumptions, two limitations, and two delimitations were specifically mentioned. This was followed by a section defining the key terms used in the study.

A key issue with any scholarship program is the success of the students who benefit from the scholarship. The A+ Program was put in place to raise academic standards and open doors to higher education in Missouri. One of its key goals was that when A+ students graduated from high school, they would be ready to pursue higher education. With this goal in mind, one might assume that these students should perform as well as, if not better than, similar students. To date, however, there has been no research to determine whether any difference exists in the academic performance of these students.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

The primary purpose of this study was to determine if students receiving assistance through the A+ Program exhibited higher academic performance at OTC than two comparison groups of non-A+ students with similar background characteristics. Academic performance was measured by college cumulative grade point average, number of remedial courses taken, and graduation rates. A secondary purpose of the study was to determine if students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. This chapter summarizes research relating to the relationship between merit-based aid, such as the A+ Program, and the academic performance measures mentioned above.

The review of literature begins with an overview of the community college student then proceeds with a brief history of merit-based scholarships including a synopsis of the literature exploring merit-based scholarship students' success based on cumulative GPAs, number of remedial courses taken, and graduation rates as compared to other students. This is followed by a section reviewing the literature regarding student characteristics (related to academic performance) examined in this study: gender, size of high school, and degree sought. This review concludes with the literature on state merit-based aid, including the innovation and history of the A+

Program. As mentioned earlier, the review of literature was delimited to studies conducted in community colleges.

Process Used to Locate Applicable Literature

This literature review is based on a variety of resources with the majority of the research done through the Mullins Library at the University of Arkansas and the Meyer Library on the campus of Southwest Missouri State University. Included are electronic resources when possible and manual searches of books, manuscripts, reports, dissertations, and journals as needed, all from studies conducted in the 1960s through 2004.

Primary sources consist of literature reported by an individual who actually conducted the research or who originated the ideas (Creswell, 2002). For primary sources, *The Chronicle of Higher Education*, Ebsco, First Search, InfoLinks, ProQuest, ProQuest Digital Dissertations, Lexis Nexus, JSTOR, and WorldCat Dissertations provided relevant data. For additional primary sources, I conducted an ERIC computer search for report citations in Research in Education (RIE) and for journal citations in the Current Index of Journals in Higher Education (CIJHE).

I started my search using the following descriptors: community colleges, two-year colleges, scholarships, merit scholarships, no need scholarships, financial aid, grade point average, remediation, remedial instruction, remedial courses, developmental courses, graduation, gender, size of school, school size, urban and rural schools, associate degrees, occupational degrees, degree requirements, A+, Georgia Hope Scholarship, Kentucky Educational Excellence Scholarship, Louisiana Tuition Opportunity Program, Maryland Science and Technology Scholarship, South Carolina

Palmetto Scholars, South Carolina Legislative Incentives for Future Excellence, and Florida Bright Futures Program. After an extensive search and consultation with Elizabeth McKee, reference librarian at Mullins Library, I found that the following combination of descriptors produced the best results: education and community college as subjects with scholarship or merit or finance or aid as keywords. With these descriptors in place, I added remedial or development, graduation, grade point average, or school size as keywords to further refine the search. In addition, the proper name of each scholarship program mentioned above, used as a keyword, produced the best results.

The ERIC, *Chronicle of Higher Education*, and ProQuest searches produced the majority of the results found. The WorldCat Dissertations search also produced several relevant dissertations.

The process described above was very useful in locating the literature for this review. As a result, the focus of this chapter will shift to an important component of this study, the community college student. Because the A+ Program is specifically directed toward students enrolled in community colleges, sharing a brief comparison of these students with those students enrolled in four-year universities is important to this study.

The Community College Student

Still relevant today are two words used to describe community college students: “number and variety” (Cohen & Brawer, 2003, p. 29). Enrollments have increased from one-half million in 1960 to the latest figure for the year 2002-03 of a little over 5.6 million students enrolled in community colleges (*Chronicle*, 2003). In

contrast, The National Center for Education Statistics (NCES) (2003) reports the enrollment in all four-year institutions for 2002-03 to be slightly over 9 million students.

Community colleges enroll a much more heterogeneous student body than four-year colleges, consisting of traditional age students, older students, recently graduated students, returning students, female students, part-time enrolled students, employed full-time students, and minority students (NCES, 2003). *The Chronicle of Higher Education Almanac* (2003) indicates that community college students are 34.4% minorities, 57.4% women, and 43.5% part-time. The average age of students in community colleges also has some variety with almost one-half of the full-time students between the ages of 18 and 19, and over 50% of the part-time students are over 30 (*Chronicle*, 2003). While the class rosters at four-year colleges and universities may consist of the same types of students (traditional age, older students, returning students, part-time, employed, and so forth), the nature of these student groups is different. The National Center for Education Statistics (2003) indicates that, of all of the students enrolled in four-year colleges and universities, 32.2% are minorities, 56.3% are women, and 41% are enrolled part-time. The four-year school's average age is very different from the community college students with over 57% of the students between the ages of 18 and 23 (NCES, 2003).

Another indication of the dissimilar nature of two- and four-year students is that many students attend community colleges as their one and only chance at higher education, a promotion, a new life, and/or a new job (Morrissey, 1991). Cohen and Brawer (2003) state: "For most students in two-year institutions, the choice is not

between the community college and a senior residential institution, it is between the community college or nothing” (p. 48).

Community college students are diverse and have their own unique place among higher education, and with the A+ funding restricted to community colleges, it is important to understand these students. Therefore, a look at the history of merit-based scholarships is necessary.

History of Merit-Based Scholarships

Many authors have written about the evolution of merit-based scholarships (AACRAO/ACT, 1986; Brademas, 1983; Butler & Little, 1988; Creech & Davis, 1999; Criswell, 1998; Davis, 1995; Fequay, 1995; Huff, 1975; Jacobs, 1992; Kanarek, 1986; Kruger, 1992; Linsley, 1997; McPherson & Schapiro, 1998; Packwood, 1977; Porter & McColloch, 1983; Schuh, 2000; Wick, 1997; Wick, 1993; Wilcox, 1991, and Zelenak & Cockriel, 1986). The following is a synopsis of the history of merit-based scholarships as chronicled by these authors.

Wick (1993) stated, “Since the beginning of the academy, scholarships have been used to attract students known or perceived to be needy and deserving” (p. 2). The first institutional scholarship fund in America was established in 1643 by a gift to Harvard College from Lady Ann Radcliff Mowson who endowed the monies to help a poor but scholarly student (Criswell, 1998). Harvard College continued this practice of giving monies to these scholarly students through the 1700s. Not to be outdone by Harvard, Princeton University awarded its first scholarship in 1759 and continued this practice through the rest of the decade (McPherson & Schapiro, 1998). By the early 1800s, scholarship funds were being distributed to “indigent young men of merit” in

many of the colleges and universities across the United States (Criswell, 1998, p. 12). These early college-funded scholarships were awarded to students who had demonstrated their academic merit but could not afford to go to college. These scholarships continued to be awarded until the Civil War.

After the Civil War, state legislators began to enhance scholarship opportunities at state colleges, and benefactors started to endow scholarships at private colleges (Wick, 1993). These new scholarships were based on merit rather than need.

Merit-based scholarships continued to flourish through the 19th and into the early 20th century with institutions offering promising high school students monies to reward their accomplishments (Fequay, 1995). This process continued until the 1940s.

A major shift occurred following World War II, when the federal government enacted the Serviceman's Readjustment Act, commonly referred to as the GI Bill, which provided college funding for men and women having served in the armed forces (Creech & Davis, 1999). This program allocated federal funds to provide maximum opportunity to attend college for those who otherwise would be unable to afford it. This funding shift continued with the advent of the first Higher Education Act (1965) and the civil rights movement (1955-65) (Kruger, 1992). The federal financial aid programs created in the 1960s and 1970s emphasized financial need and ability to pay as primary eligibility criteria, which led to a decline in the use of merit-based scholarships.

In the late 1970s, institutional, no-need, merit-based scholarship programs began to reappear (Wick, 1993). The reappearance of merit scholarships did not

signal the end of access-oriented programs but did represent a philosophical shift for higher education. An example of this shift was highlighted in a study conducted by Huff (1975) who surveyed a sample of public and private institutions across the United States (no number given) and found that 54% used merit scholarships. Most of these were awarded in private colleges with 65% reporting some type of merit scholarship program. This percentage compared with only 15% and 12% respectively for medium and large public institutions.

Attempts to recruit academically talented students increased significantly during the 1980s as merit scholarships again became prominent (Jacobs, 1992). An indication of the extent of this importance was the “1986 Survey of Undergraduate Admissions Policies, Practices and Procedures” (AACRAO/ACT, 1986), which showed a significant increase in the use of merit scholarship programs. This survey (the latest conducted by AACRAO on this topic according to its research department and publications website) examined the use of merit scholarships in 1979 compared with 1986. In 1979, 51% of the responding institutions reported using merit scholarships, compared with 66% reporting use of merit scholarships in 1986. Wilcox (1991) summarized the importance of merit-based aid when he stated: “Financial aid (merit-based scholarships) is now also widely recognized for its strategic value in attracting the number, quality, and mix of students desired by an institution” (p. 48).

By the 1990s, the focus of student financial aid shifted as financial aid programs evolved from a single purpose of helping a few worthy students into a multifaceted set of purposes of enhancing access, choice, and retention; helping students overcome barriers, both financial and geographic, and rewarding talented

students. While trying to meet these goals, these same financial aid programs were also trying to encourage students to achieve excellence and to encourage them to pursue careers that were considered valuable to society and to economic development (Davis, 1995).

These shifts in goals led states to consider a new type of scholarship that would encourage academically talented students to attend a state institution. In 1993, Georgia created the HOPE Scholarship program which differed from other merit-based scholarships in that it was available to all Georgia high school students, and recipients did not have to be the top students in their classes; they needed only to achieve a “B” average (Creech & Davis, 1999). That same year, the State of Missouri created the A+ Program (reviewed in detail later in this chapter), which modeled itself after the HOPE Scholarship in some respects, but differed in several others (Missouri Department of Elementary and Secondary Education, 2002).

States funding these scholarships appeared to be meeting with success in encouraging many of their top high school students to attend college in their home states (Creech & Davis, 1999). Encouraging news, such as keeping a state’s brightest students at home and the popularity of the Georgia HOPE Scholarship program, prompted many other states to establish similar programs. Between 1997 and 1998, Florida, Kentucky, Louisiana, Maryland, and South Carolina passed legislation for HOPE-type programs (Creech & Davis, 1999).

The history of merit-based scholarships has shown that while this type of financial assistance has been around for many years, its prominence has both elevated and declined. With the emergence of new programs such as the HOPE Scholarship,

merit-based aid has shifted back into the spotlight and questions are being asked regarding the success of these students. The next section will present an overview of the literature regarding how merit-based scholarship recipients perform compared to other students. As mentioned before, the research included will be limited to studies focused on community colleges.

Success Factors

One purpose of this study was to determine if students receiving assistance through the A+ Program exhibited higher academic performance than a comparison group of non-A+ students. Academic performance was measured by college cumulative GPA, graduation rates, and number of remedial courses taken. This section will review studies related to these performance measures.

College Cumulative Grade Point Average

Snyder & Klein (1969) studied 108 scholarship students and 85 non-scholarship students who were enrolled full-time at Harrisburg Area Community College during the 1967-68 academic year. The purpose of their study was to determine if financial aid had been helpful in promoting college attendance, educational achievement, and personal development. They found that scholarship recipients earned statistically significantly higher grades than did the non-scholarship students. However, the authors indicated that while they did find significant differences in academic performance, their sample size was small.

A follow-up study was conducted by John Lucas (1988) at William Rainey Harper College to assess the experiences of 172 students who received a Trustee Scholarship award between 1974 and 1985. The purpose of the study was to

determine the impact this award had on the lives of the students receiving the scholarship in areas such as educational status, educational goals, employment status, salary, and perceptions of their experience while enrolled at the college. There were no statistical tests conducted on their GPAs; however, Lucas mentioned that these scholarship recipients appeared to be performing as well as other students.

Morrissey (1991), in his dissertation at the University of Iowa, studied 449 students who entered Indian Hills Community College between 1986 and 1988. The purpose of his study was to develop an awareness of the relationship between foundation scholarship funds provided and performance as measured by grade point average. One of the issues he examined was whether or not academic scholarship recipients who were high school valedictorians or salutatorians, academic scholarship recipients who were not high school valedictorians or salutatorians, and non-scholarship recipients had significantly different GPAs. He found a significant statistical difference between the college GPA achieved by students with academic scholarships when compared to the non-scholarship students. Morrissey concluded that basing the awarding of merit-based scholarships on high school honors was a sound practice and should be continued.

In this review of community colleges, scholarship students performed better academically than non-scholarship students when cumulative GPAs were studied. Based upon these findings, this study should find A+ students performing at least as well as, if not better than, non-scholarship students. This next section will review literature on the effect receiving a merit-based scholarship has on graduation rates.

Graduation Rates

While there is a significant body of research available regarding the relationship between federal financial aid and year-to-year persistence, there has not been much research published on graduation rates of scholarship students, especially community college students (Woodward, 1988). In their study cited earlier, Snyder & Klein (1969) found the rate of graduation was higher for scholarship recipients than for the non-recipients. The scholarship students graduated 45 out of the 106 enrolled, or 43%, compared to 18 out of 85 non-recipients, or 21%. Again, the authors cited the small sample sizes as a potential issue and warned against drawing too many conclusions from their research until more comprehensive studies could be conducted.

Alexander Astin (1975), with data from the Cooperative Institutional Research Program (CIRP), sponsored jointly by the American Council on Education and the University of California, Los Angeles, collected follow-up data in 1972 from 41,356 students who started college in 1968 to determine if the use of financial aid enhanced student persistence. Analyses were designed to determine if the type and amount of aid and the conditions of its administration had any effect on the students' chances of completing college. One section of this study considered all forms of scholarships and grants and whether recipients benefited from these funds. Astin found that freshmen recipients of merit-based scholarships had a 10% lower dropout rate than non-recipients. While his study did not specifically consider graduation rates nor specifically community college students, Astin's research was considered a landmark study regarding financial aid and persistence (Criswell, 1998).

Criswell (1998), in his dissertation at Baylor University on no-need, merit-based scholarship students, studied 486 scholarship students and 502 non-scholarship students enrolled at a mid-sized community college between 1989 and 1995. The purpose of his study was to determine whether two-year, no-need, merit scholarships awarded to traditional-aged, full-time, college students had an effect on student persistence. While the main focus of this study revolved around persistence, retention, and the factors surrounding these issues, Criswell also looked at graduation rates. He found that students who were awarded these scholarships were more likely to continue their education and pursue their degrees, thus graduating sooner than those who were not awarded merit scholarships. The graduation rate of scholarship recipients, though not statistically significant, was 5.4% higher than the non-scholarship recipients.

In summary, the research regarding graduation rates indicated that scholarship recipients graduated at higher rates than non-scholarship recipients. Based upon these findings, this study should find that A+ students graduate at higher rates than non-scholarship students. The next section will review the literature regarding whether receiving a scholarship has any effect on the number of remedial courses taken.

Remedial Courses Taken

I began the research on this topic and located no article, published research, or dissertation comparing the number of remedial courses taken by scholarship recipients to that of non-scholarship recipients enrolled in community colleges. I consulted with Elizabeth McKee, reference librarian at Mullins Library, and together we searched several databases including ProQuest Digital Dissertations, WorldCat Dissertations, and ERIC using such descriptors such as community colleges, merit scholarships, and

remedial instruction with no results found. This points to a need for research in this area. There was, however, one published article regarding remedial education and community college students.

