MOTIVATIONS AND POSTSECONDARY ASPIRATIONS IN A TECHNICAL COLLEGE DUAL ENROLLMENT PROGRAM

by

NICHOLE H. KENNEDY

(Under the Direction of Christopher C. Morphew)

ABSTRACT

Students enrolled in a dual enrollment program in a technical college in Georgia were surveyed in an attempt to measure their postsecondary motivations and aspirations and to determine the relationship between the two. The study also sought to examine demographic factors that might be related to changes in postsecondary aspirations for dual enrollment participants. Participants answered an initial and final survey as well as responded to journal questions at the beginning, in the middle, and at the end of the term. Both quantitative and qualitative methods were used to arrive at the conclusion that while there is some evidence that dual enrollment can impact students' aspirations; the current study design was unable to definitively show a causal relation between dual enrollment and college aspirations.

INDEX WORDS: Dual Enrollment, Motivation, Postsecondary Aspirations, Technical College

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DEDICATION

I dedicate this dissertation to my wonderful family, Keith, Jackson, Katie, Mom, Sharon, and Leon. I could not have accomplished this goal without all of you!

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I would also like to acknowledge my good friend and former co-worker, Dixie Highsmith, who helped me formulate my ideas and thoughts to paper; her editing skills and her skills as a sounding board are invaluable. I would also like to acknowledge my major professor, Chris Morphew for his assistance in this long process as well as my committee for their time and assistance.

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INTRODUCTION

Introduction

Dual enrollment programs, in some form or other, have been around since the 19th century. With differences in structure, policies, and course offerings, most allow high school students to take college courses and earn both high school and college credit. Initially designed for small, elite groups of prep school students, dual enrollment programs have expanded widely, now enrolling approximately 813,000 students a year, generating 1.2 million enrollments (Kleiner & Lewis, 2005). Clearly the dual enrollment option is popular. Proponents claim advantages for students ranging beyond the simple opportunity to gain early college credits. Historically, the programs have been viewed as an option to reward academically gifted students who were probably already "college-bound." But there has been a change in the last few years, and more and more public school systems and local colleges are expanding the programs to offer a wider range of courses and postsecondary options (Kleiner & Lewis, 2005). These newer programs also differ in presenting dual enrollment choices for more diverse students, including first generation and technical and vocational students. While studies and research on dual enrollment have historically focused on measures of grade point average, rigor of academic preparation, and postsecondary college enrollment, few have examined students' reasons for participating in dual enrollment programs or examined students participating in dual enrollment at technical colleges. While it is generally agreed that dual enrollment has positive benefits, it remains to be seen if students themselves agree and if the motivations that drive them to

participate in dual enrollment are linked to their postsecondary aspirations. The present study filled a gap in the literature by examining a diverse group of participants who are not traditionally thought of as high achieving and who are attending a dual enrollment program offered by a technical college. This study also looked at students' motivations for pursuing a dual enrollment program, as well as compared their postsecondary aspirations at the beginning and at the end of the program. The purpose of this study was to examine the motivations and postsecondary educational aspirations of high school students participating in a technical college dual enrollment program and determine if there was any correlation between the two.

The following research questions guided the study:

1) How, if at all, have students' postsecondary educational aspirations changed since beginning the dual enrollment program?
2) What demographic factor or factors related to students' reasons for enrolling in the dual enrollment program are related to changes in postsecondary education aspirations?

Dual enrollment programs generally fall into two broad categories: examination-based, college-level learning programs, such as Advanced Placement (AP) and the College Level Examination Program (CLEP); or school-based programs, such as tech prep, dual enrollment, and concurrent enrollment programs (Johnston & Del Genio, 2001). Most dual enrollment programs of the past have been examination-based; however, over the last two decades, school-based programs have begun to grow in popularity (Kleiner & Lewis, 2005). The first of these, tech prep, is well defined through federal legislation, but the last two, dual enrollment and concurrent enrollment, have definitions and delivery models that vary from state to state. Tech

Prep programs began with amendments in 1990 to the Carl Perkins Vocational Education Act, Title IIIE, which allows articulation between high school and college courses in technical and occupational areas. Credit is housed in "escrow" and students earn college credit for high school courses when they complete one or more specified courses at the postsecondary institution (Bailey & Karp, 2003). In dual enrollment or dual credit programs, high school students are enrolled in a course or courses at a postsecondary institution while still in high school. These college courses earn students both high school and college credit simultaneously (Bailey & Karp, 2003; Catron, 2001b; Andrews, 2003). Both Tech Prep and dual enrollment programs can be considered comprehensive transition programs because a cohort of students receives academic preparation and career specific training. In concurrent or joint enrollment programs, high school students are enrolled in course(s) at a postsecondary institution while still in high school but receive college credit only (Andrews, 2003). In some cases, students receiving only college credit are referred to as dually enrolled, but for the purposes of this study dual enrollment will be defined as dual credit (see definition above). Most of the empirical literature on dual enrollment from the last two decades has focused on high achieving students taking examination-based dual enrollment courses (AP and CLEP) and examined their success after matriculating into postsecondary institutions. These studies have concentrated on high achieving students from affluent school districts that are able to offer an abundance of these types of courses. The studies that have focused on school-based programs have also used primarily high achieving students, though some, as discussed in chapter 2, have included a more diverse group of participants and have focused primarily on student satisfaction with the dual enrollment program. The present study attempted to fill the gap in the literature by examining a diverse group of participants who are not traditionally thought of as high achieving and who are attending a dual enrollment

program offered by a technical college. This study also examined the motivations students have for participating in dual enrollment as well as changes, if any, in postsecondary aspirations during the program.

Statement of the Problem

The National Center for Higher Education Management Systems (NCHEMS) data estimate that nationwide, for every 100 ninth graders, only 68 graduate from high school within four years and only 18 earn a two-year degree within three years or a four-year degree within six years ("Commentary: Got Data," 2005). This picture is even grimmer in the state of Georgia where the percentage of students graduating from high school has declined between 1996-2006 to among the lowest in the country, and the chance that a ninth grader will enroll in college has declined 10% during this same period as compared to a 2% drop nationally (The National Center, 2006). In 2005, the National Governors Association conducted a survey assessing the reasons teens consider leaving high school early or actually do leave. According to the findings, 36% of teenagers stated they dropped out of high school because they did not feel they were learning anything that was relevant to their futures. Only 13% stated they dropped out because they felt the school work was too demanding. In addition, two-thirds said that they would have stayed in high school if they knew their diploma would guarantee them a better job and a better salary ("Commentary: It's about time," 2005). Indeed, some of the ills that pervade the pathway to college for American youth are viewed as resulting from“disconnect” in students’ thinking between secondary and postsecondary education (Venezia, Kirst, and Antonio, 2003). Nevertheless, the extent to which dual enrollment efforts have mended the seam between high school and postsecondary education and positively influenced the educational outcomes of students remains largely unknown. Even with the considerable growth and the presence of such

programs, research assessing the impact that dual enrollment has on student outcomes remains sparse (Orr, 2002).

Current researchers suggest that students are generally satisfied with their dual enrollment experiences (Orr, 2002; Robertson, Chapman, & Guskin, 2001) and that participation in dual enrollment programs can encourage students to attend college (Peterson, Anjeweirden, & Corser, 2001). There is also evidence that community college dual enrollment programs provide a bridge to four-year institutions (Washington State Board of Community and Technical Colleges WSBCTC, 2004) and that dual enrollment programs expand educational choices, reduce time and expenses to complete a degree, promote academic success after transfer to universities, and promote higher levels of postsecondary academic performance relative to non-participants (Finch, 1997; Spurling & Gabriner, 2002, WSBCTC, 2004). However, many of these studies fail to control for a number of critical pre-enrollment factors (Bailey & Karp, 2003; Bailey, Hughes, & Karp, 2002), rendering the conclusions weak in terms of validity.

Despite the limitations of existing evidence regarding the impact of dual enrollment programs, there is significant literature on the potential consequences of involvement in such programs. Dual enrollment allows high school students to enroll in college courses and earn college and high school credit simultaneously, thereby exposing them to the academic and social demands of postsecondary education (Karp, Bailey, Hughes, & Fermin, 2005). Some states are using these programs to address factors students cite as reasons for leaving school. While dual enrollment programs are designed to create a smoother and more successful transition to college and are a means to provide challenging and relevant coursework to keep high school students engaged, (Bailey, & Karp, 2003), it is important to determine if they accomplish these.

Many have proposed dual enrollment programs as a means to provide rigorous coursework and postsecondary preparation for high school students. Proponents of dual enrollment programs also cite other advantages for students. Dual enrollment programs may prepare students for the academic rigors of college by exposing them to curriculum designed to promote bachelor's degree attainment (Adelman, 1999 as cited in state policies, n.d.). Additionally, they may increase communication and collaboration between secondary and postsecondary systems, therefore assisting high schools in providing information and guidance about students' postsecondary options (Orr, 2002). In dual enrollment programs, the senior year may become more challenging and meaningful by offering college credit courses to students who might otherwise reduce their efforts as they approach graduation (National Commission, 2001). Dual enrollment programs can also lower the cost of postsecondary education, enabling students to earn free college credit, thus shortening their time to degree completion (High School Leadership Summit, 2003). In providing an early model of the college environment and participation in actual college coursework, dual enrollment programs may teach students more about the skills they will need to be successful in college (High School Leadership Summit, 2003). And finally, dual enrollment programs can provide curricular opportunities that might not otherwise be available due to schools' size and limited resources (Adelman, 1999 as cited in state policies, n.d.).

These advantages can also answer students' motivations or reasons for choosing to participate in dual enrollment, especially during their senior year when they may not otherwise feel challenged. A few studies have examined students' motivations and one in particular, conducted with students enrolled in technical college dual enrollment programs in Georgia, found the most common motivations for participating were to obtain college credit for dual

enrollment courses and to increase wage-earning potential, both during and after college (Harnish & Lynch, 2005). Students report other reasons for participating in dual enrollment, such as to learn a skill, to take something different or interesting that their high school may not offer, or to attend classes during the school day at a college with state-of-the-art equipment. Some state that they took the dual enrollment option because someone (often a friend) suggested it (Harnish & Lynch, 2005).