The Illinois Community College Board (1998) conducted a study in the fall 1990 semester of 85,371 first-time students who entered an Illinois community college. The purpose of its study was to determine the educational outcomes for those students enrolled in remedial courses compared to students not enrolled in remedial courses and to give some indication of the effectiveness of remedial instruction. It studied 22,650 students enrolled in at least one remedial course compared to 62,721 students who did not enroll in a remedial course. The Board found no significant difference in the cumulative GPA for remedial students of 2.42 compared to the non-remedial students' GPA of 2.84. They concluded that students who enrolled in remedial courses compared favorably to students who did not require remediation and that these courses appeared to have a positive effect on educational outcomes.

Student Characteristics

A secondary purpose of the study was to determine if students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. The next three sections will examine the literature regarding these three student characteristics.

Gender

As in remediation, I could locate no article, published research, or dissertation comparing the academic performance based on gender of scholarship recipients to that of non-scholarship recipients enrolled in community colleges. I consulted with Elizabeth McKee, reference librarian at Mullins Library, and together we searched several databases including ProQuest Digital Dissertations, WorldCat Dissertations, and ERIC using such descriptors as community colleges, merit scholarships, and gender with no results. This lack points to a need for research in this area. There were, however, several studies conducted regarding community college students in general and their performance based on gender.

A San Jose City College study by Reyes (1979) employed gender as a predictor of postsecondary academic success. The purpose of his study was to determine the relationship between academic success using selected student characteristics, such as gender, among 300 students enrolled from 1972 to 1974. Findings indicated the mean GPA of females was statistically higher than the mean GPA of males.

In a dissertation study conducted at Boston College, Warner (1983) collected self-reported information regarding several selected characteristics of first-time students enrolled at Bristol Community College. The purpose of his study was to determine the relationship between these characteristics and persistence, as measured by the cumulative number of course credits earned, over a two-year period. He studied 812 students enrolled during the fall 1980 semester through the spring 1982 semester. He found that females showed higher rates of successful persistence and

lower rates of dropping out than males, and these same females persisted to graduation at higher rates than males.

Daus (1985) conducted a study of 11,858 students enrolled in courses at Charles Stewart Mott Community College in the fall 1984 semester for the purpose of investigating selected factors, such as gender, that influenced academic success. She found a significant relationship between gender and GPA with females' GPAs being higher. She concluded that many of the females in the study were heads of single-parent families who sought to improve their socioeconomic status and thus were more motivated than males.

Not all research supports females performing better academically. Jones (1979) studied 106 students enrolled at eight different Virginia community colleges in the fall 1978 semester for the purpose of determining the optimum combination of selected social, academic, and demographic variables to differentiate inclusion in the successful, unsuccessful, and withdrawal groups of first-year computer programming majors. He concluded that the demographic variables (sex, marital status, race, and age) did not appear to discriminate among the three groups of programming students studied.

Morrison (1980), in his dissertation at Illinois State University, studied the relationship of selected cognitive and noncognitive variables to academic performance. One aspect of his study was to determine the relationship between first-semester college GPA and several personal variables including gender. He examined 546 first-time students enrolled at Lincoln Land Community College during the 1977-

78 and 1978-79 academic years and found no significant difference in the college GPA based on gender.

Frerichs and Eldersveld (1981) published a study to identify variables which could be used to discriminate between successful and unsuccessful students in developmental mathematics courses at eight Illinois community colleges. The group studied consisted of 513 total students: 236 females and 277 males. They found that gender was not a significant factor to postsecondary academic success. Their study did not list any statistics and the authors offered no conclusions regarding their findings.

The research conducted at community colleges indicates mixed findings as to whether or not there is a difference in academic performance regarding gender. It is worth noting, however, that when a statistical difference was found, females typically performed better. The review of literature will now shift to the second student characteristic, size of school.

Size of High School

As in the searches on remediation and gender, I could locate no article, published research, or dissertation comparing the academic performance based on size of high school of scholarship recipients to that of non-scholarship recipients enrolled in community colleges. I consulted with Elizabeth McKee, reference librarian at Mullins Library, and together we searched several databases including ProQuest Digital Dissertations, WorldCat Dissertations, and ERIC using such descriptors such as community colleges, merit scholarships, and school size with no results found.

There were, however, a few studies conducted regarding the academic performance of students based on size of high school.

The research regarding the academic performance of students in college based on the size of high school in which they graduate is mixed. Some studies indicated that larger districts, with more money, had students who performed better academically than other students (Herzog & Pittman, 1995; and Galbraith, 1992); however, several studies indicated that size of high school made no difference (Yan, 2002; and Barker, Muse, & Smith, 1984).

One study examined the relationship between community college students' academic performance and size of high school. In his dissertation, Morrison (1980) examined the relationship between first semester college GPA and several personal variables including size of graduating high school class. He studied 546 first-time students enrolled at Lincoln Land Community College (Illinois) during the 1977-78 and 1978-79 academic years and found no significant difference in the college GPA based on size of high school. Morrison offered no conclusions regarding this finding. The review of literature will now shift to the third student characteristic, degree sought.

Degree Sought

Once again, as in the searches on remediation, gender, and size of school, I could locate no article, published research, or dissertation comparing the academic performance, based on degree sought, of scholarship recipients to that of non-scholarship recipients enrolled in community colleges. I consulted with Elizabeth McKee, reference librarian at Mullins Library, and together we searched several

databases including ProQuest Digital Dissertations, WorldCat Dissertations, and ERIC using descriptors such as community colleges, merit scholarships, and degree requirements. This lack signifies a need for research in this area. There were, however, several studies conducted regarding community college students in general and their performance based on degree sought.

The Virginia State System of Community Colleges reviewed graduation rates of full-time degree students enrolled for the first time in the fall 1981 through fall 1986 semesters (Puyear, 1990). It found that more occupational students were likely to graduate than their counterpart transfer degree students; however, they concluded that the lower graduation rate for transfer students was likely because many of these students saw the baccalaureate degree, rather than the associate degree, as their goal and designed their programs for maximum transferability.

Koefoed (1984), in a study utilizing selection of a college major to predict program completion, reported that career program students were ten times more likely to graduate than liberal arts students. In his study, he examined 100 randomly selected students enrolled at Kirkwood Community College during the fall 1974 through fall 1980 semesters. The author pointed out that there was no way to determine how many of the Liberal Arts majors transferred before graduating and had actually finished a degree at a four-year institution; therefore, he concluded that follow-up studies need to be conducted for students who transfer before completing a degree.

In a dissertation study at the University of Kentucky, Boles (1980) analyzed the relationships between community college and university students seeking both occupational associate degrees and baccalaureate degrees. He studied a sample of

students enrolled at Eastern Kentucky University, Western Kentucky University, Murray State University, Somerset Community College, Paducah Community College, and Elizabethtown Community College. The results showed that occupational associate degree students possessed significantly higher cumulative GPAs than baccalaureate degree students. He concluded that this study disproves the opinion that occupational associate degree programs are for students who cannot handle the baccalaureate degree curriculum.

Not all of the research indicated a significant difference in the academic performance of students seeking different degrees. Daus (1985), as cited earlier, examined the success factors and GPAs of 11,858 students enrolled during the fall 1984 semester at Charles Stewart Mott Community College. Part of her study considered the type of degree program students were enrolled in. She found that the type of degree program was not significantly related to academic success based on GPA and that it had no significant effect on GPA. Daus concluded that enrollment in vocational or non-vocational education at C. S. Mott Community College did not significantly affect the GPA.

In Morrison's (1980) earlier mentioned study of 546 first-time students enrolled at Lincoln Land Community College, the GPA of community college students enrolled in Associate of Arts, Associate in Applied Science (vocational), and Associate in General Education (non-transfer) degree programs was analyzed. He found that a low relationship existed between the GPA and the degree program studied, as well as GPA and major enrolled, thus indicating that academic achievement was approximately equal in all three degree programs.

Reyes (1979) in his study of 300 students enrolled from 1972 to 1974 at San Jose City College found that, in general, transfer students achieved a higher but not a significant statistically advantageous GPA over vocational-technical students. He concluded that type of degree sought was not a significant factor in determining any difference in student success.

While there was no literature found regarding community college scholarship students specifically, the review revealed no clear indication regarding academic performance based on degree sought. The review of literature to this point has examined the many factors surrounding the success of scholarship recipients and certain subgroups of students. The focus of the literature review now turns to state scholarship programs similar to the A+ Program.

State Scholarship Programs

Georgia HOPE Scholarship

As stated earlier, by the 1990s, the types of scholarships being provided were changing when states, led by Georgia, began to offer new merit-based scholarships (Davis, 1995). Georgia created the HOPE Scholarship program in 1993 as the first of an onset of these new scholarships (Wright, 2001 and Creech & Davis, 1999). Georgia's scholarship allowed students to receive funding by earning a "B" average in high school and maintaining a "B" average in college (Creech, 1998). The program was not based on financial situation or ability to pay college costs (Creech, 1998). If students earned a 3.0 GPA in high school for college preparatory courses, a 3.2 GPA for other curricula and maintained a 3.0 GPA in college, they received up to \$3,000 for tuition, fees, and books to be used at any public or private college or university in

the state of Georgia (Creech, 1998). Understandably, as one of the oldest and most well-known programs in the country, the HOPE Scholarship has been the subject of considerable research. Five representative studies or articles on the benefits of the program and five representative studies or articles on the negative aspects of the program are summarized below.

Benefits of HOPE Scholarship

The Council for School Performance found HOPE students had slightly higher college grade averages and significantly more college credits than non-Hope students across Georgia (Towns, 1997). In a similar study, HOPE scholarship students had higher GPAs after they enrolled in college than their peers who had not received scholarships (Strosnider, 1997). According to Gary T. Henry, director of the Applied Research Center at Georgia State, “HOPE really is providing students with hope and convincing them that they are ‘college material’” (Strosnider, 1997, p. A35).

Creech (1998) found that more high school students were earning “B” averages and receiving HOPE Scholarships and that SAT scores across the state had increased. Compared with students of similar backgrounds who entered college in 1994, HOPE Scholars had (a) earned more credits in the first two years of college, (b) slightly higher grade point averages after two years of college, and (c) been less likely to drop out of college (Creech, 1998). Even those who lost their scholarships were staying in college at higher-than-expected rates.

The HOPE Scholarship program also has increased the enrollment rates for Georgia’s African American population (Wright, 2001). He found the number of African American students enrolled in Georgia’s public four-year schools jumped

24% from 1993 to 1998, and enrollment at private four-year colleges rose by 12%. Wright (2001) indicated that the increase was “largely attributable to the 7-year-old program, which is the nation’s largest state-financed, merit-based aid program” (p. 12).

Cornwell, Mustard, & Sridhar (2003) reported that the HOPE Scholarship program had enticed more top-notch students to attend in-state colleges and universities. In 1994, 76% of Georgia high school students with combined SAT scores greater than 1500 attended college in the state compared to just 23% in 1992. They also found, however, that this scholarship program had almost no measurable effect on enrollment at the state’s two-year colleges. While there have been many bright spots as a result of the Georgia HOPE program, not all of the outcomes have been successful.

Negative Aspects of HOPE Scholarship

In 1994, the first-year students could use their HOPE Scholarship monies, the University of Georgia predicted that approximately one-half of the students on HOPE would lose their eligibility for the second year due to not maintaining a “B” average (Zapler, 1994). Professors at the University of Georgia were concerned that the HOPE Scholarship program was going to produce grade grubbing and grade inflation (Healy, 1997). Doris Kadish, chairwoman of the Romance-languages department stated, “A concern about HOPE is that students may be less interested in learning than in what they can do to get a good grade” (Healy, 1997, p. A32). In 1997-98, only one in three freshmen that qualified for Georgia’s HOPE Scholarship remained eligible for the award as sophomores (Selingo & Schmidt, 1999).

During the fall 2000 semester, as the state was celebrating its 50,000th recipient of the HOPE Scholarship, legislators were concerned with the latest information on the state's largest merit-based scholarship (Selingo, 2001). For the academic year of 1999-00, nearly 6 out of 10 HOPE recipients in college failed to maintain a "B" average, and 10% of the students were enrolled in remedial courses (Selingo, 2001).

Recently, Georgia lawmakers had to make some changes to save this popular program from a projected \$434 million deficit (Selingo, 2004). With lottery revenues flat and public colleges in Georgia raising prices more than state officials ever expected, the program's financial health had declined. As a consequence, the following changes were made to the program. Authorities decided to: (a) replace the B-average with a required 3.0 GPA by 2007, (b) freeze payments for student fees other than tuition at the 2003-04 level, (c) cut in half the \$300 allowance for books, if lottery revenues declined after one year, and (d) eliminate the book allowance entirely if lottery revenues fall for two consecutive years (Selingo, 2004). These changes have caused controversy, however, as some legislators tout the changes as a way to save the program, while others indicate that they are now requiring students to work harder for less reward.

With the popularity of the Georgia HOPE Scholarship program, many states have enacted their own HOPE-type program (Creech, 1998). Many of these programs have only recently been established, and therefore, research is lacking regarding these programs. Based on the availability of information and time of enactment, this review will examine five other states and their programs initiated between 1996 and 1998.

Florida Bright Futures

In 1997, the state legislature in Florida created the Florida Bright Futures Scholarship Program (Florida Department of Education, 2003), which is funded through the state lottery and has three different levels of scholarship (Creech, 1998). The first level is called the Academic Scholarship. For students to qualify, they must maintain a 3.5 GPA in college preparatory courses in high school, perform 75 hours of community service, and obtain a best composite score of 1270 on the SAT or a composite score of 28 on the ACT. Upon graduation, students qualify for full tuition, fees, and a book allowance at any Florida public institution or a fixed amount of tuition and fees at any Florida private institution. There is no minimum requirement for enrollment status (full or part-time); however, the scholarship may only be retained for four years from the date of high school graduation. The students must maintain a 3.0 GPA to retain the scholarship (Creech, 1998).

The second level is called the Merit Scholarship. For students to qualify, they must maintain a 3.0 GPA in college preparatory courses in high school and receive a best composite score of 970 on the SAT or a composite score of 20 on the ACT. Upon graduation, students receive a scholarship that pays for 75% of tuition and fees at any public institution or a fixed rate at any private institution. Students must maintain a 2.75 GPA to retain the scholarship for the maximum of four years, and there is no enrollment requirement (Creech, 1998).

The third level is called the Gold Seal Vocational Scholarship. Students must maintain a 3.0 GPA overall, a 3.5 GPA in vocational courses, and minimum scores of 440 on both the verbal and math sections of the SAT or minimum scores of 17 on the

English, 18 on Reading, and 19 on Math sections of the ACT. Upon graduation, students qualify for 75% of tuition and fees at any public institution or a fixed rate at any private institution. Students must maintain a 2.75 GPA to retain the scholarship for the maximum of four years, and there is no enrollment requirement (Creech, 1998).

With this program being relatively new, limited published research on this scholarship exists. In 1997-98, the first year of the program, Bright Futures provided \$71 million for 41,000 grants to the state's universities and community colleges (Pommereau, 1998). While this program had been very popular with many Florida families and lawmakers, many legislators are concerned that the state is giving away too much money (Pommereau, 1998). Furthering this debate on the program's worthiness, nearly 10% of freshmen who attended Florida's public universities and community colleges in 1997-98 on the Bright Futures Scholarships had to take remedial courses in reading, English, or mathematics (Selingo, March 1999).

Kentucky Educational Excellence Scholarships

In 1998, Kentucky established the Kentucky Educational Excellence Scholarships funded through the state lottery (Kentucky pays students, 1999). Eligibility is based on student performance in each year of high school and the amount of the award that can be used for tuition, fees, and/or books varies based on the cumulative high school GPA (Creech, 1998). If students maintain a 4.0 GPA, they qualify for \$2,500 per year at the college or university they attend. A GPA from 3.99 to 2.50 results in a prorated amount based on a sliding scale with the lowest amount worth \$725 per year (Creech, 1998). Students can also qualify for additional bonuses

based on a sliding scale using their ACT composite score (Kentucky pays students, 1999).

At the time of this research, there was no published data available on the effectiveness or outcome of this program. In order to determine if any data were available, the Kentucky Higher Education Assistance Authority (KHEAA) was contacted. M. E. Letteer (personal communication, March 30, 2004), economist with KHEAA, responded and indicated that the program was too new and very little information on the college performance of these scholarship students was available. He indicated, however, that 31,118 high school students received Kentucky Educational Excellence Scholarships after graduating high school in the 2001-02 school year. Out of this group of students, 25% lost their scholarships after their freshmen year, and an additional 12% were placed on probation and could lose their scholarships within the next year.

Louisiana Tuition Opportunity Program for Students

The Louisiana Tuition Opportunity Program for Students, established in 1997, provides three different post-secondary scholarship opportunities, depending on high school record and performance on the ACT exam (Creech, 1998). The first scholarship is called the Opportunity Award, and for students to qualify, they must earn a 2.5 GPA in high school and score at or above the state average on the ACT exam. This award is worth full tuition at any public college or university. Once awarded, students must maintain a 2.3 GPA in the first year and a 2.5 GPA thereafter in college to retain the award (Creech, 1998).

The second award is called the Performance Award, and for students to qualify, they must graduate in the top five percent of their high school class, obtain a minimum 3.5 GPA, and score a minimum composite of 23 on the ACT. This award is worth full tuition at any public college plus \$400, and once awarded, students must maintain a 3.0 GPA in college to retain the award (Creech, 1998).

The third scholarship is called the Honors Award, and for students to qualify, they must graduate in the top five percent of their high school class, obtain a minimum 3.5 GPA, and score a minimum composite of 27 on the ACT. This award is worth full tuition at any public college plus \$800 and can be renewed by maintaining a 3.0 GPA in college (Creech, 1998).

To date, no significant research exists on this program; however, what little information is available indicates the program is in trouble. After the first year of operation, the Louisiana program operated at a \$26 million deficit (Selingo, April 1999). After some changes in funding to the state budget in the beginning of the 2002-03 school year, lawmakers still needed \$7 million to fully fund this very popular program (Shoichet, 2002). Another concern that had been raised is that after the first year of awards in 1997-98, 23% of students on the scholarship were not eligible for their second year (Students lose scholarships, 1999). In addition, one intent of this program is to increase enrollment in technical programs within the state; however, since the program began in 1998, only 91 students pursuing technical degrees have qualified for a scholarship (Dyer, 2001).

Maryland Science and Technology Scholarship Program

Maryland established the Science and Technology Scholarship in 1998. This program was designed to encourage qualifying students to pursue degrees and careers in engineering or computer science by awarding them scholarships (Schmidt, 1999). To qualify, students must obtain a minimum 3.0 GPA in high school and pursue one of the designated degree programs at any Maryland college or university (Creech, 1998). The award amount is \$3,000 for students enrolled at a four-year institution and \$1,000 for students enrolled at any two-year college with the money being used for tuition and mandatory fees (Maryland Higher Education Commission, 2003).

The State of Maryland and the Maryland Higher Education Commission Office of Student Financial Assistance indicated that no available research exists regarding the performance of students who had received this scholarship; moreover, some controversy surrounds this program (personal communication, October 23, 2003). The scholarship requires students to maintain a "B" average while in college and obtain work within the state of Maryland in their degree field within one year after graduation. The scholarship also requires at least one year of service in the state for every year students receive the scholarship. If students fail to meet either one of these criterion, the scholarship reverts to a loan and must be repaid (Schmidt, 1999). This requirement within the scholarship has the potential to leave many students in debt, and legislators are planning a revision of this program (Schmidt, 1999). Also, as of the date of this research, with the controversy surrounding this program and the budgetary crisis in the state, the Maryland Higher Education Commission had stopped

taking applications for the 2004-05 school year (Maryland Higher Education Commission, 2003).

South Carolina Palmetto Scholars and Legislative Incentives for Future Excellence

The South Carolina Commission on Higher Education established the Palmetto Scholars program in 1996 and the Legislative Incentives for Future Excellence program in 1998 (Creech, 1998). The Palmetto Scholars program requires students to graduate in the top five percent of their high school class, obtain a 3.5 GPA, and receive a combined SAT score of 1200 or ACT equivalent (South Carolina Commission on Higher Education, 2003). These awards are valued at \$5,000 per academic year and can be maintained with a 3.0 GPA in college (Creech, 1998). The Legislative Incentives for Future Excellence program requires students to obtain a 3.0 GPA in high school and receive a combined SAT score of 1000 or ACT equivalent. The awards are valued at \$2,000 per academic year at four-year colleges and \$1,000 at two-year colleges and may be maintained by receiving a minimum 3.0 GPA and completion of 30 credit hours each academic year (Creech, 1998). The review of literature revealed no available research on the success of either of these programs. The Higher Education Department for the State of South Carolina was contacted and they indicated that the state had not conducted any specific studies related to these programs (personal communication, October 23, 2003).

This literature review indicates that Georgia's HOPE Scholarship Program is having many positive results for the state and students it serves; however, the results available for the other state programs are not as promising with their futures very much in question. The focus of this review will now shift to the Missouri A+

Program. This section will examine the formulation of this program, the legislative process taken to enact the program, and the current status of the program.

History and Current Status of the Missouri A+ Program

In 1991, Lieutenant Governor Mel Carnahan (1989-1993) made education one of the main platforms for his bid for the governor's office. Carnahan stated that "The decisions Missourians make on education will shape the future of our state more powerfully than any other choices we face" (World class schools for Missouri, 1992, p. 1). Beginning in the fall of 1991 and continuing into 1992, Carnahan held meetings across the state with small groups of parents, teachers, students, principals, community leaders, and business people to discuss the problems facing Missouri's schools (World class schools for Missouri, 1992). From these meetings, Carnahan identified the following nine signs of inadequacy that he felt must be addressed by Missouri schools:

1. In 1990, Missouri ranked 39th in the high number of pupils per teacher in elementary and secondary schools, depriving students of the time and attention they need.
2. Almost two of every three Missouri high schools did not teach calculus, blocking the fast track to high tech careers for many students.
3. In 1990, Missouri ranked 42nd in per capita spending for schools, depriving students of badly needed education resources.
4. Fifteen percent of high schools taught no foreign languages, making a mockery of Missouri's ambitions to be world-competitive.
5. In 1990, Missouri ranked 41st in the percentage of education spending borne by the state.

6. More than one of every four young people in Missouri dropped out of school before graduation.
7. One in three of all Missouri students who graduate from high school needed remedial work when they went to college.
8. Almost one in eight adult Missourians were illiterate – that is, they could not read at the fifth grade level.
9. Too many Missouri children started school unprepared to learn (McCampbell, Worts, & Barnes, 1999).

After the meetings, Lt. Governor Carnahan outlined the following six principles to guide the restructuring of education in Missouri (World class schools for Missouri, 1992): (a) commit ourselves to fundamental change, (b) decentralize authority and let schools and teachers make key education decisions, (c) set high expectations and resist the pressure to reduce them, (d) hold each school accountable for the performance of its students, (e) overhaul and toughen curriculum and reemphasize the basics, and (f) prepare every high school graduate for post-education or a good job.

To achieve these educational goals and principles, the “Carnahan Plan” for education introduced fifteen specific initiatives to build world-class schools in Missouri (McCampbell, 1998). Carnahan worked in close conjunction with the Democratic National Committee (DNC) and its public relations firms hired to polish the proposal. At the heart of the “Carnahan Plan” was the first initiative, the A+ Schools Program (World class schools for Missouri, 1992), with the term “A+,” coined by DNC employee Mac McCorkle (McCampbell, Worts, & Barnes, 1999).

This program was the capstone to Lt. Governor Carnahan's educational reform movement. To indicate the critical importance of this program and how strongly he felt about the concepts of A+, Gubernatorial Candidate Mel Carnahan stated:

One of the most important education imperatives facing the state of Missouri is to reach out to youngsters who are not headed to college and keep them from dropping out of high school. About half of our high school graduates do not go on to college and one in four students entering high school never graduate. We must provide them with an exciting and rigorous program of academic and technical education that leads to community college or workplace skill development. The A+ Schools Program is designed to accomplish that imperative. The A+ Schools Program will mobilize an intensive partnership among high schools, community colleges, students, teachers, parents, labor, businesses, and communities to give these students the motivation, skills, and knowledge to graduate from high school. It will create an innovative and well-designed path from high school to high skill, high wage jobs. (World class schools for Missouri, 1992, p. 6).

The A+ Outline

Lt. Governor Carnahan developed 10 initial aspects that comprised his vision for his program (World class schools for Missouri, 1992). First, there must be an A+ school fund. He asked the General Assembly to create a new fund of up to \$10 million a year. Second, the A+ Program had to have specific objectives, which called for the high schools to identify students in danger of dropping out and to offer counseling, remedial reading, tutoring, and other services as needed. Also, those

students identified as not going to a four-year college must be provided with a curricular pathway toward technical training. Third, the Program must have specific goals. Each school that wished to participate in the A+ Program must agree to pursue these three goals: (a) every A+ student should graduate from high school, (b) every A+ student should receive a high performance education, with rigorous courses regardless of college or vocational track, and (c) every A+ graduate should go into a community or technical college or a high wage job. Fourth, each A+ school had to form a partnership with local businesses, vocational-technical schools, community colleges, and parents. Fifth, schools had to make several commitments to participate. The school provided space for an A+ Coordinator position and, most importantly, the faculty revamped the curriculum to meet the A+ goals. This new curriculum eliminated the general education track and added new rigorous courses, such as algebra and advanced English, to the vocational track. State assistance was the sixth specific aspect of the A+ Program. The state of Missouri had to help fund this critical initiative. Seventh, the local school had to make additional commitments by paying at least one-half the salary of the A+ Coordinator position on their campus. Eighth, the performance of the A+ Schools Program had to be evaluated and, when merited, given additional support. Ninth, schools had to provide some incentive for the students who graduated from an A+ high school. Those students who met all of the requirements set forth in this program would receive full tuition, books, and common fees at any community college or vocational school in the state of Missouri. And tenth, students had to show commitment: (a) graduating with a cumulative 2.5 GPA or higher; (b) avoiding drugs, suspension from school, and trouble with the law; (c) attending 95%

of their classes; (d) stopping work in outside jobs by 11:00 p.m. on school nights, and (e) performing 50 hours of free tutoring, remedial reading assistance, or mentoring.

As Carnahan promoted his plan throughout the state, one clear thought was on his mind:

We should expect high performance from every student. All high school paths in Missouri should lead away from dropping out, welfare, and low wage jobs -- and toward skills, success, and prosperity. The A+ Schools Program will equip students to meet our high expectations -- and theirs (World class schools for Missouri, 1992, p. 8).

Toward the Governor's Office and Education Reform

In November 1992, Mel Carnahan became the elected Governor of Missouri (McC Campbell, Worts, & Barnes, 1999). By December 1992, Governor Carnahan had formed the first "stakeholders" dialogue on education to develop an educational legislative package that would include the A+ Schools Program (McC Campbell, 1998). Among those involved were the Governor, leaders within the House and Senate, and Presidents and Chancellors of several major educational institutions, and several prominent business leaders from across the state. This group had several meetings and, by the end of December 1992, had put together a report on their findings (Hirner, 1992). The advisory group's role was to assist Governor Carnahan and his administration in implementing the program for "world class" schools for Missouri (Hirner, 1992).

This advisory group advanced seven proposals, three dealing with higher education, education funding, and educating the whole child (Hirner, 1992). These

three proposals were the heart of the Carnahan Plan and spelled out his goals for the A+ Schools Program. The advisory group set forth specific vision statements and action steps within each statement. Within one of these vision statements and following action steps, the A+ Schools Program was introduced. The vision statement declared:

By 1997, the education of every child and youth in Missouri will be directed by effective teachers; planning will maximize use of public funds; access to higher education will be available to Missouri's students; and Missouri's colleges and universities will be excellent research institutions (Hirner, 1992, p. 30).

The ninth action step following this vision statement indicated that community colleges would provide the following: (a) access to higher education, (b) general studies courses for students wishing to pursue advanced (beyond the associate) degrees, and (c) advanced technical and vocational training (Hirner, 1992). The action step specifically stated, "Qualified high school graduates will be reimbursed the cost of tuition, books, and fees by the State" (Hirner, 1992, p. 30).

Beginning in January 1993, leadership in the General Assembly devoted most of its attention in the following two months to designing a new school finance (funding) formula (McCampbell, Worts, & Barnes, 1999). While ensuring passage of the A+ Schools Program as a high priority, Governor Carnahan was also adamant about the complete overhaul of Missouri public school funding procedures (World class schools for Missouri, 1992). Two points are noteworthy. First, no major research project had been conducted on the benefits, negative aspects, and costs to the

A+ Schools Program prior to the bill being introduced in both the House and Senate (McC Campbell, 1998). Second, the Democratic Party controlled the Missouri legislature with its newly elected Democratic Governor and Democratically controlled House and Senate (McC Campbell, Worts, & Barnes, 1999). Moreover, the chairs of the House and Senate Education Committees, both Democrats, were senior members of both sides of the aisle. In essence, the Democrats virtually guaranteed themselves passage of this bill.

In April 1993, Senate Education Chair Harold Caskey, House Education Chair Annette Morgan, and Governor Carnahan, with the assistance of the Department of Elementary and Secondary Education (DESE), hammered out the Education Reform Package to be joined with the new School Finance Formula (the A+ Schools Program was included in the school reform measures) (McC Campbell, Worts, & Barnes, 1999). This legislative package was titled Senate Bill 380 – Education Finance and Reforms and subsequently sent to a committee of the same title (Education Finance and Reforms Committee, 1993). This Committee voted 14 to 11 in favor to pass the legislation, sending it to both the Senate and the House (Education Finance and Reforms Committee, 1993).

Testifying for the bill were Senator Caskey, Missouri State Board of Education, Missouri School Boards Association, Missouri Council of School Administrators, Missouri State Teachers Association, Cooperating School Districts of Kansas City, Missouri National Education Association, Missouri Association of Secondary School Principals, Cooperating School Districts of St. Louis, Office of the Governor, and one Missouri resident and taxpayer (Education Finance and Reforms

Committee, 1993). Testifying against the bill were Representative Kelley, Associated Industries of Missouri, Tax Payer Research Institute of Missouri, Missouri Retailers Association, Region Commerce and Growth Association, Missouri State Chamber of Commerce, Missouri Bankers Association, Rockwood School District, Parkway School District, CAUSE, and 15 Missouri residents and taxpayers (Education Finance and Reforms Committee, 1993). Much of the discussion regarding this bill did not center on the A+ Schools Program rather; most of the attention was focused on the public school funding formula and the fact that this bill was a tax increase.