These advantages may further suggest that dual enrollment courses can be considered more "authentic" than either Advanced Placement (AP) or International Baccalaureate* (IB) courses which use specially created college-level curricula, but are not actual college courses (State Policies, n.d.). Also such AP and IB courses and/or programs are not always available to students who attend rural, inner city, or smaller schools due to a lack of resources. Therefore, dual enrollment may be a viable option to help bridge the gap between high school and college for these students and allow them to earn college credit. This is especially true for minority students who are often concentrated in the 40% of schools that do not offer AP (or IB) courses (Hoffman, 2003a). In addition, students must first pass the AP or IB course in high school and then score well on an exam (often at the students' expense) to successfully earn the coinciding college credit. (State Policies, n.d.). Dual enrollment programs provide a viable option for students who do not have the opportunity to participate in these programs or those who prefer the authenticity of actual college coursework.

The opportunity to earn college credit in high school is no longer limited to high-achieving students who attend well-funded public schools which offer an abundance of AP courses (Hoffman, 2003b). Dual enrollment offers even under-achieving students a chance to earn college credit. Proponents of dual enrollment programs believe that these students may

benefit because they are often bored in class or see little or no relationship between their achievement in high school and their future success. Dual enrollment courses can provide academically rigorous and engaging courses to these students, and that opportunity itself may promote hard work and high achievement (Bailey et al., 2002). Providing more rigorous courses for students who may not have been otherwise challenged may contribute to their future college success. In 2000, 66% of high school graduates aged 25 to 29 completed some college after high school, but only 33% of graduates held a bachelor's degree (NCES, 2001 as cited in Bailey, Hughes, & Karp, 2002). Dual enrollment programs could likely help to increase the number of students who persist to graduation.

Research in the field of dual enrollment is typically undertaken to promote the practice as a successful model for high school to college transition. Most research findings concentrate on increased grade point average (GPA), better retention and high school graduation rates, and the decrease in students' time spent earning a postsecondary degree. However, while increased access to postsecondary education is a goal of many dual enrollment programs, little if any research has been conducted to determine if participation has any relationship to students' postsecondary aspirations or whether the motivations for participating in the program have any relationship to students' aspirations.

Conceptual Framework

Workforce development and human capital theories of economic development provide the underlying concept for growing national concerns about promoting college access and success for more high school students. The demands of the job market and the need for a highly skilled labor force call for more students to continue their education beyond high school (Bragg, 2006; Lynch, 2000; Education Trust, 1999; Harnish & Lynch, 2006). However, studies of the

college participation gap in the U.S. point to the need for state policies and funding that ensure greater postsecondary participation rates for secondary students, particularly those in underserved and disadvantaged populations (Ruppert, 2003; Venezia, Finney, Kirst, & Usanl, 2005). Creating a continuum of education that better prepares students for college-level work is needed to address postsecondary access and success issues.

Several national studies have been done on the growth of dual enrollment programs and policies to facilitate transition to postsecondary education. There are many benefits of dual enrollment frequently cited in the literature. Generally, it is argued that dual enrollment programs can smooth the transition from high school to college and shorten the time required for students to complete an undergraduate degree, thus resulting in financial savings for parents and/or states. These programs may also increase students' access to college. Dual enrollment programs may help to eliminate unnecessary duplication of curricula from high school to college and expand academic options for college bound students. Dual enrollment programs may allow students to "test the waters" of college education, thereby improving students' study habits and increasing their academic readiness for college. Such programs can provide for professional development of both high school and college faculty, and provide an effective recruiting tool for colleges, while promoting better institutional relationships between high schools and colleges (Bailey & Karp, 2003; Conklin & Williams, 1989; Clark, 2001; Fincher-Ford, 1997; McMannon, 2000). These benefits to students may also be seen as primary motivations and/or reasons for them to participate in these programs.

Participation in dual enrollment programs may significantly affect students' decisions about attending college in a myriad of ways. Cabrera and LaNasa (2000) conducted a comprehensive review of the factors that influence the college choice process. Among those

factors were students' educational and occupational aspirations, availability of information about college, cost of attendance, and financial aid. If curricular rigor is related to educational aspirations and those aspirations are a key predictor of students' college choices, the completion of college-level coursework by high school students in dual enrollment could play a salient role in those students' decisions about whether and/or where to enroll in college (Museus, Lutovsky, & Colbeck, 2007). Also, if information students possess about college plays a role in their choices to pursue postsecondary education, the amount of time and energy dually enrolled students spend navigating their way through college environments and learning about student life could also significantly impact those students' college choice processes. Moreover, in states (such as Georgia) where dual enrollment is funded by the government or the educational institutions, students could complete several credits in dual enrollment programs tuition-free, thereby reducing the total cost of attaining a four-year degree and positively influencing these students' decisions about whether and where to go to college.

Huntley and Schuh (2003), in their qualitative study of dual enrollment students, found students gave several reasons for enrolling in college while still attending high school, and these reasons were seen as facilitating their transition to college and making their college experience potentially more positive. These students saw dual enrollment as a means to get ahead in college. Most of the study participants indicated they planned to attend college after high school graduation and their high school did not offer the courses they wanted. Students cited an economic motive as they received a tuition reduction for their college courses. Some indicated a strong dislike of high school or saw their high school courses as boring and not relevant to their career goals. These students viewed dual enrollment as a way to get out of high school and advance their career training. They were typically taking more specific college courses that

could directly be tied to their future aspirations, rather than simply taking courses that would count as electives (Huntley & Schuh, 2003).

While there is extensive and growing interest in dual enrollment programs and substantial investments have been made in them by many states, including Georgia, the literature provides little solid research on actual outcomes of these programs (Bailey, Hughes, & Karp, 2003; High School Leadership Summit, 2003; Bragg, 2006; Harnish & Lynch 2005). There is evidence that students like these programs and deem them to be both useful and motivating (Harnish & Lynch, 2005); however, the current literature on dual enrollment is largely descriptive and editorial in nature. The evaluative reports that are available have mostly been compiled by those involved in the programs and tend to emphasize the positive, and most studies do not control for anticipated outcomes in the absence of the dual enrollment program in question (Harnish & Lynch, 2005). In addition, most of these programs are still targeted to high achieving students; therefore, it is not surprising when studies show that participants tend to fare better (Bailey, Hughes, & Karp, 2003).

The central task of this study was to determine students' reasons for participating in dual enrollment as well as to measure their postsecondary aspirations before and after completion of a dual enrollment program at a technical college. While there is a considerable amount of empirical work conducted on dual enrollment programs, especially as they provide a successful model for high school to college transition, most research considers only increased grade point average (GPA) and retention and graduation rates and the reduction of time in students' earning a postsecondary degree. Additionally, while increased access for traditionally underserved populations is a goal of many dual enrollment programs, little if any research has been conducted to determine if participation has any relationship to students' postsecondary aspirations. There is

also little research on dual enrollment students participating in dual enrollment with a technical college; the majority of the research is conducted with community colleges and four-year colleges and universities.

The purpose of this study was to examine change in dual enrollment students' postsecondary aspirations from the beginning of the program and how the motivations behind the decision to participate in dual enrollment programs may be linked to students' postsecondary aspirations. Specifically this study examined the postsecondary aspirations of students enrolled in dual enrollment programs at a technical college in Georgia.

Significance of the Study

Dual enrollment programs allow high school students to enroll in college courses and earn college and high school credit simultaneously, thereby exposing them to the academic and social demands of postsecondary education (Karp et al., 2005). Many states see dual enrollment as one approach in addressing the factors students cite as reasons for not remaining in school. Dual enrollment programs are designed to create a smoother and more successful transition to college and are a means to provide challenging and relevant coursework to keep high school students engaged.

Even though there is a wealth of data from many sources indicating the benefits dual enrollment provides students, high schools, postsecondary institutions, and society as a whole, the High School Leadership Summit (2003) argues for more specific information on dual enrollment programs in general. Research needs to discover how many and what types of students participate in dual enrollment and what program features are most common in dual enrollment programs. What evidence is there that dual enrollment efforts support students' transition to and persistence in postsecondary education? And how do state policies influence

program structures and practices? This study addressed the gap in the research to date by examining the relationship between dual enrollment and postsecondary aspirations, using a survey instrument as well as student journals. Further, this study examined a diverse group of students, including minority students, students who were less affluent, and students who have been traditionally considered "average" as compared to those dual enrollment students studied in the past. The study was further concentrated on students attending a dual enrollment program through a technical college instead of a four year university or two year community college. These factors provided additional data to add to the existing body of literature on dual enrollment programs.

This study built upon the body of knowledge related to dual enrollment presented in the literature review (Chapter 2). Several aspects of this study made valuable contributions where little information currently exists. Most dual enrollment studies are narrowly focused, only looking at students' experiences in the program (i.e., whether college instructors were challenging, whether the classes were useful and rigorous, etc.); grade point averages and retention rates once students graduate and matriculate into postsecondary education; and time to degree completion in college. Additionally, most studies on dual enrollment are conducted at community colleges and four-year colleges and universities. The present study is one of the very few conducted at a technical college. Further, most studies on dual enrollment are undertaken with students enrolled in academic courses (i.e., English, math, science, etc.). This one specifically examined students enrolled in technical or vocational courses (i.e., criminal justice, health, business, etc.).

The current study assessed students' postsecondary aspirations at the beginning of their dual enrollment programs and again at the end. It identified students' reasons for taking dual

enrollment courses in high school through both quantitative and qualitative data collection. The literature review (Chapter 2) examined current research and noted students' rationale in choosing to participate in a dual enrollment program while in high school. The survey instrument used here incorporated findings from the literature to determine, at the beginning of students' dual enrollment programs and again at the end, the correlation between participation in the program and changes in students' educational aspirations. At the beginning of the dual enrollment program, students were asked to rate the importance of their reasons for participating in dual enrollment programs. They were also asked about their plans after high school graduation in order to ascertain their educational aspirations at the beginning of the dual enrollment program. These same questions were asked after students had completed their programs and the results were compared. To provide additional information, a select group of students was asked to provide journals on a bi-weekly basis during their participation in the dual enrollment program. Journal questions were provided and collected via email and in the dual enrollment classes. These results, along with the survey results, are presented in the findings sections (Chapters 4 and 5).

In focusing primarily on minority students in a dual enrollment program in a technical college, this study provided a new direction in considering the value of these programs generally. Dual enrollment through a technical college may address the needs and aspirations of a traditionally underrepresented group of high school students. Additionally, more research into technical college dual enrollment programs and the results of this study may provide further direction in analyzing the role and value of technical education. While the results of this study are not conclusive, they do provide secondary and postsecondary educators and administrators further information on the impact dual enrollment programs in technical colleges may have on

students' postsecondary aspirations. One of the most important reasons that states provide dual enrollment programs is to foster seamless educational opportunities and transition from high school to college. Determining whether students' experiences in the program are related to their aspirations is an important step in evaluating the continued worth of these programs.

Chapter II

REVIEW OF LITERATURE

Introduction

The National Center for Higher Education Management Systems (NCHEMS) data estimate that nationwide, for every 100 9th graders, only 68 graduate from high school within four years, and only 18 earn a two-year degree within three years or a four-year degree within six years ("Commentary: got data," 2005) This picture is even more grim in the state of Georgia where, according to Ruppert (2003), for every 100 9th graders, only 52 graduate with their class and only 32 go on to college. In 2005, the National Governors Association conducted a survey assessing the reasons teens consider leaving high school early or actually do leave. According to the findings, 36% of teenagers stated that they dropped out of high school because they did not feel they were learning anything that was relevant to their futures. Only 13% stated they dropped out because they felt the school work was too demanding. In addition, two-thirds said that they would have stayed in high school if they knew their diplomas would guarantee them better jobs and better salaries ("Commentary: it's about time," 2005). What do these statistics indicate about American high schools? Can anything be done to provide more relevant and rigorous work for students? And finally, how can educators help students see the link between high school completion and future earnings? Dual enrollment programs may provide some answers.

Dual enrollment programs allow high school students to enroll in college courses and earn college and high school credit simultaneously, thereby exposing them to the academic and social demands of postsecondary education (Karp et al., 2005). They are designed to create a

smoother and more successful transition to college and are a means to provide challenging and relevant coursework to keep high school students engaged (Bailey, & Karp, 2003). Many states have developed dual enrollment programs to address these educational issues. According to the Education Commission of the States (ECS), all but three states have some sort of dual enrollment program. In 2004, the U.S. Department of Education (USDOE) and the Community College Research Center of Columbia University released a study entitled *State Dual Enrollment Policies: Addressing Access and Quality*. The study compared existing state policy and regulations in the United States across ten specific indicators regarding dual enrollment legislation. Interestingly, 38 of the 50 states have written statewide policy regarding dual enrollment, and Georgia ranks as one of the most regulated states when it comes to this issue, with data recorded in seven of the ten categories. Programs range from those which simply allow high school students to enroll in college courses to others which mandate that all schools provide dual enrollment opportunities. Some states offer little guidance in how to implement and maintain these programs while others have very rigorous dual enrollment guidelines, admission requirements, teacher qualifications, credit transfer policies, and even pre-enrollment student counseling (National Center for Education Statistics, 2001 as cited in Bailey, Hughes, & Karp, 2002).

Proponents of dual enrollment programs argue for a variety of advantages provided by dual enrollment programs. Dual enrollment may help prepare students for the academic rigors of college by exposing them to curriculum designed to promote bachelor's degree attainment (Adelman, 1999 as cited in State Policies, n.d.). They may also enhance communication and collaboration between secondary and postsecondary systems, thereby assisting high schools in providing information and guidance about college opportunities for students upon high school

graduation (Orr, 1998, 1999 as cited in State Policies, n.d.). Involvement in dual enrollment may serve to make the senior year more challenging and meaningful for students by offering college credit courses to students nearing graduation who might otherwise regard their senior year as a waste of time (National Commission, 2001). Dual enrollment programs can also help to lower the cost of postsecondary education, enabling students to earn free college credit and, thus, shorten their time to degree completion (Orr, 2002 as cited in State Policies, n.d.). The experience of dual enrollment can provide a model for students of the skills they will need to be successful in college through their participation in actual college coursework (Orr, 2002 as cited in State Policies, n.d.). And, finally, dual enrollment programs can also provide wider course offerings that might not otherwise be available because of space limitations or schools' already strained resources (Adelman, 1999 as cited in State Policies, n.d.).

This literature review considered the overall concept of dual enrollment education, the state of Georgia's policies related to dual enrollment, the available national data on dual enrollment, the advantages and disadvantages of dual enrollment programs, and finally issues involving access to dual enrollment programs for underrepresented students.

Conceptualization of Dual Enrollment

This section provides a brief history of dual credit/dual enrollment programs, a section on the characteristics of dual enrollment programs, and an overview of the current status of dual enrollment programs.

History of Dual/ Enrollment/Dual Credit

The practice of accelerating high-achieving students can be traced back to the 1900s with Andrews (2003) reporting colleges allowing students to enroll prior to high school graduation as early as the 1950s. College-level learning in high school got its start in the 1950s but grew in

popularity with the Carnegie Commission on Higher Education's publication of *Less Time, More Options* in 1971, which argued for shortening the time in formal education by offering college-level learning. The report states that bachelor's degree programs could be shortened by as much as one year through college-level learning in high school. At the time this meant expanding AP and CLEP programs. The publication of *Continuity and Discontinuity* in 1973 also suggests that high schools could provide a curriculum that colleges and universities would consider equivalent to lower division general education programs (Johnston & Del Genio, 2001).

College-level learning programs often involve students' earning college credit in high school either through taking classes that are comparable to those taught in college or sitting for examinations. The most popular of these programs is the Advanced Placement (AP) program developed with Ford Foundation backing in the 1950s and administered through College Board (Johnston & Del Genio, 2001). The program began with a handful of eastern prep schools and private liberal arts colleges and has now grown to over one million exams taken every year by 700,000 high school students and results reported to over three hundred colleges and universities. The AP program allows students to sit in college-level courses in high school and then take end-of-course examinations. If students pass these exams, they are awarded college credit (College Board, 2007). Advanced Placement credit is then accepted by the postsecondary institution if students meet admission requirements. Advanced Placement is probably the most well known example of exam-based dual credit in the United States (Johnston & Del Genio, 2001). Another example of college-level learning is the College-Level Examination Program (CLEP) which also provides students of any age the opportunity to earn college credit through a program of exams in college courses (College Board, 2007). These exams are typically taken during or just prior to

the college admission process. Both AP and CLEP are considered examination-based credit programs.

The publication of *A Nation at Risk* in 1983, which documents the rising costs of higher education along with increased competition for high school students to get into selective institutions, also brought about a push for college-level learning in high school (Johnston & Del Genio, 2001). The report cites a number of advantages. College-level learning may enhance students' skills in a more college-oriented curriculum taught with higher standards. Such efforts can earn students advanced credits needed for degree completion and, therefore, reduce the cost of higher education for parents, students, and taxpayers. Involvement in such curricula in high school can enhance students' prospects for admission and success in higher education. College-level learning providers (such as College Board) gain status, visibility, and revenue while sponsoring college-level learning in high school. Finally, colleges and universities seeking to matriculate students carrying college-level credits can become more competitive in attracting advanced students. Once again the focus is on college-level learning in high school, primarily through AP and CLEP programs.

While AP and CLEP programs are considered examination-based college-level learning programs, tech prep, dual enrollment, and concurrent enrollment programs are considered school-based models. The first is well defined through federal legislation while the last two have definitions and delivery models that vary by state. Tech Prep programs began with amendments in 1990 to the Carl Perkins Vocational Education Act, Title IIIE which allow articulation between high school and college courses in technical and occupational areas. Credit is housed "in escrow" and students earn college credit for high school courses when they complete one or more specified courses at a postsecondary institution (Bailey & Karp, 2003). Dual enrollment or

dual credit programs differ in that high school students are enrolled in a course or courses at a postsecondary institution while still in high school. These college courses earn students both college and high school credit simultaneously. (Bailey & Karp, 2003; Catron, 2001b; Andrews, 2003). Both Tech Prep and dual enrollment programs can be considered comprehensive transition programs because a cohort of students receives academic preparation and career specific training. Concurrent enrollment or joint enrollment programs allow high school students to enroll in course(s) at a postsecondary institution while still in high school, but they receive college credit only (Andrews, 2003). In some cases students receiving only college credit are referred to as dually enrolled, but for the purposes of this literature review, dual enrollment will be defined as dual credit (see definition above).

The first organized dual enrollment program in the United States began in 1972 with the Syracuse University Project Advance (SUPA) as a way to combat "senioritis." This program originally targeted high-achieving students but has now expanded to include all qualified high school seniors. The project began with seven high schools and now serves over 6,000 students from 134 high schools (Kim, Kirby, & Bragg, 2006). Other programs that have also targeted both average achievers and high-risk students include La Guardia Middle College High School, begun in 1974 at LaGuardia Community College; Florida International University Partners in Progress, begun in 1982; and Kingsborough Community College Now, begun in 1984. More discussion on these and other exemplary programs will be discussed later in this literature review.

Characteristics of Dual Enrollment Programs

In 2005 the National Center for Education Statistics (NCES) published a report on dual enrollment at the request of the Office of Vocational and Adult Education, U.S. Department of

Education. This report, written by Kleiner & Lewis in 2005, provided data on dual enrollment from the 2002-2003 school years. At the time of the survey, 38 states had dual enrollment policies; however, there was no existing national source of information on dual enrollment. This survey provided policymakers, researchers, educators, and administrators information on the prevalence and characteristics of dual enrollment programs. It also assessed certain characteristics about dual enrollment courses, including course location, course instructors, program curricula, academic eligibility requirements, and funding (Kleiner & Lewis, 2005).

Approximately 813,000 high school students took college-level courses through postsecondary institutions, either within or outside dual enrollment programs, during the 2002-2003 twelve-month academic year. This number represents about 5% of all high school students (Kleiner & Lewis, 2005). Of those 813,000 students, approximately 680,000 (84%) took courses within a dual enrollment program, and approximately 133,000 (16%) took courses outside a dual enrollment program. Public two-year institutions had more high school students taking college-level courses than public four-year and private four-year institutions (619,000 versus 122,000 and 67,000, respectively). Therefore, 77% of high school students who took dual enrollment courses did so with a public two-year institution, while 15% took courses with a public four-year institution and 8% took courses with a private four-year institution (Kleiner & Lewis, 2005). A greater percentage of the public two-year institutions offered courses on the high school campus, compared to the four-year public and four-year private institutions (73% versus 47% and 28%, respectively) (Kleiner & Lewis, 2005). Also, a greater percentage of public four-year institutions than public two-year and private four-year institutions had academic eligibility requirements. Public four-year and private four-year institutions used minimum high school grade point average as a requirement more frequently than did public two-year institutions (79% and 86%,

respectively, versus 46%). A higher percentage of public two-year institutions than public four-year and private four-year institutions required passing a college placement test (73% versus 22% and 13%, respectively). Most of the institutions surveyed (96%) allowed 12th grade students to participate, 86% allowed 11th grade students, 28% allowed 10th grade students, 16% allowed 9th grade students, and 2% allowed students in grades lower than 9th grade (Kleiner & Lewis, 2005).