Thursday, May 13, 1993, the Senate voted 19 to 14 to pass Senate Bill 380 (Education Finance and Reforms Committee, 1993) and on Friday, May 14, 1993, the House voted 90 to 71 to pass the bill (Education Finance and Reforms Committee, 1993). Governor Carnahan subsequently signed Senate Bill 380 into law on August 28, 1993 (McCampbell, Worts, & Barnes, 1999).

Senate Bill 380 specifically stated the Education Finance and Reforms Act would be called the Outstanding Schools Act and included provisions that related to reduced class size, the A+ schools program, funding for parents as teachers and early childhood development, teacher training, the upgrading of vocational and technical education, measures to promote accountability, and other provisions of those sections (Outstanding Schools Act, 1993). Section 14 of the Outstanding Schools Act (1993) stated:

There is hereby established within the department of elementary and secondary education the “A+ Schools Program” to be administered by the commissioner of education. The program shall consist of grant awards made to public

secondary schools that demonstrate a commitment to ensure that: (a) all students be graduated from school, (b) all students complete a selection of high school studies that is challenging and for which there are identified learning expectations, and (c) all students proceed from high school graduation to a college or postsecondary vocational or technical school or high wage job with work place skill development opportunities (p. 92).

The A+ Schools Program was then codified into law under the Missouri Revised Statutes, Chapter 160, Schools – General Provisions, Section 160.545 (RSMo, 1993).

DESE Sets Rules and Begins Implementation

With the adoption of Administrative Rule 5 CSR 60-120.060, the State Board of Education began the implementation of the A+ Schools Program in November 1993. Legislation has subsequently amended and changed the rule to 5 CSR 50-350.040 (5 CSR 50, 2000). Title 5 is the designation for the Missouri Department of Elementary and Secondary Education; Division 50 is for the Division of Instruction, and Chapter 350 is for State Programs. The .040 designation is for the A+ Schools Program specifically (5 CSR 50, 2000). This rule laid out the requirements for high schools wanting to participate and for the community and vocational/technical schools having A+ students attending their institutions.

This law described 12 program requirements that the high school must follow in order to receive A+ designation by the state of Missouri. The requirements were as follows (5 CSR 50, 2000):

1. Establish measurable district-wide performance standards for the three A+ Schools goals.

2. Specify knowledge, skills, and competencies in measurable terms for all high school courses leading to graduation.
3. Eliminate the general track of courses that, upon completion, leads to a high school diploma.
4. Establish student performance standards for graduation that meet or exceed the Show-Me Standards adopted by the State Board of Education.
5. Require rigorous coursework in academic subjects for all vocational students.
6. Detail procedures to identify potential dropouts and offer intervention services.
7. Outline counseling/mentoring services for students going to work after graduation.
8. Address apprenticeships and internship programs.
9. Identify procedures for recruiting community volunteers to serve in the school.
10. Develop an A+ Schools Partnership Plan with cooperation from local business, labor, parents, colleges, and vocational schools. The plan must be approved by the local board of education and contain a means to annually receive information updates of the plan from the original planning group, senior citizens, community leaders, and teachers.
11. Have an A+ Schools Coordinator (50% of salary matched at the local level).
12. Have the ability to submit a three-year grant proposal and potentially receive up to \$150,000 for each year of the grant.

The high school must have ensured also that there were procedures in place to determine that each student had met the following requirements before designating the student as A+. The procedures were as follows (5 CSR 50, 2000):

1. The student had attended a designated A+ School for three consecutive years prior to high school graduation.
2. The student had graduated with an overall grade point average of 2.50 or higher on a 4.0 scale.
3. The student had achieved at least a 95% attendance record overall for grades nine through twelve.
4. The student had performed 50 hours of unpaid tutoring or mentoring for younger students.
5. The student had maintained a record of good citizenship and the avoidance of the unlawful use of drugs and/or alcohol.

In the last section of the rule, DESE outlined the procedures community colleges or vocational schools were to follow in verifying the eligibility of each A+ student attending their institution. The procedures were as follows (5 CSR 50, 2000):

1. During the first semester of the student's participation, the school must:
 - a. Verify receipt of proof of student eligibility from the high school of matriculation;
 - b. Verify that the eligible student was enrolled as a full-time student;
 - c. Ensure a good faith effort had been made to secure federal postsecondary student financial assistance funds, and
 - d. Bill the State of Missouri only the amount of funds necessary to cover the remaining costs of tuition, books, and common fees to attend after applying any secured federal financial assistance.

2. During the second and subsequent semesters of the student's participation, the school must:
 - a. Verify the eligible student had successfully completed a full-time course load the previous semester and continued to be enrolled as a full-time student;
 - b. Ensure a good faith effort had been made to secure federal postsecondary student financial assistance funds;
 - c. Verify the student had earned and maintained a grade point average of 2.50 or higher on a 4.0 scale, and
 - d. Bill the State of Missouri only the amount of funds necessary to cover the remaining costs of tuition, books, and common fees to attend after applying any secured federal financial assistance.

In 1993, DESE published a *Guidelines and Procedures Manual* for community colleges and vocational schools and subsequently updated it in June 2001 (Missouri Department of Elementary and Secondary Education, 2001). This manual outlined the specific requirements listed above but also gave the institutions guidance on several issues such as reinstatement of eligibility, transfer students, high school dual credit, concurrent enrollment, developmental/remedial courses, and students with disabilities. The manual outlined some definitions and gave guidance as to what constituted a good faith effort on the part of the student to obtain federal financial assistance. DESE also gave details on how the colleges and vocational schools were to bill the state and what forms were to be used. Included in the appendix to the manual were examples and forms.

To help promote the program around the state, the Missouri Community College Association published a small booklet titled *CASH in on Your Commitment To Learning and Your School's Academic Excellence with the A+ Schools Program* (Missouri Community College Association, 2001). This booklet highlighted the unique attributes of the A+ program, what it provided to the student, how the community colleges fit in, and how the high school could get involved.

A+ Designated High Schools

In the 1994-95 school year, the initial year for grant applications to be made, 78 grant proposals were submitted to DESE (McC Campbell, Worts, & Barnes, 1999). Out of these 78 proposals, DESE approved 38 high schools to receive their initial start up grants of \$150,000. In the 1995-96 school year, DESE received 50 new grant proposals and approved 19 new high schools (McC Campbell, Worts, & Barnes, 1999). In the 1996-97 school year, DESE received 64 grant proposals and approved 30 new high schools (McC Campbell, Worts, & Barnes, 1999). In the 1997-98 school year, DESE received 72 grant proposals and approved 36 new high schools. During the 1997-98 school year, the initial 38 schools designated as A+ Schools began sending students to community colleges (McC Campbell, Worts, & Barnes, 1999).

These numbers have continued to grow. By the end of the last completed academic year of 2002-03, 200 designated high schools existed, with over 6,500 students participating, and the annual appropriations for the A+ program topping \$17 million (Missouri, 2002).

A+ Follow-Up

In 1999, after several years of funding the A+ Schools Program, the Speaker of the House appointed an interim committee to evaluate its effectiveness and to develop recommendations for any needed modifications or enhancements. The Speaker of the House appointed Representatives Ted Farnen, Glenda Kelly, Mark Abel, Marsha Campbell, Jim Graham, Charles Shields, and Mary Lou Sallee to the House Interim Committee on the A+ Schools Program (Cheshier, 1999)

The Committee held two public hearings in Jefferson City, on November 29, 1999, and on December 14, 1999 (Cheshier, 1999). The Committee heard testimony from a wide constituency, including officials from the Missouri Department of Elementary and Secondary Education, the Missouri Department of Higher Education, high school A+ coordinators, high school counselors, principals, school superintendents, and students; community college faculty, and the Missouri Community College Association (Cheshier, 1999). In preparation for these hearings, the Committee asked the Coordinating Board for Higher Education to prepare a report on some relevant statistics. Dr. Terry Barnes, then the Assistant Commissioner of Community Colleges and Technical Education, prepared *Results of A+ Eligible High School Graduates Attending Missouri Public Two- and Four-Year Colleges/Universities* (Barnes, 1999).

Dr. Barnes reported the following compiled list of findings to the Committee (Barnes, 1999):

Drop-out rates. Dr. Barnes compared the annual percentage of A+ students dropping out of high school to annual statewide averages for 1994-98. The average

statewide rate varied from 7.10% in 1994 to 5.29% in 1998. The A+ drop-out rates ranged from .17% to 3.29% over this same period.

Attendance rates. High school attendance rates are calculated in terms of the average percentage of school days students attend. The average statewide rate ranged from 90.45% in 1994 to 90.93% in 1998. The average daily attendance rates for A+ students were consistently higher, ranging from 91.08% to more than 93% over those same years.

High school graduation rates. Statewide, the average percentage of students graduating from high school varied from 75.3% in 1994 to 77.37% in 1998. The average graduation rates for A+ students over this same time period was 77.1% to 82.88%, some 1.8% to 5.51% higher.

Academic preparedness. The Committee considered the percentage of high school students scoring above the national ACT average as one measure of academic preparedness. Over the 1994-97 period, 34.29% was the highest percentage of students for all high schools in the state scoring above the national ACT average. Data for students attending A+ designated high schools, only available for 1997, showed 38.55% of these high school students scored above the national ACT average.

College GPA. Data revealed the cumulative GPA scores after one semester of post-secondary attendance for the A+ students who graduated from high school in 1997 was 2.71.

College graduation. Data for college graduation were available only for the cohort of students who graduated from high school in 1997. By the end of their second year of attendance at community colleges across the state, 29% of the 1997 A+

cohort who initially enrolled in a two-year program had received a certificate or associate's degree, and 22.6% of this cohort had enrolled for a third year.

College remedial courses needed. The average percentage of students needing some form of remedial coursework in college ranged from a low of 27% to a high of 32% for A+ students graduating high school in 1997 through 1999.

Based on all of the information and testimony presented, the Committee deemed the A+ Schools Program “a highly successful program, meeting its key objective of graduating students from high schools with the skills needed for success in an institution of post-secondary education” (Cheshier, 1999, p. 11). The Committee made two recommendations regarding the A+ Schools Program. First, the legislature should allocate additional funds for the program, so that more students and more school districts in the state would be able to participate in this program. Second, since funding for those currently participating could be adversely affected, the A+ Schools Program should not be expanded to include four-year institutions (Cheshier, 1999).

Changes To The Program

In February 2003, the State Board of Education, in response to the state budget crisis, proposed the elimination of textbooks reimbursement under the A+ Schools Program (State board of education, 2003). During the summer of 2003, the State Board of Education voted to adopt this policy change and, effective for the fall 2003 semester, A+ eligible students were no longer reimbursed for the costs of their required textbooks.

Summary

This chapter began by stating the purposes of the study and a statement indicating absence of any research regarding the A+ Program. The literature review was then expanded to merit-based scholarships. A review described the process used for gathering literature, including a note delimiting the review to only studies regarding community colleges. Included is the description of the community college student. The first section concluded with a brief overview of the history of merit-based scholarships.

The second section examined the literature regarding the success factors being studied: college cumulative grade point average, graduation rates, and number of remedial courses taken. The literature regarding cumulative GPAs indicated merit-based scholarship students have higher GPAs. The literature on graduation rates also showed merit-based scholarship students had higher graduation rates in comparing scholarship and non-scholarship students enrolled at community colleges. No reported research existed regarding the number of remedial courses taken.

The third section reviewed literature pertaining to student characteristics associated with the second research question regarding whether or not students receiving assistance through the A+ Program (categorized by gender, school size, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. The review of literature found no specific studies regarding community college scholarship recipients and differences reported based on these subgroups. The general research of community colleges found some mixed results regarding gender, although many of the

studies did find that females performed better than males overall. Size of high school showed no clear indication of whether or not this factor affected students' performance. The literature regarding degree sought again showed mixed results on academic performance.

The fourth section of this review explored other state programs similar to the A+ Schools Program. This section detailed the different criteria for each of the state programs and the similarities and differences they each shared. Also revealed was any research regarding the success of these students. With the exception of the Georgia HOPE Scholarship, the data were very scarce.

The fifth section looked specifically at Missouri's A+ Schools Program. Since this program was fairly new and readers may not have an awareness of the A+ Program, a very detailed history was given. This section chronicled the initial thoughts on the A+ Program by then Lt. Governor Mel Carnahan, through the legislative process of getting this bill passed, through the writing of the legislative rule, and finally to the current status of the program. The limited amount of data regarding this program, especially the success of these students at the community colleges in Missouri, was also described.

Although limited, some research regarding the A+ Schools Program and its effect at the high school level was promising. In fact, the Director of the Missouri Department of Elementary and Secondary Education (2002) stated how successful he felt this program had become:

Missouri's A+ Schools Program is a win-win situation for schools, students, and communities. The program encourages students to stay in school, make

career plans, tutor younger students in school, and graduate with the skills and knowledge required for career success or further education (p. 1).

The state of Missouri has dubbed the A+ Schools Program a success; however, what research has taken place to back up these statements? The negligible research that exists regarding many of the state scholarship programs and specifically regarding the success of A+ students at community colleges in the state of Missouri formed the background and context for the design of this investigation.

CHAPTER THREE
METHODOLOGY AND PROCEDURES

Introduction

As stated earlier, the primary purpose of this study was to determine if students receiving assistance through the A+ Program exhibited higher academic performance at OTC than two comparison groups of non-A+ students with similar background characteristics. Academic performance was measured by college cumulative GPA, number of remedial courses taken, and graduation rates. A secondary purpose was to determine if students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. The population studied was all full-time students enrolled at Ozarks Technical Community College between the fall 2000 semester and the spring 2003 semester who had a minimum 2.50 cumulative high school GPA.

This section describes the methodology and general procedures used in the study. Included are details concerning the setting of the study, the selection of a research design, the identification of the target population, the selection of a sample, the procedures for data collection, and the methods of data analysis.

Setting for the Study

Ozarks Technical Community College (OTC) is a comprehensive community college located in Springfield, Missouri. Springfield, Missouri, is the third largest metropolitan city in the state and is home to five other public and private colleges and universities.

OTC was established in April 1990, when residents of Springfield and 13 surrounding public school districts voted to establish a community technical college (Ozarks Catalog, 2003). In September 1991, OTC officially opened its doors with 1,198 college credit students (Ozarks Catalog, 2003). At first, OTC offered a one-year Certificate and a two-year Associate of Applied Science degree in 16 different technical program areas. The college did offer several general education courses that supplemented the technical degree programs, but it was 1994 before OTC offered an Associate of Arts degree designed specifically to transfer to another college or university (Ozarks Catalog, 2003).

Initially, college facilities consisted of rented space in the abandoned wing of a local hospital and two buildings that formally housed the area vocational/technical center. These two buildings, now renovated, have become the cornerstone of an OTC campus that now consists of five buildings. Grants and a contribution from John Q. Hammons also made beautification of the campus possible with construction of a pedestrian mall between buildings and a waterfall on campus.

In 1996, OTC received initial accreditation from the Higher Learning Commission of the North Central Association of Colleges and Schools (Ozarks Catalog, 2003). In February 2001, OTC was given a ten-year re-accreditation from the North Central Association.