Current Status of Dual Enrollment Programs

Dual enrollment programs are growing in popularity, especially over the last decade. In the 1996-1997 school years, 204,790 high school students participated in some type of program for which they earned college credit (Andrews, 2000 as cited in Porter, 2003). By the year 2002, this number had grown to 560,000 (Levinson, 2002 as cited in Porter, 2003). The most current numbers for dual enrollment, from the 2002-2003 school year indicate that approximately 813,000 high school students took a course or courses that earned them college credit (Kleiner & Lewis, 2005) at approximately 70% of U.S. high schools. Hoffman (2005) estimates that between 10 and 30 percent of high school juniors and seniors secure credit in states that have made long term commitments to dual enrollment and do not charge the student for enrollment. She contends that nearly half of dual credits are earned by students participating in career and technical education (CTE) pointing to the wide delivery of credit that falls under the dual enrollment umbrella. This further emphasizes the need to study students who are participating in dual enrollment programs that focus on career and technical courses in addition to those participating in academic courses. As of 2005, forty states had dual enrollment policies with some more stringent than others. Those policies, as they relate specifically to the state of Georgia, will be discussed in the next section.

Overview of Georgia's Policies on Dual Enrollment

Current dual enrollment policy in Georgia has two components: the Accel Program, formerly Post Secondary Options (PSO), which is funded by the Helping Outstanding Pupils Educationally (HOPE) Scholarship program, and the Tech Prep Program, funded by the HOPE Grant. There are significant differences between the two. First, the Accel Program is available only to 11th and 12th graders who have met advanced admissions requirements. A combined score of 970 on the SAT and a 3.0 Grade Point Average are the minimum requirements for consideration for dual enrollment status at a University System college or university. However, an 1100 SAT is typically preferred. To participate in Accel at a technical college, students must have at least a 430 Verbal/Critical Reading score and a 400 Math score or equivalent ACT, ASSET, or COMPASS scores. The only courses which qualify in the Accel program are the core-curriculum courses of English, language arts, math, social studies, science and foreign languages. These courses are state-approved and must be taught by college instructors. The Accel program is funded through lottery proceeds by way of the HOPE Scholarship program, and credit hours taken through Accel do not count toward the HOPE Scholarship cap (Georgia Department of Education, 2005a).

On the other hand, the Tech-Prep dual enrollment program is available to 11th and 12th graders who have met admissions requirements (2.0 Grade Point Average and minimum scores on an approved placement test) set by the technical colleges' governing board, the Technical College System of Georgia (TCSG). Courses in the Tech-Prep program include only technical/vocational classes that apply to a Tech Prep high school program and technical college diploma or certificate programs. These courses are state-approved and may be taught by high school or college instructors. The Tech-Prep program is funded by the Georgia Lottery through

the HOPE Grant program, so, again, neither the secondary nor the postsecondary institution loses funds (Georgia Department of Education, 2005b).

These two programs target different students and have very different missions in the state of Georgia. The Accel program is designed for students who are advanced, ready for college level work, and able to find transportation to the post-secondary institutions to take their classes. These students usually attend classes at a two- or four-year institution that is part of the University System of Georgia (USG), but they may also attend classes at a technical college. On the other hand, the Tech-Prep program targets those students who find relevance in technical classes and may benefit from the career-related options available at their postsecondary institutions (U.S. Department of Education, 2004). These students usually attend classes on their high school campus which are administered and taught by both high school and technical college faculty. The state is responsible for validating minimum course requirements, but the high school and/or technical college may impose more rigid requirements. The high schools and the technical colleges are responsible for ensuring that instructors meet minimum academic requirements for accreditation purposes. Table 2.1 illustrates the various dual enrollment opportunities in Georgia.

Table 2.1

Overview of Dual Enrollment Programs in Georgia

Joint Enrollment	**Accel Program**	**Tech Prep**
• Earn college credit only for courses taken • Take any courses after meeting requirements • HOPE Grant provided in some cases	• Earn college and high school credit simultaneously • Available only for core courses • HOPE Scholarship provided	• Earn college credit toward a technical college certificate or diploma simultaneously with high school credit • HOPE Grant provided

Source: Georgia Department of Education, 2005.

In some respects, Georgia already has the best model for dual enrollment in the country. The state provides opportunities for academically-advanced students to take courses that apply toward a degree program at a college or university. The state also provides opportunities for students who wish to pursue technical coursework that will apply toward a certificate or diploma program at a technical college. The latter option allows less academically inclined students the opportunity to pursue postsecondary education while still in high school, as well as a chance to get a start on furthering their education after graduation. Without this option, some of these students might never consider pursuing postsecondary education, whether technical or academic in nature. Both Accel and Tech Prep are funded through the Georgia lottery, so actual state dollars for education are not taken away from high schools and colleges. It is necessary to examine secondary and postsecondary educational options nationwide to determine the value of continued support for and expansion of dual enrollment programs in the United States.

National and State Data on Secondary and Postsecondary Education

According to the U.S. Census, in 2000 17.3 million students entered postsecondary education and that number is expected to increase by 2.3 million by the year 2015. This means that by 2015 there will be more than 19.6 million students in postsecondary education (a 13% increase from 2000) (Ruppert, 2003). This still leaves the U.S. behind Canada, Korea, and Sweden who are experiencing dramatic gains in high school graduation and college degree attainment rates. Therefore, policy makers and state leaders must address the issue of expanding access and increasing participation, especially for underrepresented populations where the participation gap is widening in the United States (Ruppert, 2003).

According to a 2003 study conducted by the Education Commission of the States (ECS) entitled *Closing the College Participation Gap: A National Summary*, the United States is

experiencing many warning signs that the current state of postsecondary performance poses a risk of falling educational attainment rates in the future. First, the U.S. is falling behind other industrialized nations in college participation rates and attainment. For example, the U.S. is first among all nations in the percentage of 45-54 year olds with a high school credential but drops to 9th place in the percentage of 25-34 year olds with a high school credential. Thus, it no longer holds true that the next generation will be better educated than the last (Ruppert, 2003). The baby boomers are being replaced by a smaller generation that may well be less educated. This will have a profound effect on the future labor force in the U.S. (Ruppert, 2003).

Second, there also exist gaps in college participation and attainment rates when students are compared by age, race, ethnicity, and income. For example, 48% of Hispanics age 25 and older lack a high school credential (20% for the entire U.S. population, 15% for Whites). According to the ECS study, closing this gap between Hispanics and Whites would give better access to postsecondary education for half a million Hispanic youth ages 18-24, adding another $45.5 billion to the U.S. economy (Ruppert, 2003).

Third, while the need to expand access to postsecondary education and increase attainment rates is at the forefront, especially for ethnic minorities, demographic and economic forces are limiting states' abilities to protect and expand postsecondary education over the next decade (Ruppert, 2003). For example, postsecondary education takes a disproportionate share of cuts during economic downturns. In the 2003-2004 academic year, about half of the states reduced higher education appropriations primarily because of higher expenditures for secondary education, homeland security, corrections, and healthcare such as Medicaid programs. This means more families are responsible for financing tuition without state assistance, and this serves to widen the participation gap for the low income population (Ruppert, 2003).

Fourth, the U.S. will experience double-digit percentage increases in traditional college-age enrollments over the next decade, but half of the states will see little or no growth or even a decline in the numbers because of a number of factors. Fewer than 38% of nineteen year olds graduated from high school by 1999-2000 and enrolled in college in 2000. One out of every ten teenagers between sixteen and nineteen years of age is considered a "dropout," meaning not enrolled in high school and not graduated (Ruppert, 2003). Georgia fares even worse. Only 27.9% of 18-24 year olds participate in postsecondary education, leaving the state 49th in the country. Only 31.6% of the population has a chance to go to college, tying the state with Arkansas for 46th in the nation. Part of this is certainly attributable to Georgia's high school dropout rates and consequent low high school graduation rates. Georgia only graduates 52 out of 100 9th graders, ranking 49th in the nation, and has a 13.8% high school dropout rate, the 3rd highest in the nation (Ruppert, 2003). This disparity is even more pronounced with African-American and Hispanic students. For example, of adults 25 years or older who hold less than a high school credential in Georgia, 27.5% are African-American, 20.5% are Asian, 51.5% are Hispanic, and 17.3% are White. Of adults 25 years of age or older who hold a college degree (associate or higher) in Georgia, 20.6% are African-American, 49.2% are Asian, 17.2% are Hispanic, and 33% are White (Ruppert, 2003). There is clearly a need to increase high school graduation and postsecondary attainment rates in the state of Georgia as well as in many states across the United States. To accomplish this, it must first be determined why students are not completing high school. Then, for those students who do graduate and begin postsecondary education, research must be conducted to determine why they are not succeeding in college.

According to a 2001 report from the National Commission on the High School Senior Year entitled *The Lost Opportunity of Senior Year: Finding a Better Way*, several facts about

American high schools directly relate to postsecondary education. First, one-third to one-half of high school students are under-educated or mis-educated. Secondly, many students who do graduate are ill-prepared for college. Many students never graduate from high school at all, and graduation rates for low-income and minority students lag behind middle and upper-income students. In large cities, up to 40% of high school students drop out. Finally, in many schools, the senior year seems to be a lost opportunity. According to the report from the National Commission on the High School Senior Year, even when students do make it to college, many need remediation. In fact, 30% of college students arrive needing remedial classes, one-third never see their sophomore year, and over 50% of college students fail to earn a degree (Kleiman, 2001). Remediation takes place in all community colleges, in four out of five public four-year institutions, and in more than six out of ten private four-year institutions, at an annual cost of between $260 million and $1 billion (National Commission on High School Senior Year, 2001).

There are multiple reasons why students may need remediation in college and many have to do with students' experiences in high school. Peterson (2003) gives some examples in a report entitled *Overcoming the Senior Slump: The Community College Role*. First, students are frequently not being challenged academically by the senior year and are not actively preparing for college. According to the Educational Trust (2001), while three-fourths of high school graduates are entering college, only about half have completed at least a mid-level college-preparatory curriculum (four years of English, three years of math, science and social studies), and this drops to 12% when foreign language study and computer science are added. Horn and Kojah (2001) found that 87% of students who completed rigorous coursework in high school persisted three years after entering a four-year institution, but only 62% of students who had not completed rigorous coursework persisted after three years. This contributes to the argument

made by some that dual/concurrent enrollment programs provide more challenging and rigorous coursework to high school students, thereby increasing students' aspirations to attend college and leading to greater success in college once they enroll (Andrews, 2003; ; Bailey & Karp, 2003; Boswell, 2001a; Chapman, 2001; Peterson, 2003). In the face of such alarming statistics, it is necessary to examine the possible advantages and disadvantages of dual enrollment programs.

Advantages and Disadvantages of Dual Enrollment Programs

Advantages of Dual Enrollment Programs

According to the High School Leadership Summit which produced a series of issue papers on secondary education in the United States in 2003, nearly one-fourth of freshmen at four-year institutions and nearly one-half at two-year institutions do not advance to their second year. Three primary factors may contribute to this alarming statistic. Though students of all abilities learn more in academically rigorous courses, too few high school students are actually enrolled in challenging classes. Often, high schools do not offer such courses. Or when they do, students do not receive clear information from guidance counselors and teachers about the courses they need to prepare for postsecondary education. Students are often not aware they are compromising their futures by taking less rigorous courses. And in many states, high school courses are not aligned with the minimum requirements for placement in college-level courses in public four-year and "open enrollment" community colleges and universities. Postsecondary education and training are becoming a virtual necessity for economic survival; therefore, it is imperative that states encourage rigorous academic programs in the senior year of high school and ensure that all students are aware of and prepared for whatever future education or training they may need. Dual enrollment programs are one avenue of providing such preparation for high school students.

Proponents of dual enrollment programs argue that they prepare students for the academic rigors of college by exposing them to curriculum designed to promote bachelor's degree attainment (Adelman, 1999 as cited in State Policies, n.d.) Many suggest that dual enrollment programs improve relationships between secondary and postsecondary systems, thus providing high schools with better information about and access to college opportunities for their students (Orr, 1998; 1999 as cited in State Policies, n.d.). Such programs may make the senior year more challenging and meaningful by offering college credit courses to students who might otherwise reduce their academic efforts as they approach graduation (National Commission, 2001). By enabling students to earn free college credit, dual enrollment programs can usually reduce the cost of postsecondary education and shorten the time to degree completion (High School Leadership Summit, 2003). Through their linkage with actual college coursework, these programs also often provide more realistic experience for students of the habits and skills needed for success in college (High School Leadership Summit, 2003). Finally, proponents suggest, dual enrollment programs can provide curricular opportunities that might otherwise not be available because of limits in schools' physical space and limited resources (Adelman, as cited in State Policies, n.d.).

If dual enrollment courses may be considered more "authentic" than either Advanced Placement (AP) or International Baccalaureate (IB) programs, which do not offer actual college courses (State Policies, n.d.) and are not always available to students who attend rural, inner city, or smaller schools due to a lack of resources, they can be an effective way to bridge the gap between high school and college and allow many more students to earn college credit. This is especially true for minority students who are often concentrated in the 40% of schools that do not offer AP (or IB) courses (Hoffman, 2003b). In addition, while students must first pass the AP or

IB course in high school and then score well on an exam (often at the student's expense) to successfully earn the coinciding college credit. (State Policies, n.d.), dual enrollment programs usually have less rigorous admissions requirements. They can, thus, provide a viable option for students who do not have the opportunity to participate in AP or IB programs or who may prefer the authenticity of actual college coursework.

Dual enrollment may also help to ease the psychological transition to college. Often students who do not persist in college cite non-academic reasons, such as being overwhelmed by the new institution, feeling unfocused, or having unrealistic expectations about the college experience (Noel, Levitz, and Saluri, 1985 as cited in Bailey et al., 2002). Woosley (2003) found that higher social adjustment ratings are positively related to higher degree completion probabilities at the college level. Dual enrollment also gives students the opportunity to experience the "non-academic" side of college life, therefore demystifying the college experience and allowing students to acclimate to college earlier (Bailey et al., 2002). These students can thus begin to learn what is expected of them academically, socially, and emotionally, perhaps increasing their confidence and helping them to navigate the transition from high school to college. This added college experience may also help avoid expensive "false starts" in college by allowing students to see whether college is right for them (Bailey et al., 2002).

Dual enrollment provides the opportunity for students to shorten their time to degree completion by allowing them to accumulate college credit (sometimes up to a year's worth) while still attending high school. This eventually saves money for students, parents and the state and federal government in tuition and financial aid (Bailey et al., 2002). Dual enrollment is also an effective tool in increasing access to higher education for minority and underachieving

students. However, funding for these programs is often too easily diverted to other budgetary line items when states are facing fiscal pressures. Because dual enrollment students are not full-time college students or full-time high school students, they tend to lack effective advocates at the state level when hard choices need to be made (Bailey et al., 2002).

Based on a limited number of studies of dual enrollment programs in Arizona and Utah, research suggests that dual enrollment may have the potential to improve preparation for college and motivate students to take more rigorous courses (Bailey et al., 2002). Dual enrollment also shifts the focus of occupational education to the postsecondary institutions while making those courses available to high school students. This provides an early warning mechanism to signal whether students are prepared for college and acclimates students to the college environment while they are still in high school. Dual enrollment may also do the opposite of the intended functions of increasing college access, enrollment, and retention, but it still performs a valuable role in helping some students decide earlier that college is just not for them. Instead, these students can begin to focus their energies on occupational or technical courses available in their high schools, apprenticeship training, or training for industry-based certifications which can result in increased earning power when they graduate (Bailey et al., 2002). All of these reasons are valid arguments for continuing to grow dual enrollment programs across the country. But, as fiscal pressures continue, many states are experiencing budget shortfalls and cutting or eliminating many programs. As a result, policy decisions detrimental to students participating in dual enrollment affect individual students. The collective workforce of the United States suffers as well in terms of skills levels and college graduation rates.

Even though there is much information from many sources regarding the benefits dual enrollment provides students, high schools, postsecondary institutions, and society as a whole,

the High School Leadership Summit (2003) recommends that there are still more questions about dual enrollment that need to be answered. There is not enough known about how many and what types of students participate in dual enrollment. Research needs to discover what program features are most common in dual enrollment programs and determine whether dual enrollment efforts support transition and persistence of students in postsecondary education. Finally, states must be clear about how their policies influence program structures and practices.

An extensive study of dual enrollment in the Technical College System of Georgia (TCSG) addressed these four concerns regarding dual enrollment. The study undertaken by the University of Georgia, with funding by the TCSG, examined whether "credit based transition programs facilitated college access and success for students who participated in them" (Lynch, Harnish, Fletcher, Thornton, Thompson, 2006, p.1). The study focused on dual enrollment students enrolled in the 33 technical colleges in the TCSG system in 2001-2004 (Lynch et al., 2006). The findings of the study were based on survey results from technical college administrators, high school administrators, and instructors and noted four primary attributes of dual enrollment that influenced student decisions about postsecondary education. Career and life awareness and exploration resulted in increased college interest for most students. Preparation for employment enabled students financially and motivated them to attend college. Dual enrollment affected students' attitudes towards furthering their education, helped them connect the idea of college with their career aspirations, increased their self-confidence, and influenced their decisions to attend college. And finally, such programs encouraged students to prepare for college entry, progress, and success.

Based on student interviews, the study found three more impacts that were most pronounced. Students used dual enrollment for purposes of career awareness and exploration.

They saw dual enrollment as workforce preparation (learning skills to get better jobs so they could work while attending college). And students cited dual enrollment as an alternative to dropping out of school. Nearly 75% of high school administrators said that dual enrollment contributed to high school completion for more students. Clearly this study showed the benefits of dual enrollment in motivating more students to pursue postsecondary education, increasing access to postsecondary education for more students who might not otherwise pursue it, encouraging more students to enroll in technical colleges after graduation, giving students a "head start" on college programs, and allowing students to take courses of interest to them that might not be offered by their high schools (Lynch et al., 2006). The Lynch study addressed the impact of dual enrollment through interviews with administrators, teachers, and students. What is also needed is to survey students to determine if their motivations to participate in dual enrollment have any relationship to their postsecondary aspirations, this is what this research study attempted to do.

This study also addressed some barriers to dual enrollment for high school students. Admission requirements may keep some students from taking dual enrollment classes, with college entrance test requirements being cited as the most important factor. Some students may not be aware they are able to participate. There may sometimes be difficulty in scheduling dual enrollment courses so that they do not conflict with the courses students need for high school graduation. Finally, there is often a need for transportation for classes not held on the high school campus (Lynch et al., 2006). But the study also provided recommendations for addressing these barriers. First, admission requirements need to be more flexible to allow "borderline" and "at risk" students to be admitted with additional support. Second, the under representation of Hispanics in dual enrollment and black males in college attendance needs to be

understood and addressed so these two groups can more actively participate (Lynch et al., 2006). Third, policy issues need to be addressed, including the fact that there is no state agency in charge of dual enrollment in Georgia in any centralized way; therefore, there is little evidence of consistent oversight of dual enrollment programs at the state and local level. Fourth, transferring dual enrollment credits earned in high school into programs at the USG level is not seamless and the process needs to be revised. Finally, there are concerns about instructor qualifications at the state level, though at the local level both high school administrators and technical college administrators feel that qualifications are sufficient (Lynch et al., 2006).

This extensive study clearly addressed the issues brought up by the High School Leadership Summit in 2003, but more research, especially at the national level, must be conducted. There is also a need for additional research that addresses student experiences related to dual enrollment. The present research study addressed a third concern regarding whether efforts make a difference in the transition and persistence of students in postsecondary education by looking at the relationship dual enrollment has on the postsecondary aspirations of its participants. While dual enrollment clearly has much to offer students and the educational system, there are certain disadvantages that must be addressed.

Disadvantages of Dual Enrollment Programs

According to Bowell (2001b), critics of dual enrollment programs cite three main questions regarding the validity of dual enrollment programs. First, the rigor of dual enrollment courses that are not taught on the college campus has been questioned. Critics are concerned that some states allow high school instructors who may not meet the credentialing requirements of the postsecondary institution to teach courses on the high school campus. This can negatively impact the transferability of courses to other postsecondary institutions (Boswell, 2001a).