Enrollment has continued to grow at a rate of 10-20% each year (Ozarks Enrollment Report, 2004). The enrollment for the fall 2003 semester reached just over 8,500 college credit students (Ozarks Enrollment Report, 2004). In addition to its college credit component, OTC provides several other educational options: first, high

school juniors and seniors can participate in half-day job skill programs through OTC's area vocational/technical school; second, specific training can be custom designed for business and industry at the work site; third, non-credit personal and professional enrichment courses have been made available; and fourth, adult education and literacy is available to adults working toward the General Education Diploma (GED).

OTC's comprehensive mission and focus on job-skill training and college transfer preparation have made it a vital part of one of the fastest growing areas in the state of Missouri. At the time of the study, OTC had expanded to three extension sites in southwest Missouri; and had purchased 78 acres of land in Christian County in anticipation of building a south campus in the future.

Research Design

To accomplish the purposes and to answer the research questions of this study, an ex post facto research design was proposed and accepted by the dissertation committee. An ex post facto study is a non-experimental analysis used to conduct a systematic inquiry in which the researcher does not have control over the independent variables and cannot show causality (Sprinthall, 2003). This type of study was used because the research attempted to determine whether students receiving assistance through the A+ Program exhibited higher academic performance than two comparison groups of non-A+ students and did not try to explain why. Also, the independent variables were not manipulated.

To test the significance of differences among means, a 3 x 2 x 2 x 3 analysis of variance (ANOVA) was performed. College GPA, number of remedial courses taken,

and graduation rate were identified as the dependent variables. The independent variables were identified as scholarship type (A+ students, non-A+ scholarship students, non-A+ non-scholarship students), gender (male and female), size of high school (small, medium, and large), and degree sought (AA and AAS). These independent variables created the four factorial design. When significant findings were indicated and when appropriate, a Scheffe's post hoc analysis was also conducted. This study was conducted at a particular community college in southwest Missouri.

Identification of the Target Population

The population being used for this study was all students enrolled full-time at OTC from the fall 2000 to the spring 2003 semesters who had a minimum of a 2.50 high school GPA. There were 3,007 students identified meeting these criteria. This population was further divided into three target populations used in the study. The first target population consisted of all A+ students enrolled at Ozarks Technical Community College (OTC) from the fall 2000 through spring 2003 semesters meeting the criteria listed above. There were 1,859 students in this group. The second target population consisted of students enrolled full-time who received an OTC internal scholarship but who did not receive any A+ funding; there were 165 students in this group. The third target population consisted of students enrolled full-time receiving neither an internal scholarship nor A+ funding; there were 982 students in this group.

Selection of a Sample

Since the total number in the target population of non-A+ scholarship students was small, this entire group of students was selected. The mean high school GPA,

proportion of gender, and proportion of school sizes were determined for this group (see Table 1). To choose the sample for the other two groups, a stratified sampling of the population was conducted (Creswell, 2002). To ensure a similar high school GPA, proportion of gender, and proportion of students from different size of high schools (as found in the non-A+ scholarship group), I stratified each of the other two samples based on these three variables. The size of the high school was determined by the total number of students enrolled in grades 9-12 according to the 2001 Missouri High School Directory. The table in Appendix A shows the breakdown of the A+ high schools in the state of Missouri, starting with the largest enrollment and proceeding to the smallest. This table also lists the county in which the high school is located, and whether or not there had been previous students enrolled from that high school at OTC. For purposes of this study, the following size categories were used: small, 500 or less; medium, 501 to 999; and large, 1,000 or more.

Based on the above stated criteria, there were 1,006 total students randomly selected for the three samples used in the study. This number was broken down as follows: (a) 372 A+ students, (b) 165 non-A+ scholarship students, and (c) 469 non-A+ non-scholarship students. These numbers are shown in Table 1.

Prior to main analyses, all variables of interest were examined through SPSS 12.0 program for accuracy of data entry, missing values, the normality of distributions, and outliers. The majority of the data were correctly entered; however, there were a few cases of missing data. Because these few cases occurred in the large data sets of the A+ and non-A+ non-scholarship populations, these participants were deleted. The

values for skewness and kurtosis fit into an appropriate range, indicating a normal distribution; and no cases were found to have outliers.

Table 1

Number of Subjects in each Target Sample

| | A+ | Scholarship | Non-Scholarship |
|----------------|-----------|-------------|-----------------|
| N | 1859 | 165 | 982 |
| n | 372 | 165 | 469 |
| H.S. GPA | 3.36 | 3.40 | 3.37 |
| Gender | | | |
| Males | 168 = 45% | 61 = 37% | 168 = 35% |
| Females | 204 = 55% | 104 = 63% | 301 = 65% |
| Size of School | | | |
| Small | 183 = 50% | 97 = 58% | 263 = 56% |
| Medium | 70 = 18% | 25 = 15% | 88 = 19% |
| Large | 119 = 32% | 43 = 27% | 118 = 25% |

Once permission was secured from the President and Registrar of the college, data about the students were collected with the assistance of the Offices of Institutional Research and Computer Services at OTC. A+ students were defined as those students who had the A+ seal on their high school transcripts and had been so designated on the payment screen of their accounts. Non-A+ scholarship students were defined as those students who had been listed with the financial aid office as receiving an OTC scholarship and had been so designated on the payment screen of their accounts. The non-A+ non-scholarship students were defined as those students who had no designation of any type of scholarship or A+ on either their financial aid

award or their account with the college. Full-time was defined as having been enrolled in 12 or more credit hours in a fall and/or spring semester, and 6 or more credit hours in a summer term.

Students taking remedial courses were those students identified as having enrolled in at least one course numbered below 100 level. Remedial courses offered ranged from one hour, short-term courses to three-hour math, English, and reading courses. OTC requires all new students or transfer students with less than 20 credit hours to take a placement test or provide the college with ACT scores. The college uses ACT's ASSET and/or COMPASS tests for assessment purposes. Students are placed into courses in math, English, and reading based on their test scores. Low scores in math and English require students to take the appropriate remedial course; however, the reading course is optional.

Data for Collection Procedures

The data gathered for the students in each of the samples consisted of the following information: (a) name of high school, (b) high school GPA, (c) college GPA, (d) number of remedial courses taken, (e) gender, (f) hours enrolled in college, (g) whether they graduated or not, (h) degree sought, and (i) initial term of enrollment at OTC. These data elements were used in the statistical analyses.

Data Analysis for Procedures

The data were processed using SPSS 12.0 and descriptive statistics were generated for all variables. The following tables describe the types of variables used and the range of numbers expected to answer each research question.

The first research question asked whether A+ students exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. Three sub-questions were asked based on the following measurements: (a) college cumulative GPA, (b) number of remedial courses taken, and (c) graduation rate. Table 2 provides a visual display of the type of data required to answer this question.

Table 2

Description of the Data Needed for Research Question 1 – Did A+ Students Exhibit Higher Academic Performance at OTC than Two Other Comparison Groups of Non-A+ Students Based on Cumulative GPA, Number of Remedial Courses Taken, and Graduation Rate?

| Variable | A+ | Scholarship | Non-Scholarship | Difference |
|---------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|
| Mean Grade Point Average | Continuous variable, range 2.5 to 4.0 | Continuous variable, range 2.5 to 4.0 | Continuous variable, range 2.5 to 4.0 | Continuous variable, range 0 to 1.5 |
| Mean Number of Remedial Courses | Continuous variable, range 0 to 10 | Continuous variable, range 0 to 10 | Continuous variable, range 0 to 10 | Continuous variable, range 0 to 10 |
| Mean Graduation Rate | Continuous variable, range 0 to 100% | Continuous variable, range 0 to 100% | Continuous variable, range 0 to 100% | Continuous variable, range 0 to 100% |

The first sub-question sought to determine if there was a difference in cumulative GPA between A+ students, non-A+ non-scholarship students, and non-A+ scholarship students. These were ratio data and were tested as part of the four factor

ANOVA, with status (A+ vs. non-A+ scholarship vs. non-A+ non-scholarship) as the independent variable and GPA as the dependent variable.

The second sub-question sought to determine if there was a difference between these same three groups of students regarding the number of remedial courses taken. These were ratio data and were tested as part of the four factor ANOVA, with status (A+ vs. non-A+ scholarship vs. non-A+ non-scholarship) as the independent variable and number of remedial courses taken as the dependent variable.

The third sub-question sought to determine if there was a difference between A+ students, non-A+ non-scholarship students, and non-A+ scholarship students regarding their mean graduation rate. These were ratio data and the plan was to test these data as part of the four factor ANOVA, with status (A+ vs. non-A+ scholarship vs. non-A+ non-scholarship) as the independent variable and mean graduation rate as the dependent variable. As explained below, a problem with this data element was found after the samples had been selected.

The students in this study did not have the same start date. For example, a student may have been included that started in the last semester of the time span of the study (Spring 2003) and thus would not have had time to graduate. This student would have been classified as not having graduated which would lower the graduation rate. Consequently, it was decided to look at a cohort of students who all started in the fall 2000 semester and use these samples in the four factor ANOVA when testing the differences in the graduation rate. The samples became so small, however, that a four factor ANOVA was not possible. It was decided to then run a simple one-way ANOVA, testing only the difference between the scholarship types (A+, non-A+

scholarship, and non-A+ non-scholarship students) and the graduation rate.

Graduation rate as a dependent variable was therefore eliminated from the second research question.

The second research question examined whether students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. Tables 3 – 4 provide a visual display of the type of data required to answer this question.

Table 3

Description of the Data Needed for Research Question 2 – Regarding the Dependent Variable of College GPA based on Gender, Size of High School, and Degree Sought

| Variable | A+ | Scholarship | Non-Scholarship | Difference |
|-------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Gender | Continuous variable, range | Continuous variable, range | Continuous variable, range | Continuous variable, range |
| Male | 2.5 to 4.0 | 2.5 to 4.0 | 2.5 to 4.0 | 0 to 1.5 |
| Female | | | | |
| School Size | Continuous variable, range | Continuous variable, range | Continuous variable, range | Continuous variable, range |
| Small | 2.5 to 4.0 | 2.5 to 4.0 | 2.5 to 4.0 | 0 to 1.5 |
| Medium | | | | |
| Large | | | | |
| Degree | Continuous variable, range | Continuous variable, range | Continuous variable, range | Continuous variable, range |
| AA | 2.5 to 4.0 | 2.5 to 4.0 | 2.5 to 4.0 | 0 to 1.5 |
| AAS | | | | |

The first part of Research Question 2 examined whether there was a difference between gender, size of high school, and degree sought regarding their GPA. These were ratio data and were tested using the 3 x 2 x 2 x 3 ANOVA, with scholarship type,

gender, degree, and school size as the independent variables and GPA as the dependent variable (see Table 3).

Table 4

Description of the Data Needed for Research Question 2 – Regarding the Dependent Variable of Number of Remedial Courses Taken based on Gender, Size of High School, and Degree Sought

| Variable | A+ | Scholarship | Non-Scholarship | Difference |
|-------------|----------------------------|------------------------------------|------------------------------------|------------------------------------|
| Gender | Continuous variable, range | Continuous variable, range | Continuous variable, range | Continuous variable, range |
| Male | 0 to 10 | 0 to 10 | 0 to 10 | 0 to 10 |
| Female | | | | |
| School Size | Continuous variable, range | Continuous variable, range | Continuous variable, range | Continuous variable, range |
| Small | 0 to 10 | 0 to 10 | 0 to 10 | 0 to 10 |
| Medium | | | | |
| Large | | | | |
| Degree | Continuous variable, range | Continuous variable, range 0 to 10 | Continuous variable, range 0 to 10 | Continuous variable, range 0 to 10 |
| AA | 0 to 10 | | | |
| AAS | | | | |

The second part of Research Question 2 examined whether there was a difference between gender, size of high school, and degree sought regarding the number of remedial courses taken. These were ratio data and were tested using the 3 x 2 x 2 x 3 ANOVA, with scholarship type, gender, degree, and school size as the independent variables and number of remedial courses taken as the dependent variable (see Table 4).

Summary

This chapter has identified the methodology and general procedures used for this study. The setting of the study was discussed along with the selection of the appropriate research design. The procedures for collecting the sample, the identification of the target population, and the selection of the sample were also described. Finally, the methods used for data analysis were discussed and listed in tabular format to indicate specifically what variables were tested and what type of data would be listed once the tests were conducted. Chapter IV lists the actual results of the statistical tests.

CHAPTER FOUR

PRESENTATION OF DATA

Chapter IV contains the presentation of the study findings. Included in this chapter are sections describing the purposes of the study, the subjects in the study, and the presentation of the data. For each research question in the study, a table of means is provided followed by an ANOVA table.

Purposes of the Study

The study's first purpose was to determine if students receiving assistance through the A+ Program exhibited higher academic performance at OTC than two comparison groups of non-A+ students with similar background characteristics (similar high school GPAs and the same proportion of small, medium, and large high schools represented in each group). Academic performance was measured by college cumulative grade point average, number of remedial courses taken, and graduation rates. The second purpose of the study was to determine if students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics.

The first research question asked whether A+ students exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics when measured by the following standards: (a) cumulative grade point average, (b) number of remedial courses taken, and (c) graduation rate.

The second research question asked whether certain groups of students benefited more than others. Specifically, was there any difference in academic performance as measured by cumulative grade point average and number of remedial courses taken based on gender, size of high school, or degree sought. As mentioned in Chapter III, the graduation rate variable was eliminated from the second research question due to lack of numbers in the sample with the same start date, which would not allow the four factor ANOVA to be calculated.

To test these research questions, a 3 x 2 x 2 x 3 ANOVA was conducted. The confidence interval was set at 95%, meaning that a *p* value of 0.05 or less constituted a significant difference.

Subjects

As stated in Chapter III, all students enrolled full-time at OTC from the fall 2000 to the spring 2003 semesters were considered to be part of the study. This population was further divided into three target populations as follows: A+ students, non-A+ scholarship students, and non-A+ non-scholarship students (these numbers are listed in Table 1). The subjects were limited to students who were enrolled full-time and those who had a minimum high school GPA of 2.50. Students not meeting these two criteria were eliminated from the study. In order to ensure that each target population had a similar number of different sizes of high schools, each sample was stratified by high school size. The classification used for school size was as follows: 500 or less – small; 501 to 999 – medium; and 1,000 or more – large.

Presentation of the Data

The presentation of the data is divided into two sections: (a) test for Research Question 1, and (b) test for Research Question 2. For each of these statistical analyses, a brief description of the results precedes a tabular display of the results.

Research Question 1

Table 5 presents the mean GPA, the mean number of remedial courses taken, and the mean graduation rate for Research Question 1 and the three sub-questions. These questions sought to determine if there was a difference between A+ students, non-A+ scholarship students, and non-A+ non-scholarship students regarding their cumulative GPA, number of remedial courses taken, and graduation rates. Again, the numbers used for the graduation rate represent a cohort group of students with the same Fall 2000 start date.

Table 5

Mean Results for Research Question 1 - Did A+ Students Exhibit Higher Academic Performance at OTC than Two Other Comparison Groups of Non-A+ Students Based on Cumulative GPA, Number of Remedial Courses Taken, and Graduation Rate?

| Variable | A+ | Scholarship | Non-Scholarship | Difference |
|---------------------------------|------|-------------|-----------------|---------------|
| Mean Grade Point Average | 2.41 | 2.66 | 2.30 | -.25 to .11 |
| Mean Number of Remedial Courses | .876 | .794 | 1.12 | -.326 to .082 |

| | | | | |
|----------------------|-----|-----|-----|----------|
| Mean Graduation Rate | 27% | 26% | 16% | 1 to 11% |
|----------------------|-----|-----|-----|----------|

Table 6 reports the actual ANOVA statistical results for Research Question 1. There was a significant relationship between scholarship type and college GPA, $F(2, 269) = 4.099, p < .05$. Post hoc comparisons with Scheffe's statistic indicate that significant differences existed between the mean GPA of non-A+ scholarship students ($M GPA = 2.66$) and the mean GPA of non-A+ non-scholarship students ($M GPA = 2.30$) suggesting that non-A+ scholarship students demonstrated a significantly higher GPA when compared to non-A+ non-scholarship students. There was no significant difference found between the mean GPA of A+ ($M GPA = 2.41$) students and the mean GPA of non-A+ scholarship students ($M GPA = 2.66$).