Second, the transferability of courses from the two- year to the four-year institution may be an issue. While many dual enrollment courses may be eligible for transfer to the local community college, transferability to the four-year level may not be as seamless, presenting a problem for students if they transfer to a university at a later date (Boswell, 2001a). Third, many state fiscal agents are worried about "double dipping" which occurs in states where both the college and the high school are allowed to collect state aid for dual enrollment students. Fourth, there has been a lack of consistency in evaluating dual enrollment programs. Studies on dual enrollment tend to focus more on student satisfaction than educational outcomes. One organization assisting in addressing this need for research is The National Alliance of Concurrent Enrollment Partnerships (NACEP), established in 1999. The primary role of this organization is to establish and promote national standards as well as conduct research. Once a research methodology has been established, more rigorous evaluation of dual enrollment programs can be conducted and more significance can be attached to the findings (Fontenot, 2006). Finally, the issues of admission requirements for dual enrollment programs must be addressed in order to expand dual enrollment programs to include all students, not just those who are "college bound" (Kirst & Venezia, 2001). Increasing access to underrepresented students was a critical concern of the present study.

Underrepresented Students and Access to Dual Enrollment Programs

When asked about the phrase "accelerated learning" in high school, University of Maryland Baltimore County president Freeman A. Hrabowski III replied, "The outcome may be acceleration for some people, but the goal should be strengthening education for all of our children." Given this rationale, dual enrollment programs should focus not only on college-preparation students, but also, and perhaps especially, on students from disadvantaged or

underrepresented groups (Kirst & Venezia, 2001; Olson, 2006). However, according to Waits, Setzer, & Lewis (2005), the distribution of dual enrollment courses at the secondary level is uneven. Dual enrollment courses are more available to students attending medium to large high schools (500 students or more) than smaller ones or students attending high school in towns or suburban areas rather than rural or urban areas. Further, students attending high schools with the largest minority enrollments were less likely to have access to dual enrollment programs than students attending less diverse schools. These results suggest that student opportunities to participate are not distributed equally; therefore, students with different demographic, geographic, and economic characteristics have different access and opportunity to be involved (Bragg, 2006). Bragg (2006), in her extensive study of dual enrollment programs across the United States, found that 28 states made an effort to address the educational needs of underserved students with dual enrollment programs; eleven of those states made a special effort to extend these programs to low income students, while ten states specified racial and ethnic minority students. A few states identified other populations, such as urban and rural students, youth at risk of dropping out of high school, and second language learners. Compared to the other academic pathway models Bragg (2006) examined in her study, tech prep and middle college or early college high school, dual enrollment was not as likely to be used by states as a way to increase access to traditionally underserved student groups.

With the recent growth in school-based dual enrollment programs, the opportunity to earn college credit in high school should no longer be limited only to students who are in the academic elite, those who can afford high-quality private high schools, or students who attend well-funded public schools (Hoffman, 2003b). Dual enrollment can offer even under-achieving students a chance to earn college credit. Proponents of dual enrollment programs argue that this

last group may benefit primarily because they are bored in class or see little or no relationship between their achievement in high school and their future success. Dual enrollment courses can provide academically rigorous and engaging courses to these students, and that may promote hard work and high achievement (Bailey et al., 2002). Providing academic rigor for students who may not have otherwise been challenged may contribute to their future college success. In 2001, almost two-thirds of high school graduates entered post-secondary education immediately after high school, but only 33% of graduates earned a bachelor's degree (National Center for Education Statistics, 2002 as cited in Bailey et al., 2002). Dual enrollment programs could perhaps increase the number of college students who persist to graduation.

Dual enrollment programs not only give both high-achieving and under-achieving students the opportunity to participate in college, they also give secondary schools which may lack financial resources the ability to provide this experience for their students. Due to budgetary pressures, high schools are often forced to limit the courses they offer, especially in the areas of science and technology and upper level-courses. Instead, they offer courses that are often less expensive and less rigorous (Bailey et al., 2002). Dual enrollment can be used to supplement high school instruction and potentially increase student choice and student motivation by offering more interesting and challenging courses that will aid in student success in college (Bailey et al., 2002). These benefits are of particular importance to vocational students who are often not afforded access to these opportunities due to many secondary schools increased emphasis on academics. Courses that are lab-intensive and in need of constant updating, such as automotive technology, printing, and welding, are being phased out and replaced with more traditional academic coursework (Bailey et al., 2002). Dual enrollment programs implemented by community and technical colleges can give access to students who do

not have the opportunity for vocational education at their high schools. This, in turn, increases student choice and opportunities to experience both academic and technical courses. It also may lessen the likelihood that these vocational students will simply leave the academic arena after high school before receiving valuable workforce training. According to the National Commission on the High School Senior Year's 2001 report *Raising our Sights: No High School Senior Left Behind,* to improve rigor in high schools and to provide alternatives, dual enrollment options with local colleges and technical institutes should be encouraged for all. According to the commission, "if a student is ready for postsecondary work at age 16 or 17, then they should be able to pursue it," and there are some model programs across the country that are taking this statement to heart.

The United States Department of Education (DOE), office of Vocational and Adult Education, examined ways that credit-based transition programs such as Tech Prep, dual or concurrent enrollment, International Baccalaureate (IB), and middle college high schools may help middle-and low-achieving students enter and succeed in college (Hughes, Karp, Fermin, & Bailey, 2006). This study examined five sites: a middle college high school in California, an IB program in Minnesota, a dual enrollment program in New York City, a technically oriented dual enrollment program in Iowa, and a Tech Prep program in Texas. The findings from this study highlighted four key features: student recruitment and selection processes, curricula, support services, and data collection and use. These key features were present at all of the case study sites, and practices were identified that seemed most promising in meeting the needs of middle- and low-achieving students and addressing the barriers to implementing them. This study formed recommendations based on these four key features. All dual enrollment programs should develop multiple avenues to ensure that all students learn of the availability of dual enrollment

opportunities. They should develop a program culture that supports all students from different backgrounds (academic and personal) and encourages them to participate. Any dual enrollment program and curriculum should be carefully structured with an emphasis on access. The roles of and benefits to both high schools and colleges should be clearly established. Dual enrollment programs should support a broader integration between secondary and postsecondary sectors. There should be an effort to simplify credit–earning and credit-transfer processes. And all such programs should support data collection and conduct consistent and on-going outcome analysis (Hughes et al., 2006).

As part of her dissertation at the University of Illinois at Urbana-Champaign, Kim (2006) conducted a thorough review of the literature on dual enrollment programs to identify their impact on student outcomes. Her results parallel those of Bailey and Karp (2003) who examined 45 articles and reports and found few studies offer rigorous evidence of the impact of dual enrollment on student outcomes. Numerous studies claim that, relative to non-participants in dual enrollment, students who participate are better prepared for college, show lower remedial credit hours earned, demonstrate superior academic performance in college, earn more college credits, and excel in the return rate for the second year of college; however, many studies do not account for the difference in academic characteristics, aspirations and motivations of dual enrollment participants relative to non-participants (Bragg, 2006). This study attempted to address this gap in the research by sampling a diverse group of students participating in dual enrollment with a technical college. The focus was on students' motivations for participating and how those related to changes in postsecondary aspirations. The data released from this study showed that dual enrollment programs can provide access to all students, not just high-achievers, and increasing access means that all students can benefit from the many advantages of dual

enrollment programs. The current study examined students participating in dual enrollment programs at a technical college in Georgia, and assessed their postsecondary aspirations from the beginning to the end of the program.

Summary

Research in the field of dual enrollment is typically undertaken to promote the practice as a successful model for high school to college transition. The literature is very limited regarding the relationship between students' motivations for participating in dual enrollment, their achievement levels, and changes in postsecondary aspirations. More specifically, the research does not adequately address a diverse group of students participating in a program at a technical college. The purpose of this study was to measure students' postsecondary aspirations at the beginning of the dual enrollment program and again at the end. Specifically this study measured aspirations of students enrolled in dual enrollment programs at a technical college in Georgia. The principal hypothesis was that participation in dual enrollment was related to students' aspirations to enter postsecondary education following high school graduation. This study looked at a technical college dual enrollment program specifically to determine what, if any, relationship it had on students' postsecondary aspirations. First, it is necessary to describe the methodology used in the study.

Chapter III

STUDY METHODS

Introduction

This chapter will describe the methods used to answer this study's research questions. Included is a description of the data sources and collection methods used to obtain the sample and a discussion of how the sample was selected. Later sections include an explanation of how the survey instrument was developed and piloted as well as how the qualitative data were collected. The statistical analysis procedures used in the study are described and justified. The final section of this chapter discusses the limitations of the study.

Research Design Overview

The purpose of the study was to measure dual enrollment students'motivations and academic aspirations and perceptions of higher education. Students' motivations and postsecondary aspirations were measured at the beginning of the dual enrollment program and then again at the end. The research was guided by two over-arching questions:

1) How, if at all, have students' postsecondary educational aspirations changed since beginning the dual enrollment program?
2) What demographic factor or factors related to students' reasons for enrolling in the dual enrollment program are related to changes in postsecondary education aspirations?

This mixed-methods study used quantitative data from a survey instrument as well as qualitative data, including student journals. The survey instrument was developed to determine the reasons

students participate in dual enrollment and whether there is a relationship between reasons for participating and postsecondary educational aspirations. Demographic information was also collected from the survey instrument and reported in aggregate form. This study collected data on students' age, race/ethnicity, grade level in high school, gender, and high school grade point average to determine if aspirations were a function of participation or some other variable.

Conceptual Framework

The purpose of the study was to measure dual enrollment students'motivations and academic aspirations and perceptions of higher education. Students' motivations and postsecondary aspirations were measured at the beginning of the dual enrollment program and then again at the end. As discussed in Chapter Two, there has been a considerable amount of empirical work conducted on dual enrollment, especially regarding dual enrollment programs as successful models for high school to college transition. Most research measures such indicators as increased grade point average (GPA) and retention and graduation rates and acceleration of completion of the postsecondary degree. Little research has been conducted on the motivations students' have for participating in dual enrollment as well as students' postsecondary aspirations both before and after participating in a dual enrollment program. The purpose of this study was to examine how students' postsecondary aspirations changed during the course of their participation in a dual enrollment program. Thus, the study subjects themselves reported before, during, and after the program their reasons for participating in dual enrollment, rated the importance of those reasons, and measured their perceptions after completion of their programs. This study used students enrolled in a dual enrollment program at a technical college in Georgia where the researcher is an employee.

Emprical research has shown that students cite many reasons for participating in dual enrollment programs. Most include the opportunity to take courses not available in high school, to get credits that apply to a college education, to get a start on career training, to save on the cost of taking college courses, to get high school credit for college courses, to explore a career direction, and to predict if they will do well in college. This study considers students' reasons for participating, but analyzed their postsecondary aspirations as well, using both quantitative and qualitative methods.