There was a significant relationship between scholarship type and the number of remedial courses taken, $F(2, 162) = 4.261, p < .05$. Post hoc comparisons with Scheffe's statistic indicate that significant differences existed between the A+ students ($M = .876$), the non-A+ scholarship students ($M = .794$), and the non-A+ non-scholarship students ($M = 1.12$) suggesting non-A+ scholarship students took a significantly lower number of remedial courses than the A+ students who, in turn, took significantly less number of remedial courses than non-A+ non-scholarship students. Another finding of interest is the number of students in all three groups (all recent high school graduates) who took at least one remedial course. The percentage ranged from 53% for A+ students, 54% for non-A+ scholarship students, and 56% for non-A+ non-scholarship students.

There was no significant relationship between scholarship type and the graduation rate, $F(2, 159) = 1.240, p < .05$. With no significant difference found, post hoc comparisons were not conducted.

Table 6

Analysis of Variance for Mean College GPA, Number of Remedial Courses Taken, and Graduation Rate Between A+, Non-A+ Scholarship, and Non-A+ Non-Scholarship Students

| Source | df | F | p | Sum of Squares | Mean Squares |
|------------------|----|--------|------|----------------|--------------|
| Between Subjects | | | | | |
| GPA | 2 | 4.099* | .017 | 15.979 | 15.979 |
| Remediation | 2 | 4.261* | .014 | 3.019 | 3.019 |
| Graduation Rate | 2 | 1.240 | .292 | .430 | .215 |

* $p < .05$.

Research Question 2

The second research question examined whether students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two comparison groups of non-A+ students. Academic performance was measured by cumulative GPA and number of remedial courses taken. This section is divided into two sections, with Tables 7 – 8 examining data related to the GPA and Tables 9 – 10 examining the data related to the number of remedial courses taken.

One part of this research question sought to determine if there was a difference between the three scholarship type recipients (A+, non-A+ scholarship, and non-A+ non-scholarship) regarding their cumulative GPA based on gender, school size, and degree sought. Table 7 presents the mean GPAs for gender, school size, and degree sought. The pattern of the scholarship students' GPA higher than the A+ students, which was higher than the non-A+ non-scholarship students (see Table 5) holds true in all of these subgroups as well.

Table 7

Mean Results for GPA based on Gender, Size of High School, and Type of Degree Sought

| Variable | A+ | Scholarship | Non-Scholarship | Difference |
|--------------------|------|-------------|-----------------|-------------|
| Gender | | | | |
| Male | 2.23 | 2.48 | 2.18 | -.25 to .05 |
| Female | 2.67 | 2.84 | 2.42 | -.17 to .25 |
| School Size | | | | |
| Small | 2.45 | 2.60 | 2.25 | -.15 to .20 |
| Medium | 2.50 | 2.66 | 2.36 | -.16 to .14 |
| Large | 2.37 | 2.72 | 2.28 | -.35 to .09 |
| Degree | | | | |
| AA | 2.55 | 2.82 | 2.38 | -.27 to .17 |
| AAS | 2.30 | 2.45 | 2.25 | -.15 to .05 |

Table 8 reports the results from an ANOVA statistical test comparing the relationship between the cumulative college GPA and gender, size of high school, and degree sought. Main effects were identified with gender, $F(1, 1,003) = 12.179, p < .05$; degree sought, $F(1, 1,003) = 8.773, p < .05$; and with the interaction effect of

gender and degree, $F(3, 1,003) = 4.183, p < .05$. There were no post hoc comparisons calculated because both variables (gender and degree) had only two levels. The main effect of gender suggests that females had a significantly higher GPA than males regardless of the scholarship type. The main effect of degree sought suggests that AA students have a significantly higher GPA than AAS students regardless of the scholarship type. The interaction effect of gender and degree suggests that female students seeking an AA degree have a significantly higher GPA than any other combination of gender and degree sought.

While there was no main effect found for size of school, an interaction effect between size of school and degree was found, $F(4, 1,001) = 3.614, p < .05$. Post hoc comparisons with Scheffe's statistic indicate that significant differences existed between the students from a small school seeking an AA degree ($M GPA = 2.49$) versus an AAS degree ($M GPA = 2.31$); students from a medium school seeking an AA degree ($M GPA = 2.77$) versus an AAS degree ($M GPA = 2.12$); and students from a large school seeking an AA degree ($M GPA = 2.43$) versus an AAS degree ($M GPA = 2.39$). This suggests that regardless of size of school, students seeking an AA degree had a higher GPA than those seeking an AAS degree.

There were no interaction effects found between cumulative GPA and scholarship type and gender, size of school, or degree sought. This information suggests that there is no significant difference between the A+ students, non-A+ scholarship students, and non-A+ non-scholarship when students are categorized by gender, size of school, or degree sought on college GPA.

Table 8

Analysis of Variance for Mean College GPA based on Gender, Size of High School, and Degree Sought

| Source | df | F | p | Sum of Squares | Mean Squares |
|--|----|---------|------|----------------|--------------|
| Between Subjects | | | | | |
| Gender | 1 | 12.179* | .001 | 15.979 | 15.979 |
| School Size | 2 | .181 | .835 | .474 | .237 |
| Degree | 1 | 8.773* | .003 | 11.511 | 11.511 |
| Gender x Scholarship | 2 | .539 | .583 | 1.416 | .708 |
| Gender x School Size | 2 | .146 | .864 | .384 | .192 |
| Scholarship x School Size | 4 | .136 | .969 | .713 | .178 |
| Gender x Scholarship x School Size | 4 | .747 | .560 | 3.918 | .980 |
| Gender x Degree | 1 | 4.183* | .041 | 5.488 | 5.488 |
| Scholarship x Degree | 2 | .580 | .560 | 1.521 | .760 |
| Gender x Scholarship x Degree | 2 | 2.259 | .105 | 5.926 | 2.963 |
| School Size x Degree | 2 | 3.614* | .027 | 9.484 | 4.742 |

| | | | | | |
|--|---|------|------|-------|-------|
| Gender x School Size x Degree | 2 | .722 | .486 | 1.895 | .948 |
| Scholarship x School Size x Degree | 4 | .165 | .956 | .864 | .216 |
| Gender x Scholarship x School Size x Degree | 4 | .990 | .412 | 5.197 | 1.299 |

* $p < .05$.

The second part of this research question sought to determine if there was a difference between the three scholarship type recipients (A+, non-A+ scholarship, and non-A+ non-scholarship) regarding the number of remedial courses taken based on gender, school size, and degree sought. Table 9 presents the mean number of remedial courses taken for gender, school size, and degree sought.

Table 9

Mean Results for Number of Remedial Courses Taken based on Gender, Size of High School, and Degree Sought

| Variable | A+ | Scholarship | Non-Scholarship | Difference |
|--------------------|-----|-------------|-----------------|--------------|
| Gender | | | | |
| Male | .84 | .77 | 1.16 | -.32 to .07 |
| Female | .91 | .82 | 1.08 | -.17 to .09 |
| School Size | | | | |
| Small | .88 | .89 | 1.31 | -.01 to -.43 |
| Medium | .75 | .80 | .96 | -.05 to -.21 |
| Large | .99 | .69 | 1.09 | -.10 to .30 |
| Degree | | | | |
| AA | .95 | .69 | 1.20 | -.25 to .26 |
| AAS | .85 | .89 | 1.16 | -.04 to -.31 |

Table 10 reports the results from an ANOVA statistical test examining the relationship between the number of remedial courses taken and gender, size of high school, and degree sought. A main effect was identified between scholarship type (A+, non-A+ scholarship, and non-A+ non-scholarship) and the number of remedial courses taken. This was already covered in Tables 5 and 6 above. There was no significant difference found between the number of remedial courses taken and gender, size of school, or degree sought suggesting that scholarship type made no difference for these variables.

Table 10

Analysis of Variance for Mean Number of Remedial Courses Taken based on Gender, Size of High School, and Degree Sought

| Source | df | F | p | Sum of Squares | Mean Squares |
|--|----|-------|------|----------------|--------------|
| Between Subjects | | | | | |
| Gender | 1 | .02 | .888 | 3.019 | 3.019 |
| School Size | 2 | 1.227 | .294 | 3.76 | 1.88 |
| Degree | 1 | .147 | .701 | .226 | .226 |
| Gender x Scholarship | 2 | .370 | .691 | 1.135 | .568 |
| Gender x School Size | 2 | .380 | .684 | 1.164 | .582 |
| Scholarship x School Size | 4 | .798 | .526 | 4.894 | 1.223 |
| Gender x Scholarship x School Size | 4 | .479 | .751 | 2.937 | .734 |
| Gender x Degree | 1 | .323 | .570 | .495 | .495 |
| Scholarship x Degree | 2 | .994 | .371 | 3.047 | 1.523 |
| Gender x Scholarship x Degree | 2 | 1.707 | .182 | 5.234 | 2.617 |
| School Size x Degree | 2 | .081 | .922 | .248 | .124 |

| | | | | | |
|--|---|-------|------|--------|-------|
| Gender x School Size x Degree | 2 | 2.195 | .112 | 6.728 | 3.364 |
| Scholarship x School Size x Degree | 4 | .364 | .834 | 2.234 | .559 |
| Gender x Scholarship x School Size x Degree | 4 | 1.70 | .148 | 10.423 | 2.606 |

* $p < .05$.

Summary

Chapter IV reported the findings of the study, which included tables on the means and ANOVA results for each research question. The confidence interval was set at 95% and a 3 x 2 x 2 x 3 ANOVA was conducted to find any differences between the groups. Significant differences were found between A+, non-A+ scholarship, and non-A+ non-scholarship students regarding GPA and number of remedial courses taken. A significant difference was also found between cumulative GPA and gender and degree sought with an interaction effects between gender and degree and size of school and degree. There were no additional significant differences found regarding number of remedial courses taken. Chapter V contains analyses of this data in relation to the research questions.

CHAPTER FIVE
SUMMARY, FINDINGS, CONCLUSIONS, and
RECOMMENDATIONS

This chapter contains an overview of the study, a summary and analysis of the results related to the two research questions, and conclusions drawn from the analysis. In addition, recommendations for improved practice and recommendations for additional study are presented.

Overview of the Study

The Missouri Department of Economic Development (2003) lists higher education as an essential component of a healthy state economy, “a best fit, a sure thing” (p. 1). The United States Department of Labor (2004) also considers higher education of great value to individuals. Their studies have shown advanced degrees can more than double an individual’s income over someone with a high school diploma. With higher education playing such a valuable role in states’ and individuals’ economic benefit, it is troubling to find the cost of higher education skyrocketing.

Over the last ten years, there has been increased focus on this rising cost of higher education and the ability of many Americans to access higher education. For instance, President Clinton and Congress, in 1997, passed federal legislation to help ease the high cost burden of college, such as the HOPE Scholarship Tax Credit and the Lifetime Learning Tax Credit (Burd, 1997a; & Burd, 1997b). The federal government also established several income-tax breaks for students and families saving and paying for postsecondary education (Creech, 1998). More recently, President Bush has been

pushing his agenda on education with his No Child Left Behind program (Symonds, 2004).

Not to be outdone by the federal government, many states have established prepaid tuition and college savings plans (Creech, 1998). In addition to these programs, many states have felt it necessary to create financial aid programs to assist students to gain access to higher education.

In 1993, Georgia created the HOPE Scholarship Program (Healy, 1997) and Missouri created the A+ Schools Program (Missouri, 2002) to encourage students to take more challenging courses during high school and to better prepare them for higher education or the technical workforce. Since this time, many other states have created similar programs (Creech, 1998). Specifically, the A+ Schools Program was established to ensure a commitment to the following three objectives: (a) all students graduate from high school, (b) all students complete a selection of high school studies that are challenging and for which there are identified learning expectations, and (c) all students proceed from high school graduation to a college or postsecondary vocational or technical school or high wage job (Outstanding Schools Act, 1993).

Articles by Towns (1997) and Strosnider (1997) found that HOPE students had slightly higher college GPAs and significantly more college credits. Creech (1998) reported that students receiving HOPE scholarships increased their SAT scores. HOPE has also reportedly increased the enrollment rates for Georgia's African American population (Wright, 2001). Another important aspect of the HOPE program was to keep students in the state of Georgia. Cornwell, Mustard, & Sridhar (2003) found that the HOPE program did entice more top-notch students to stay in the state.

While many of the studies reported positive aspects of the HOPE program, not all of the results were favorable. Articles by Zapler (1994), Selingo & Schmidt (1999), and Selingo (2001) all reported that at least one-third, if not more, of the HOPE Scholarship students lost their eligibility after one year.

The Missouri A+ Program was initiated in the same year as the HOPE Scholarship Program, and fiscal year 2003, Missouri spent \$17.1 million dollars on this program. However, as of the time of this study, there had been no published research regarding the academic performance of these students.

The research conducted for this study had two purposes. The first purpose of this study was to determine if students receiving assistance through the A+ Program exhibited higher academic performance at OTC than two comparison groups of non-A+ students with similar background characteristics. Academic performance was measured by cumulative grade point average, number of remedial courses taken, and graduation rates. The second purpose of the study was to determine if students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics.

To address this investigation, two research questions were asked. The first question investigated whether students receiving assistance through the A+ Program exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. Specifically did A+ students have a higher GPA, take fewer remedial courses, and graduate at a higher rate? The second research question sought to determine if students receiving assistance through

the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics. Specifically, did males or females differ in achievement; did size of high school matter; or did students seeking an Associate of Arts or Associate of Applied Science degree differ in achievement?

An ex post facto study was selected as the investigation method. Due to the unavailability of data for a statewide sample, students were selected from Ozarks Technical Community College (OTC) for purposes of this study. The Offices of Institutional Research and Computer Services at OTC were enlisted to assist in gathering the data needed for this study. Student samples were determined based on two criteria: first, all students must have been enrolled full-time (12 or more credit hours); and second, all students must have graduated high school with a minimum 2.50 GPA. Also, in order to help control for possible effects of the size of high school, each sample of subjects had the same proportion of small, medium, and large size of high schools represented. This data can be found in Table 1.

Utilizing SPSS 12.0, a 3 x 2 x 2 x 3 ANOVA was employed to determine if there was any statistically significant difference in academic performance. College GPA, number of remedial courses taken, and graduation rate were identified as the dependent variables. The independent variables were identified as A+ students, non-A+ scholarship students, non-A+ non-scholarship students, gender, size of high school, and degree sought. The confidence interval was set at 95%. Tables were presented with both the mean results and the results of each ANOVA.