The principal hypothesis of this study was that participation in dual enrollment may influence students' aspirations to enter postsecondary education following high school graduation. Study subjects were participating in a dual enrollment program at a two-year technical college, located in a medium sized city in Georgia. The technical college is a unit of the Technical College System of Georgia, which includes 32 other technical colleges across the state. This particular technical college serves a six-county region that includes suburban as well as rural counties. The technical college has an enrollment of approximately 3,600 hundred students, 200 of whom are high school students participating in dual enrollment. The college offers Associate of Applied Science Degrees, Diplomas, and Technical Certificates of Credit (TCC) in technical areas such as automotive, welding, and cosmetolgy; business areas such as management, accounting, and financial services; and health science areas such as nursing, radiology, and dental hygeine. Dual enrollment students participate in TCC programs such as Nail Technician, Financial Services Specialist, Criminal Justice Intern, Certified Nursing Assistant, and Certified Life and Health Specialist. The courses study participants took are listed in Appendix H.

The technical college has articulation agreements with four school systems that are part of its six county service area. These four systems consist of a suburban district located fifteen miles from the city with an enrollment of approximately 10,000 students, a district located within the city with an enrollment of approximately 33,000 students, and two rural districts located thirty miles from the city with a combined enrollment of 10,000 students.

The demograpic make-up of the students attending the technical college is fairly similar to the demographic make-up of the students enrolled in the high schools in its six county service area. Of the 3,600 students enrolled at the technical college, the majority are female (67%), and the racial/ethnic makeup of the college is diverse and representative of the high school population in the technical college's service area. The following tables delineate the demographic make-up of students enrolled at the technical college in the fall of 2007 and the demographic make-up of students enrolled in the public school system in the 2007-2008 school year.

Table 3.1

Race/ethnicity/gender of Students Enrolled at the Technical College in the Fall Term 2007 (N=3,610)

Race/ Ethnicity	**Percentage**	**Gender**	**Percentage**
African-American	45%	Female	67%
White	45%	Male	33%
Multi-racial	4%		
Hispanic	3%		
Asian	2%		
American Indian	.5%		
Non-resident alien	.5%		

Source: Technical College System of Georgia, 2008

Table 3.2

Race/ethnicity/gender of Population of Students Attending School Districts, in the 2007-2008 Academic Year, from which Dual Enrollment Sample was drawn (N=11,535)

Race/ Ethnicity	**Percentage**	**Gender**	**Percentage**
African-American	54%	Female	48%
White	39%	Male	52%
Multi-racial	2%		
Hispanic	3%		
Asian	1%		
American Indian	1%		

Source: Georgia Department of Education, 2008

Implications of the demographic make up of the study participants will be discussed in Chapter 4 along with other desciptive date from the survey instruments. Following is an explanantion of the development of the survey instrument.

Instrumentation

This study used a survey instrument designed and piloted by the researcher. The questions on the survey instrument were developed based from issues and questions raised in the existing literature on dual enrollment. Both general research into dual enrollment programs and research specific to the aims of this study were reviewed.

Search for Existing Instruments

Empirical research regarding dual enrollment was reviewed, and recent survey research utilized ideas from two instruments, The Running Start Survey and the Career Academy Student Questionnaire. Questions were developed by using issues raised in the two reports and not direct questions from these two documents.

Initial Instrument Development Activities and Pilot Study

The two instruments initially had a total of fifty items (25 initial survey items and 25 final survey items). The first question on both surveys consisted of eight items related to reasons for selecting the dual enrollment program which required respondents to circle one of five responses to indicate how important each reason was in their decision to do dual enrollment: Not Important, Important, Neutral, Very Important, and Extremely Important. The remainder of the questions on both survey instruments asked demographic information and educational background information. A panel of experts reviewed the list and made refinements to the questions and how they were worded. Following this process, 22 items were kept in the instruments (17 initial survey items and 5 final survey items), and a both surveys were piloted with 24 students in the fall of 2007 to determine instrument validity and reliability. The results of the pilot survey led to a rewording of three questions on the initial survey for clarity. No items were changed on the final survey following the pilot. The final survey instruments were approved in December 2007 and were administered to dual enrollment students at the beginning of the spring semester 2008. Copies of the survey instruments are included in Appendices A and B.

Population and Sample

The survey instrument was administered to 104 participants enrolled in dual enrollment programs at a technical college in Georgia. The first survey was administered at the beginning of the dual enrollment program (February 2008), with students enrolled in one or more courses, and the final survey instrument was administered to 98 participants at the end of the dual enrollment program (May 2008). The six participants who did not participate in the final survey had withdrawn from the dual enrollment program.

Approval of survey instruments and consent forms was given by the Institutional Research Board prior to soliciting research participants. A copy of the approval and consent forms are located Appendices D and E. Both participant and parental consent (if a participant was under eighteen years of age) were secured prior to administration of the initial survey. This consent was obtained by putting consent forms in the students' application packet they were required to fill out to participate in the dual enrollment program. Initially 188 consent forms were given to dual enrollment participants, and of those 104 participants gave consent. The initial 200 participants were students who had been selected to participate in the dual enrollment program and were enrolled at eleven high schools from the four school districts described previously. The majority of these students were seniors (141), female (133), African-American (116). They were attending high school in the city school district (130) and taking courses in the college's school of business (180). Of the 104 who gave consent, the majority were also seniors (58), female (53), African-American (53), attending high school in the city school district (60), and taking courses in the college's school of business (82). The following tables demonstrate the demographic make-up of the initial 200 dual enrollment student as well as the demographic make-up of the 104 dual enrollment students who consented to participate in the study. The demographic make-up of the 98 who completed the study will be presented in Chapter 4.

Table 3.3

Race/Ethnicity/Gender of Students Enrolled in the Dual Enrollment Program at the Technical College in the Winter and Spring Terms in 2008 (N=200)

Race/ Ethnicity	**Number**	**Gender**	**Number**
African-American	116	Female	133
White	62	Male	67
Multi-racial	10		
Hispanic	8		
Asian	1		
American Indian	3		
Non-resident alien	0		

Source: Technical College System of Georgia, 2008

Table 3.4

Race/Ethnicity/Gender of Students Enrolled in the Dual Enrollment Program at the Technical College in the Winter and Spring Terms in 2008 who gave Consent to Participate in the Study (N=104)

Race/ Ethnicity	**Number**	**Gender**	**Number**
African-American	61	Female	53
White	26	Male	51
Multi-racial	8		
Hispanic	6		
Asian	0		
American Indian	3		
Non-resident alien	0		

That is, 53% of African American students, 42% of White students, 80% of Multi-racial students, no Asian students, and all American Indian students enrolled in the dual enrollment program consented to participate in the study. Forty percent of female students and 76% of male students in these programs consented to participate in the study.

Table 3.5

Type of School System Students Enrolled in the Dual Enrollment Program at the Technical College in the Winter and Spring terms 2008 Attended (N=200)

School system	Number
City	130
Suburban	30
Rural	40

Table 3.6

Type of School System Dual Enrollment Students who Consented to Study Attended (N=104)

School system	Number
City	66
Suburban	20
Rural	18

Fifty-one percent of city high school students, 67% of suburban high school students, and 45% of rural high school students in dual enrollment consented to participate in the study.

Table 3.7

Grade Level of Students in the Dual Enrollment Program at the Technical College in the Winter and Spring Terms (N=200)

Grade Level	Number
Junior	55
Senior	141

Source: Technical College System of Georgia, 2008

Table 3.8

Grade Level of Students in the Dual Enrollment Program at the Technical College in the Winter and Spring Terms who Consented to Participate in Study (N=104)

Grade Level	Number
Junior	40
Senior	64

Seventy-three percents of juniors and 45% of seniors in dual enrollment participated in the study.

Table 3.9

Types of Course Students Enrolled in the Dual Enrollment Program at the Technical College were Enrolled in Winter and Spring Terms 2008 (N=200)

Course Type	Number
Business	180
Health	26

Source: Technical College System of Georgia, 2008

Table 3.10

Types of Course Students Enrolled in Winter and Spring Terms 2008 who Consented to Participate in Study (N=104)

Course Type	Number
Business	78
Health	20

When course type of participants was measured, 43% of students in business programs and 77% of students in health programs consented to participate in the study. The possible implications of these respondent rates will be examined later in this report.

Once consent forms were collected, times were scheduled for the researcher to come into the dual enrollment class to administer the first survey. The majority of dual enrollment students were taking classes on their high school campuses, and, therefore, permission was given by the high school principals and teachers before administering the surveys. The classes that were held on the college campus only required permission from the college instructor.

The first survey instrument was administered to 104 participants at the beginning of the school term (early to mid February 2008). All the surveys were administered in the classroom and each participant took approximately twenty minutes to fill out the survey. Participants were required to write their names on the survey instrument so results could be compared with the final survey. Each student was assigned a number and that number was used when running the statistical data. The researcher at this point stressed that participation was voluntary and that participants could refuse to participate or stop taking part at any time without giving any reason and without penalty. Participants were told they could ask to have information related to them returned, removed from the research records, or destroyed. They were also told that they would receive no compensation for their participation and would not benefit directly from this research. The participants were also informed that identifiable information obtained in connection with this study would be kept confidential unless required by law and results would be reported in aggregate form. All results were kept in a password-protected computer to which only the researcher had access.

Of the 104 students who consented to participate in the quantative portion of the study, sixty were chosen to participate in the qualitative portion of the study. To identify participants, the researcher selected students who participated in the wider dual enrollment program and who were first-generation college students. Of the sixty chosen, 33 consented to participate in the qualitative portion of the study. Of the 33 participants who gave consent to provide journals, 22 were African-American, and 11 were White, 30 Female and three Male. All 33 participants were first time dual enrollment students and 14 were first-generation college students, having no parent or guardian who graduated from college with an associate's degree or higher. The students were asked to respond in writing to a series of questions.

The purpose of this portion of the study was to have the students themselves reflect upon their' experiences in a dual enrollment program and their interest in postsecondary education. Their reflections were then analyzed by to determine what, if any, relationship might exist.

Data Collection and Data Analysis

After all initial survey instruments were completed; numbers were assigned to each participant and inputted into an Excel spreadsheet with the students' assigned numbers and their responses to the survey items. At the end of the school term (early to mid-May 2008), instructors were contacted to administer the final survey to the 104 participants. Of those 104 participants, six had withdrawn from the dual enrollment program during the school term and were, therefore, not eligible to participate in the final survey. Ninety-eight participants completed both survey instruments.