A problem discovered with the graduation rate variable required that it be excluded from the 3 x 2 x 2 x 3 ANOVA. The problem was that students in all samples did not have the same start date, thus precluding some students from actually graduating within the time span of the study. Thus, it was determined to choose a cohort of students who all started in the Fall 2000 semester and use these samples in the four factor ANOVA. When some of these samples became so small, a four factor ANOVA could not be calculated. At this time it was decided to run a one-way ANOVA, testing only the difference between scholarship type (A+, non-A+ scholarship, and non-A+ non-scholarship) and graduation rate. This variable (graduation rate) was eliminated from the second research question.

Findings

This section presents the findings of this study as they relate to the two research questions. Findings for each question are listed in separate sections.

Research Question 1

The first question asked the following: did students receiving assistance through the A+ Program exhibit higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics? Specifically did A+ students have a higher GPA, take fewer remedial courses, and graduate at a higher rate? In regard to the cumulative grade point average, there was a significant difference ($p = .017$) found between the three groups of students (Table 6). Post hoc comparisons with Scheffe's statistic indicated a significant difference between the non-A+ scholarship students (M GPA = 2.66) and non-A+ non-scholarship students (M GPA = 2.30) suggesting that non-A+ scholarship students

demonstrated a significantly higher GPA when compared to non-A+ non-scholarship students. There was no significant difference found between the A+ and non-A+ scholarship students. It is also worth noting that the A+ students' mean GPA ($M = 2.41$) was below the required 2.50 GPA needed by students to maintain their award.

In the second part of the first research question, the number of remedial courses taken by the three groups was examined. A significant difference ($p = .014$) was found among the three groups of students (Table 6). Post hoc comparisons with Scheffe's statistic indicated that significant differences existed between the A+ students ($M = .876$), the non-A+ scholarship students ($M = .794$), and the non-A+ non-scholarship students ($M = 1.12$) suggesting non-A+ scholarship students took a significantly lower number of remedial courses than the A+ students who took less remedial courses than non-A+ non-scholarship students. In addition to this finding, the high number of students who took at least one remedial course in these three groups was noted. The percentages were 53% for A+ students; 54% for non-A+ scholarship students, and 56% for non-A+ non-scholarship students. This high need for remediation among recent high school graduates is a major finding and warrants further consideration.

The third part of the first research question investigated the difference in graduation rates between the three groups of students. No significant differences ($p = .292$) were found (Table 6). The A+ students had a 27% graduation rate compared to 26% and 16% for the non-A+ scholarship students and the non-A+ non-scholarship students respectively (Table 5). While no significant difference was found, the A+

students did have the highest graduation rate. The small sample sizes used in this calculation may have obscured other findings.

Research Question 2

The second research question asked the following: did students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibit higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics? Specifically, did males or females differ in achievement; did size of high school matter; or did students seeking an Associate of Arts or Associate of Applied Science degree differ in achievement? As mentioned before, the graduation rate variable was eliminated from the second research question.

One part of this research question sought to determine if there was a difference between the three scholarship type recipients (A+, non-A+ scholarship, and non-A+ non-scholarship) regarding their cumulative GPA based on gender, school size, and degree sought. There was a main effect of gender ($p = .001$), a main effect of degree sought ($p = .003$), and an interaction effect between gender and degree ($p = .041$). The main effect of gender suggested that females had a significantly higher GPA (2.67 for A+, 2.84 for non-A+ scholarship, and 2.42 for non-A+ non-scholarship) than males (2.23 for A+, 2.48 for non-A+ scholarship, and 2.18 for non-A+ non-scholarship) regardless of the scholarship type. The main effect of degree sought suggested that AA students had a significantly higher GPA (2.55 for A+, 2.82 for non-A+ scholarship, and 2.38 for non-A+ non-scholarship) than AAS students (2.30 for A+, 2.45 for non-A+ scholarship, and 2.25 for non-A+ non-scholarship) regardless of

scholarship type. The interaction effect between gender and degree suggested that female students seeking an AA degree (M GPA = 2.61) had a significantly higher GPA than any other combination of gender and degree sought.

While there was no main effect found for size of school, there was an interaction effect between size of high school and degree ($p = .027$). This interaction effect suggested that significant differences existed between the students from a small school seeking an AA degree (M GPA = 2.49) versus an AAS degree (M GPA = 2.31); students from a medium school seeking an AA degree (M GPA = 2.77) versus an AAS degree (M GPA = 2.12); and students from a large school seeking an AA degree (M GPA = 2.43) versus an AAS degree (M GPA = 2.39). This suggested that regardless of size of school, students seeking an AA degree had a higher GPA than those seeking an AAS degree.

There was no interaction effect found between cumulative GPA and scholarship type and gender, size of school, or degree sought. This information suggested that there was no significant difference between the A+ students, non-A+ scholarship students, and non-A+ non-scholarship when students are categorized by gender, size of school, or degree sought and the college GPA they earned.

The second part of this research question sought to determine if there was a difference between the three scholarship type recipients (A+, non-A+ scholarship, and non-A+ non-scholarship) regarding the number of remedial courses taken based on gender, school size, and degree sought. There was no significant difference found on the number of remedial courses taken regarding gender, size of school, or degree sought indicating that scholarship type made no difference.

Conclusions

Based on the data presented in this study, several conclusions may be drawn. Since there were no previous studies about the A+ Program, it was difficult to assess the uniqueness of these findings.

1. A+ students performed very comparably to the non-A+ scholarship students on college GPA, and both of these groups had higher GPAs than the non-A+ non-scholarship students. The mean A+ GPA of 2.41, just below the cutoff of 2.50 to remain eligible, suggested many students are losing their A+ eligibility. While the literature provided some mixed results, the majority of the research indicated that scholarship recipients typically exhibited higher GPAs than other students (Lucas, 1988; Morrissey, 1991; and Snyder & Klein, 1969).

2. Scholarship type had a significant impact on the number of remedial courses taken with non-A+ scholarship students ($M = .794$) needing the fewest, followed by A+ students ($M = .876$) and non-A+ non-scholarship students ($M = 1.12$). The percentage of students who took at least one remedial course ranged from 53% to 56% across all three groups of students. Such a high number of recent high school graduates needing remediation represented a major finding and should be examined more closely to determine whether certain aspects of the A+ Program (currently, A+ funding is for six years) are contributing to this need for remediation. This could lead to some possible policy revisions regarding the A+ Program.

3. No significant relationships were found between scholarship type (A+, non-A+ scholarship, and non-A+ non-scholarship) and graduation rate. This may be an area of concern. This finding contradicts the majority of the literature, which

indicated that scholarship students typically graduate at higher rates (Astin, 1975; Criswell, 1998; Snyder & Klein, 1969; and Woodward, 1988). While there was no significant difference found, A+ students did have the highest graduation rate ($M = 27\%$).

4. Female students had significantly higher GPAs than their male counterparts regardless of scholarship type. The community college literature reviewed made no clear indication as to whether females or males would perform better.

5. Male A+ funded students had a mean GPA of 2.23, which falls below the 2.50 required to maintain A+ eligibility. This is a definite area for concern.

6. Students seeking AA degrees had a significantly higher GPA than students seeking an AAS degree regardless of scholarship type. This contradicts the literature regarding degree sought where most studies indicate that students seeking occupational degrees have higher GPAs or that there is no difference in academic performance based on degree sought (Reyes, 1979; Boles, 1980; Morrison, 1980; Koefoed, 1984; Daus, 1985; and Puyear, 1990).

7. Female students seeking an AA degree had a significantly higher GPA than any other combination of gender and degree type. There was no research found in the community college literature regarding this finding so it is impossible to state whether or not it was unique.

8. In all three school size categories (small, medium, and large), students seeking an AA degree had a higher GPA than those seeking an AAS degree. The literature regarding school size was mixed so it is difficult to determine the uniqueness of this finding.

9. A+ students from small schools had a mean GPA of 2.45 and A+ students from large schools had a mean GPA of 2.37. Both fall below the 2.50 required to maintain A+ eligibility suggesting that these students need additional assistance and is an area for concern.

10. There was no difference found between scholarship type (A+, non-A+ scholarship, and non-A+ non-scholarship) when students were categorized by gender, size of school, or degree sought or college GPA.

11. The mean GPA of A+ students seeking an AAS degree GPA ($M = 2.30$) was also below the required 2.50 needed to maintain A+ eligibility. This is another area for concern.

12. There was no difference found on the number of remedial courses taken regarding gender, size of school, or degree sought suggesting that scholarship type (A+, non-A+ scholarship, and non-A+ non-scholarship) made no difference on this variable.

Recommendations for Improved Practice

The conclusions of this study have potential for use by those responsible for the A+ Program. While these suggestions were derived from data collected at Ozarks Technical Community College, they could easily be applied to other community college settings in Missouri.

1. The mean GPA of the A+ students was 2.41. The minimum required GPA to maintain eligibility is 2.50. This indicates that many A+ students are losing eligibility or barely remaining eligible. The institution needs to look at the course load

of these students to see if they may be taking too many hours and possibly add some structured early intervention strategies to assist A+ students throughout each semester.

2. The A+ students needed as much remediation as any of the other student groups even though high schools, in order to participate in the A+ Program, are required to create challenging courses. Judging from the data from this study, all community colleges and the high schools must work together to improve the academic rigor and expectations of the curriculum. The State of Missouri may also need to consider some policy changes to ensure students are better prepared when entering college such as requiring certain courses in high school and/or raising the GPA needed to qualify for A+. The state may also want to consider limiting the number of remedial courses that A+ funding will cover.

3. This study demonstrated that A+ students are not graduating with any significantly higher rates than other students. It is recommended that receiving institutions examine the expectations of A+ students and determine whether they even plan on graduating. The institution could also gather a group of non-A+ scholarship students to compare the results from both groups.

4. The mean GPA for male A+ students ($M = 2.23$) fell below the minimum 2.50 to retain eligibility. This indicates that many male A+ students are losing eligibility or barely remaining eligible.

5. A+ students from small schools (1 to 500) and large schools (1,000 or more) performed not as good as students from medium high schools. These same two groups had cumulative mean GPAs ($M = 2.45$ for small schools and $M = 2.37$ for large schools) that fell below the minimum requirement to retain A+ eligibility. It is

recommended that the institution work closely with the counselors from these high schools to better prepare the students for entrance into college. It also appears clear that additional intervention with these students is warranted. This assistance could come in many forms, from small groups where students could share their experiences to making sure they are aware of all the resources they can access from tutoring, note taking classes, and counseling.

6. The A+ AAS degree seeking students' GPA ($M = 2.30$) fell below the minimum standard to retain their A+ eligibility. It is recommended that the A+ Office work closely with the Technical Division of the college, the division chairs, and these students themselves. One goal of the A+ Program is to prepare students for the technical workforce. These numbers suggest that these students are struggling. Again, working with these particular students in small groups and making them aware of all of the academic resources available may assist them in performing better.

Recommendations for Further Study

In Chapter I, the limitations of this study were identified. Based on the limitations of this study, and the lack of research regarding the A+ Program, several recommendations for further study were formulated. They are as follows:

1. This study was conducted at one community college in the state. A future study of at least two other community colleges and a statewide study are needed.
2. One objective of the A+ Program is that all students proceed from high school graduation to a college or postsecondary vocational or technical school or high wage job with work place skill development opportunities. In addition to studying the

success of A+ students at colleges or vocational schools, a future study to determine if these students have achieved high wage jobs would be beneficial.

3. One goal of the A+ Program is to ensure that students, when they graduate from high school, are well prepared to pursue advanced education. Many of these A+ students attend community colleges, seeking an AA degree with plans to transfer to a four-year college or university. A future study on the academic performance of A+ transfer students at four-year colleges or universities would assist in determining whether the program has attained this goal.

4. Based on this same goal of better preparing students to pursue advanced education, a future study should be considered to study the academic performance of A+ students who enrolled directly into four-year colleges and universities right out of high school.

5. This study used quantitative methods to determine academic success of A+ students. Researchers should consider conducting a qualitative study regarding the benefits of this program from the recipients' point of view, which would provide additional insights into the success of this program. An interesting question to be answered is whether these students would have entered college if this program did not exist.

6. This study did not attempt to determine why A+ students may or may not perform better than other students. A future study looking at motivational factors might allow researchers to determine if these students were more or less motivated than other students, especially scholarship recipients.

7. The A+ Program has many objectives and goals that are focused on the performance of the students while still enrolled in high school. Some of these factors are attendance rates, graduation rates, drop out rates, and disciplinary issues. This program also requires students to perform unpaid tutoring while in high school. This aspect of the program may have an effect on keeping students in school and possibly affect their choice of career. Several individual high school studies as well as a statewide study on these aspects of the program are definitely warranted, especially before anyone makes a full determination as to the effectiveness of the A+ Program.

8. Further research should be conducted to investigate how many A+ students who lost their eligibility stayed in college and were able to regain their A+ eligibility, and then graduate. This might show that A+ gives incentive and motivation to stay in college and finish.

9. A follow-up study with all three groups of students, especially A+ students, regarding the high need for remedial courses is warranted. What types of courses did these students take or not take? Is the 2.50 high school GPA too low? Should A+ be restricted on the number of remedial courses that can be covered? Results from this study could lead to some substantial policy changes.

10. A follow-up study with A+ students who do not graduate to determine what happened and why they did not finish might shed some light on additional interventions that would be helpful. This study could also help determine if their intentions were to ever graduate.

11. Research should be conducted on A+ students' parental involvement and whether being a first generation student makes any difference in academic performance.

12. Further research should be conducted to determine if the high school criteria should be changed. This criteria includes the high school GPA of 2.50, 95% attendance rate, 50 hours of unpaid tutoring, and not violating the good citizenship policy.

13. Researchers should seek to determine if the criteria to retain eligibility at the college should be changed. Should the GPA requirement be raised?

14. Several potential changes to the A+ Program should be explored. Should there be a limit on the number of remedial courses A+ should pay for? Should the time span of eligibility be shortened? Should students be limited to fewer than three times where they can lose and regain eligibility?

15. The potential savings the State of Missouri is reaping based on the number of students using A+ funding should be explored.

16. Further research should seek to identify factors that positively affected the academic performance of A+ students from middle-sized high schools.

17. Researchers should conduct a study regarding A+ students who lose their eligibility to determine the factors that caused their academic failure.

18. Further research should be conducted on the influence attending an A+ high school has on people's decisions to move into these districts.

19. The high costs of education could possibly be driving more students to utilize A+ funding. Further research should be conducted on unintended consequences of the A+ Program.

Summary

During the 10 years the A+ Program has been in existence, it has consumed over \$133 million of state funding. Yet, until this research, there has been no published study regarding this program. Today, more than ever, the A+ Program faces scrutiny. Legislators want to reallocate this money for some other state programs and four-year universities want the program expanded to include their institutions. At the same time, the state is in a budget crunch and the overall funding to sustain A+ is being reduced. Without research, decisions regarding the A+ Program could be made based solely on anecdotal evidence. That is why it is imperative to share the results of this study and to encourage continued research on the A+ Program.

This study has provided some valuable insights about the A+ Program and about scholarship funding in general. A+ students are performing as well as other scholarship students and better than non-A+ non-scholarship students in regard to college cumulative GPA. A+ students are taking less remedial courses than non-A+ non-scholarship students. This study has also shown that A+ students were not as well prepared for college as the non-A+ scholarship students (based on number of remedial courses taken) and A+ students were not graduating at a higher rate than other first-time students. Finally, this study found no difference in the GPA or number of remedial courses taken when students were categorized by gender, size of high school, and degree sought indicating no relationship between A+ and these variables.

This study's findings about state funded merit-based scholarship programs are similar to what has been found in other states. First, all students were found to have needed a high number of remedial courses. The percentage of students needing to take at least one remedial course ranged from 53% to 56% across the three groups of students. This is especially troubling considering that these students were recent high school graduates. And second, the A+ students had a mean GPA that fell below the 2.50 level to maintain eligibility indicating a large number of A+ students were losing their eligibility. High school and community college advocates of the A+ Program must address the issues raised by these findings.

While not directly related to A+, there were some additional findings that scholars may find of interest. First, female students, regardless of scholarship type, had a higher GPA than males. Second, students seeking an AA degree, regardless of scholarship type, had a higher GPA than students seeking an AAS degree. Third, female students seeking an AA degree had a higher GPA than any other combination of gender and type of degree. And fourth, students seeking an AA degree in all three sizes of high schools (small, medium, and large), regardless of scholarship type, had higher GPAs than students seeking an AAS degree.

The researcher is heavily involved with the A+ Program at OTC as well as with many of the area high schools, and, while not research based, the following observations are worth noting. Several area high schools list the A+ Program as one of many early intervention programs to keep students in school. They have reported decreased drop out rates and discipline issues; and increased graduation rates, attendance rates, and cumulative GPAs since the program was first implemented. A+

students have indicated that their tutoring experiences are meaningful not only to them but to the students they have assisted. They are building self-confidence, self-esteem, and either confirming or altering their career plans. These tutors have also provided an invaluable asset to the schools in regard to peer mentoring and the additional one-on-one attention they can and do give troubled students.

Anecdotal comments from A+ students on the OTC campus suggest a positive impact from this program. Many of the students indicated that without A+ they would not have been able to attend college or would have taken fewer hours, thus lengthening their time to degree completion.

While the program may have some faults, this study has shown the A+ Program has had a positive impact on individual students, high school curriculum, parents, teachers, school systems, and communities. This current 2003-04 school year, OTC enrolled a little over 1,200 students receiving A+ funding representing approximately 10% of the total student enrollment at OTC. In addition, 600 students who had lost their eligibility were enrolled trying to regain A+ status indicating more encouraging results. Based on the findings of this study and these numbers, A+ is proving to be a valuable resource to students.

How are the A+ students doing? It is difficult to answer this question from just this one study. However, the results of this research indicate that the students are not failing and the program is positively impacting the state. Governor Carnahan, in his initial outline for A+, indicated that the State of Missouri must design a plan to provide students with an “exciting and rigorous program of academic and technical education that leads to community college attendance or workplace skill development”

(World class schools for Missouri, 1992, p. 6). Although more research is needed, it appears from the results of this study that A+ is meeting Carnahan's vision.

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Appendix A

NUMBER OF A+ HIGH SCHOOLS IN THE STATE OF MISSOURI
LISTED BY SIZE, COUNTY, AND WHETHER OR NOT STUDENTS HAVE
ENROLLED AT OTC

| High School Name | No. of students | County | Enrolled at OTC |
|---|-----------------|-------------|-----------------|
| Large High Schools | | | |
| Hazelwood - Hazelwood West | 2527 | St. Louis | |
| Lee's Summit – Senior | 2327 | Jackson | |
| Northwest R-I | 2204 | Jefferson | |
| Pattonville | 2153 | St. Louis | |
| Columbia - Columbia-Hickman | 2113 | Boone | |
| Mehlville – Oakville | 2043 | St. Louis | yes |
| North Kansas City 74 - Oak Park | 2042 | Clay | yes |
| Mehlville - Mehlville Senior | 1950 | St. Louis | |
| Joplin | 1919 | Jasper | yes |
| Jefferson City | 1880 | Cole | yes |
| Lindbergh | 1766 | St. Louis | |
| Lee's Summit – North | 1702 | Jackson | |
| Independence 30 – Truman | 1698 | Jackson | |
| Wentzville - Emil E. Holt | 1687 | St. Charles | yes |
| Ferguson-Florissant – McCluer | 1656 | St. Louis | |
| Riverview Gardens | 1643 | St. Louis | |
| Francis Howell | 1606 | St. Charles | |
| Independence 30 - William Chrisman | 1543 | Jackson | |
| Springfield – Glendale | 1513 | Greene | yes |
| North Kansas City 74 - Winnetonka | 1497 | Clay | |
| North Kansas City 74 - North KC H.S. | 1484 | Clay | |
| Fort Osage | 1474 | Jackson | yes |
| Liberty 53 | 1460 | Clay | |
| Springfield – Parkview | 1428 | Greene | yes |
| Popular Bluff | 1384 | Butler | yes |
| Park Hill - Park Hill South | 1339 | Platte | |
| West Plains | 1333 | Howell | yes |
| Webster Groves | 1325 | St. Louis | |
| Washington | 1319 | Franklin | |
| Ferguson-Florissant - McCluer North | 1287 | St. Louis | |
| Kansas City 33 - Van Horn | 1251 | Jackson | |
| Park Hill - Park Hill H.S. | 1250 | Platte | |

| | | | |
|--------------------------------|------|--------------|-----|
| Sedalia 200 - Smith Cotton | 1248 | Pettis | yes |
| Camdenton | 1234 | Camden | yes |
| Farmington | 1232 | St. Francois | |
| Waynesville | 1220 | Pulaski | yes |
| Raymore-Peculiar | 1198 | Cass | |
| Hannibal 60 | 1143 | Marian | yes |
| Hillsboro | 1128 | Jefferson | |
| St. Charles - St. Charles H.S. | 1127 | St. Charles | yes |
| Kansas City 33 - Paseo Academy | 1126 | Jackson | |
| Springfield – Central | 1098 | Greene | yes |
| Excelsior Springs | 1086 | Clay | yes |
| Columbia - Rock Bridge | 1085 | Boone | |
| Meramec Valley R-III – Pacific | 1055 | Franklin | yes |
| St. Charles - St. Charles West | 1034 | St. Charles | |
| Hickman Mills | 1031 | Jackson | |
| Ozark | 1024 | Christian | yes |
| Webb City | 1001 | Jasper | |
| Wentzville – Timberland | 1000 | St. Charles | yes |

Medium High Schools

| | | | |
|--|-----|----------------|-----|
| Rolla | 992 | Phelps | yes |
| Warrensburg | 977 | Johnson | |
| North St. Francois Co. - North Co. High | 975 | St. Francois | yes |
| DeSoto | 971 | Jefferson | |
| Lebanon | 964 | Laclede | yes |
| Union | 957 | Franklin | |
| St. Joseph – Benton | 953 | Buchanan | |
| Cape Girardeau – Central | 950 | Cape Girardeau | yes |
| Nixa | 931 | Christian | yes |
| Willard | 908 | Greene | yes |
| Marshall | 857 | Saline | yes |
| Republic | 857 | Greene | yes |
| Branson | 844 | Taney | yes |
| St. Clair | 841 | Franklin | |
| Perry Co. 32 – Perryville | 833 | Perry | |
| Nevada | 822 | Vernon | yes |
| Carthage | 817 | Jasper | yes |
| Mexico | 809 | Audrain | yes |
| St. Joseph – Lafayette | 805 | Buchanan | |
| Center 58 | 800 | Jackson | |
| Harrisonville | 788 | Cass | |
| Neosho | 787 | Newton | yes |
| Kirksville | 786 | Adair | yes |
| Warren Co. H. S. | 782 | Warren | |

| | | | |
|----------------------------------|-----|----------------|-----|
| Sikeston | 774 | Scott | |
| Marshfield | 773 | Webster | yes |
| Fulton 58 | 750 | Calloway | yes |
| Festus | 744 | Jefferson | |
| Moberly | 741 | Randolph | |
| Potosi | 730 | Washington | |
| Carl Junction | 719 | Jasper | yes |
| Ste. Genevieve Co. | 718 | Ste. Genevieve | |
| Chillicothe | 711 | Livingston | yes |
| Odessa | 686 | Lafayette | |
| Dallas County R-I Buffalo H.S. | 682 | Dallas | yes |
| Bolivar | 659 | Polk | yes |
| Sullivan | 659 | Franklin | yes |
| Clinton | 635 | Henry | yes |
| Cassville | 631 | Barry | yes |
| Gasconade Co. R-II – Owensville | 629 | Gasconade | |
| Eldon | 616 | Miller | yes |
| Mountain Grove | 599 | Wright | yes |
| Reeds Spring | 598 | Stone | yes |
| Platte Co. - Platte City H.S. | 592 | Platte | |
| St. James - John F. Hodge | 584 | Phelps | yes |
| Greene Co. - Logan-Rogersville | 564 | Greene | yes |
| Monett | 563 | Barry | yes |
| Mtn. View-Birch Tree – Liberty | 559 | Howell | yes |
| Maryville | 550 | Nodaway | |
| Malden | 545 | Dunklin | yes |
| Boonville | 541 | Cooper | yes |
| Central R-III | 541 | St. Francois | |
| Seneca | 539 | Newton | yes |
| Fredericktown | 537 | Madison | |
| Dunklin R-V Herculaneum H.S. | 526 | Jefferson | |
| Richmond | 525 | Ray | |
| Aurora | 524 | Lawrence | yes |
| Ava | 521 | Douglas | yes |
| Kennett | 513 | Dunklin | yes |
| Salem | 507 | Dent | yes |
| School of the Osage - Osage City | 507 | Miller | yes |

Small High Schools

| | | | |
|------------------------------|-----|------------|-----|
| Smithville | 488 | Clay | yes |
| Knob Noster | 484 | Johnson | |
| Macon Co. R-I - Macon Senior | 467 | Macon | |
| Bowling Green | 463 | Pike | |
| Montgomery | 462 | Montgomery | |
| Warsaw | 447 | Benton | yes |

| | | | |
|---------------------------------|-----|-------------|-----|
| Licking | 435 | Texas | |
| Hancock Place | 434 | St. Louis | |
| Houston | 434 | Texas | yes |
| Puxico | 434 | Stoddard | |
| Mt. Vernon | 431 | Lawrence | yes |
| Arcadia Valley R-II | 408 | Iron | |
| South Harrison | 405 | Harrison | |
| Lamar | 402 | Barton | yes |
| Caruthersville | 400 | Pemiscot | |
| East Newton | 400 | Newton | |
| Trenton | 400 | Grundy | |
| Willow Springs | 399 | Howell | yes |
| Brookfield | 393 | Linn | |
| Lawson | 391 | Ray | yes |
| North Callaway | 388 | Calloway | yes |
| Charleston | 387 | Mississippi | |
| Palmyra | 386 | Marion | yes |
| Gainesville | 380 | Ozark | yes |
| Clearwater | 363 | Wayne | |
| Ferguson-Florissant – Berkeley | 363 | St. Louis | |
| East Carter Co. | 357 | Carter | |
| St. Charles Co. - Orchard Farms | 350 | St. Charles | |
| Salisbury | 349 | Chariton | |
| Carrollton – Senior | 342 | Carroll | |
| Hickory Co. – Skyline | 341 | Hickory | yes |
| Clark County R-I | 339 | Clark | yes |
| Hartville | 337 | Wright | yes |
| Southern Boone Co. - Southern | | | |
| Boone | 337 | Boone | yes |
| Twin Rivers | 333 | Butler | |
| Lexington | 332 | Lafayette | yes |
| Alton R-IV | 330 | Oregon | |
| Boone County R-IV Hallsville HS | 326 | Boone | |
| Wright City | 313 | Warren | |
| Summersville | 310 | Texas | yes |
| Knox Co. | 307 | Knox | |
| Crystal City | 293 | Jefferson | |
| Gallatin | 293 | Daviess | |
| Marceline | 290 | Linn | |
| Milan | 283 | Sullivan | |
| Cabool | 280 | Texas | |
| Shelby Co. - South Shelby | 279 | Shelby | yes |
| Spokane | 266 | Christian | yes |
| Thayer | 263 | Oregon | |
| Valley Park | 261 | St. Louis | |
| Putnam Co. | 252 | Putnam | yes |

| | | | |
|-------------------------------|-----|----------------|-----|
| Bloomfield | 246 | Stoddard | |
| Bernie R-XIII | 243 | Stoddard | |
| Concordia | 243 | Lafayette | |
| New Franklin | 242 | Howard | |
| Norwood | 238 | Wright | yes |
| Osage Co. R-II – Linn | 238 | Osage | |
| Hamilton – Penney | 237 | Caldwell | yes |
| Fayette | 236 | Howard | |
| Schuyler Co. R-I | 233 | Schuyler | |
| Osceola | 229 | St. Clair | yes |
| Mansfield | 225 | Wright | yes |
| Pierce City | 225 | Lawrence | yes |
| East Buchanan | 222 | Buchanan | |
| NE Randolph Co. – Northeast | 214 | Randolph | yes |
| Princeton | 211 | Mercer | |
| Fordland | 205 | Webster | |
| Santa Fe | 200 | Lafayette | |
| Macks Creek | 199 | Camden | yes |
| Gidion 37 | 191 | New Madrid | |
| New Bloomfield | 191 | Calloway | |
| Slater | 181 | Saline | |
| South Iron Co. | 178 | Iron | |
| Dora | 175 | Ozark | |
| Shelby Co. C-1 - North Shelby | 175 | Shelby | |
| Oak Ridge | 172 | Cape Girardeau | |
| Winona | 171 | Shannon | yes |
| Bakersfield R-IV | 168 | Ozark | |
| Sparta | 158 | Christian | |
| Adair C. R-I | 154 | Adair | |
| Linn Co. | 151 | Linn | |
| Meadville | 139 | Linn | |
| St. Elizabeth | 136 | Miller | |
| Oregon-Howell – Koshkonong | 135 | Oregon | |
| Grundy Co. | 128 | Grundy | |
| Green City | 127 | Sullivan | |
| Macon Co. R-IV - Macon Co. | 85 | Macon | |
| Gilman City | 82 | Harrison | |
| Northwestern R-I | 80 | Chariton | |

MISSOURI A+ STUDENTS: HOW ARE THEY DOING?

Abstract of dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education

By

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ABSTRACT

The primary purpose of this study was to determine if students receiving assistance through the A+ Program exhibited higher academic performance (measured by college cumulative GPA, number of remedial courses taken, and graduation rates) at OTC than two comparison groups of non-A+ students with similar background characteristics. A secondary purpose of the study was to determine if students receiving assistance through the A+ Program (categorized by gender, size of high school, and degree sought) exhibited higher academic performance at OTC than two other comparison groups of non-A+ students with similar background characteristics.

The A+ Program was established in 1993 to assist public secondary schools ensure a commitment to the following three objectives: (a) all students graduate from high school, (b) all students complete a selection of high school studies that are challenging, and (c) all students proceed from high school graduation to a college, postsecondary vocational or technical school, or high wage job. Students graduating from these high schools as A+ students receive full tuition and required fees to attend any public community college or vocational/technical school in Missouri.

In this non-experimental study, 372 students in the A+ Program were compared to 165 non-A+ scholarship students and 469 non-A+ non-scholarship students. All students included in the study had to be enrolled full-time and must have had a minimum high school GPA of 2.50. In order to test this data, a 3 x 2 x 2 x 3 ANOVA was used for all research questions.

Significant differences were found between A+, non-A+ scholarship, and non-A+ non-scholarship students regarding GPA and number of remedial courses taken. A

significant difference was found among gender and degree sought regarding GPA with an interaction effect found between gender and degree and size of school and degree. There were no additional significant differences found regarding number of remedial courses taken.

The report contains 10 tables which breakdown the means and the ANOVA statistics. Six suggestions for improved practice were included along with several recommendations for further study.