Responses to all demographic and Likert items on the survey instruments were categorical, and therefore dictate categorical techniques for summarizing and analyzing the data. Results from both administrations of the survey instrument were analyzed and compared using the

Statistical Package for the Social Sciences (SPSS). With SPSS, frequency tables were used to tally responses to items on the survey instruments and crosstabulation tables to identify relationships among the categorical variables under investigation. A contingency table was a useful tool for identifying patterns of responses within the table and relationships between the categorical variables. Chi-square test (x^2) was used as a correlational probe to determine whether a statistically significant relationship existed at the .05 alpha level between two variables of each table (Huck, 2000).

Chi-square analysis was chosen to investigate whether there were links among demographics, postsecondary aspirations, and motivations for enrolling in the dual enrollment program. For example, the researcher was interested in whether students with a given motivation, such as "to get credit for college courses" or "to get a start on career training," were significantly more or less likely than students with other motivations, such as "my parents wanted me to participate" or "to save the cost of taking college courses," to have changes in postsecondary aspirations from the beginning to the end of the dual enrollment program. The researcher also wanted to determine if students with certain demographic characteristics, in particular race/ethnicity and gender, were also significantly more or less likely to have changes in postsecondary aspirations from the beginning to the end of the dual enrollment program.

Research questions were also answered using descriptive statistics. Those results will be discussed in Chapter 4.

This study also used "basic or generic" qualitative research (Merriam, 1998, p. 11). According to Merriam, this is the most common technique used in educational research. Researchers who conduct these types of studies seek to discover and understand a "phenomenon, process, or the perspectives and world views of the people involved" (p. 11). Because students'

experiences in the dual enrollment program and how those experiences shaped their views of postseconday education and their academic aspirations was of interest, this type of qualitative research seemed most appropriate. Qualitative research also values small sample sizes in which the research participants are purposefully chosen (Patton, 1990). Patton states this purposeful sampling yields "information-rich cases" (p. 169), which allow the researcher to understand the issue in depth. Students chosen to participate in this part of the research study were asked to provide either email or in-class journals. Participants were given four questions every other week during the school term for a total of sixteen questions. All 33 students answered the journal questions; however, some answers were duplicate in nature for some respondents. Information on all participants gleaned from the journals was kept confidential, and only the researcher had access to the data during the study.

Analysis of the data generated followed the steps outlined by Marshall and Rossman (1989) to include: "organizing the data; generating categories, themes, and patterns; testing the emergent hypotheses against the data; and searching for alternative explanations of the data" (p. 114). Data were analyzed for recurring themes or patterns and then coded to help focus the study. A possible link between participation in dual enrollment and academic aspirations was explored and evaluated. Data from both the survey instrument and from the journals were analyzed in conjunction to further answer this study's research questions.

Researcher Bias

The researcher in this study is as an employee in the Technical College System of Georgia (TCSG) and believes in the organization's commitment to dual enrollment programs. This interest in dual enrollment programs comes from daily interaction with high school students who become technical college students when they participate in dual enrollment courses at the

college. Anecdotal data have also been collected regarding the matriculation rates of these students into the technical college. Many of these students usually begin courses with the technical college either the summer or fall quarter after their high school graduation. Determining if their experience in the program affected their decision to attend the institution is of vital interest to admissions and retention efforts. Perhaps this research will ultimately result in a better understanding of the postsecondary intentions of these students as well as the reasons why they chose to participate in the program.

Limitations of the Study

Because this study was a sample of convenience from one of the thirty-three technical colleges in Georgia, the findings may not be generalizable to the TCSG system as a whole or to any other group. Although statistical inference was not possible, perhaps logic will allow educators to make use of the findings. Also the study specifically examined data on students' intentions to attend postsecondary education; there may be other factors which influenced students' decision to attend. To address this limitation, the study used qualitative data (journals) to evaluate the student's postsecondary aspirations and how they may have related to participation in dual enrollment.

Chapter IV

QUANTITATIVE RESULTS

Introduction

The purpose of the study was to measure dual enrollment students'motivations and academic aspirations and perceptions of higher education. Students' motivations and postsecondary aspirations were measured at the beginning of the dual enrollment program and then again at the end. The research was guided by two over-arching questions:

- How, if at all, have students' postsecondary educational aspirations changed since beginning the dual enrollment program?
- What demographic factor or factors related to students' reasons for enrolling in the dual enrollment program are related to changes in postsecondary education?

This chapter presents quantitative results of the survey instrument administered to dual enrollment participants.

Descriptive Statistics

Demographic and Educational Characteristics

The study's population consisted of high school students participating in a dual enrollment program with a technical college located in Georgia. Approximately 200 students participate annually in this program and of those 200, 104 gave consent to participate; however, only 98 took initial and final surveys during the dual enrollment program. Of the 98 who participated in the study, the majority were female (53) and African-American (56). The

demographic make- up of these participants was similar to the make- up of the technical college's dual enrollment population as well as the school districts overall student body as presented in Chapter 3.

Table 4.1

Race/ethnicity/gender of Students Enrolled in the Dual Enrollment Program at the Technical College who Participated in the Study (N=98)

Race/ Ethnicity	**Number**	**Gender**	**Number**
African-American	56 (57%)	Female	53 (54%)
White	25 (26%)	Male	45 (46%)
Multi-racial	8 (8%)		
Hispanic	6 (6%)		
Asian	0		
American Indian	3 (3%)		
Non-resident alien	0		

The majority of study participants also reported they were eligible to receive free or reduced price lunch (60) in high school. This is an indicator of socioeconomic status in the secondary school system. This reported data is higher than the data from the Georgia Department of Education (GDOE) for the school systems represented in this study. This data is presented in tables 4.2 and 4.3.

Table 4.2

Respondents Reported Eligibility for Free/Reduced Price Lunch in High School (N=98)

Free/Reduced Lunch	Number
Yes	60 (61%)
No	30 (31%)
Blank	8 (8%)

Table 4.3

Georgia Department of Education Eligibility for Free/Reduced Price Lunch in High Schools Represented in this Study for the 2007-2008 Academic School Year (N=11,535)

Free/Reduced Lunch	Number
Yes	5,674 (49%)
No	5,861 (51%)

Source: Georgia Department of Education, 2008

In addition to participant demographic data, participant educational data were also collected from the survey instrument. The majority of students (62) reported a 3.0 or better high school grade point average (GPA). Participants were not given the choice of choosing a GPA of 1.9 or below on the survey instrument because the high school and the technical college will not allow students to participate in dual enrollment unless they have at least a 2.0 high school GPA. The majority of participants (63) also reported being enrolled in a college prep or dual seal diploma program. Only 25 reported pursuing a tech prep diploma only. The College Preparatory (CP) Program requires 22 units, nearly all of which are in core courses. Completion of this program is signified by a high school diploma with a college preparatory seal. The

Technology/Career Preparatory (TC) Program requires 22 units, four of which are from technical or career-oriented subject areas. Completion of this program is signified by a high school diploma with a technology/career-preparatory seal. To receive both the College Preparatory (CP) and the Technology/Career-Preparatory (TC) seals, the Dual Seal diploma, a student must complete the requirements as specified for each seal. GPA data and program data are presented in Tables 4.4 and 4.5, respectively.

Table 4.4

Respondents Reported Grade Point Average (N=98)

High School GPA	**Number**
3.4 or above	24 (24%)
3.0-3.3	43 (44%)
2.5-2.9	25 (26%)
2.0-2.4	6 (6%)

Table 4.5

Respondents Reported Diploma Type (N=98)

Diploma Type	**Number**
Tech Prep	25 (26%)
College Prep	16 (16%)
Dual Seal	47 (48%)
Blank	10 (10%)

This reported information from study participants was comparable to the information gathered from 2007 graduates from participating high schools. The largest number of study

participants reported earning a dual seal diploma followed by TC and CP diplomas. This mirrors GDOE data which showed the largest number of graduates earning a dual seal diploma followed by TC and CP diplomas.

Table 4.6

Georgia Department of Education Reported Data on High School Diploma Type for High Schools Represented in this Study for the 2007-2008 Academic School Year (N=1,942)

Diploma Type	**Number**
Tech Prep	557 (29%)
College Prep	540 (28%)
Dual Seal	845 (43%)

Source: Georgia Department of Education, 2008

Respondents were also asked questions about their families' educational backgrounds, including fathers' and mothers' highest level of education as well as fathers' and mothers' occupations. Occupational choices were offered in categories selected from an occupational career index resource. Based on participant responses, the top three occupations for fathers were skilled labor (43), business (21) and government (14); the top three for mothers were business (29), healthcare (18), and skilled labor (17). There were a number of fathers who had postsecondary experience with seventeen having some college, ten having earned a bachelor's degree, and seven having earned a graduate degree; however, the majority (61) had no postsecondary experience. Mothers also had some postsecondary experience as well, with nineteen having some college, 21 having earned a bachelor's degree, and nine having earned a graduate degree. Unlike the fathers, mothers were nearly equally divided between having no

postsecondary experience (46) and having some postsecondary experience and/or a degree (49). This information is presented in the following tables.

Table 4.7

Respondents Reported Educational Background Data for Fathers and Mothers (N=98)

Educational Level	**Father(N=98)**	**Mother(N=98)**
High School Dropout	24 (24%)	15 (15%)
High School Diploma/GED	37 (38%)	31 (32%)
Some College, did not graduate	17 (17%)	19 (19%)
Bachelor's Degree	10 (10%)	21 (21%)
Master's Degree	5 (5%)	6 (6%)
Ph.D. or Professional Degree	2 (2%)	3 (3%)
Missing	3 (3%)	3 (3%)

Table 4.8

Respondents Reported Occupational Data for Fathers and Mothers (N=98)

Occupation	**Father (N=98)**	**Mother (N=98)**
Skilled Labor	43 (44%)	17 (17%)
Business	21 (21%)	29 (30%)
Education	1 (1%)	7 (7%)
Government	14 (14%)	7 (7%)
Homemaker	1 (1%)	8 (8%)
Healthcare	0	18 (18%)
Retail	2 (2%)	6 (6%)
Missing	16 (16%)	6 (6%)

Dual enrollment participants in the research project were generally above average students, with the majority reporting a 3.0 GPA or higher, pursuing a college prep or dual seal diploma, rather than the tech prep only seal. The majority of the participants were also female,

African-American, in the 12th grade, and eligible for free/reduced price lunch. As far as parental educational level and occupation, the top three occupations for participants' mothers were business, healthcare, and skilled labor, and for participants' fathers, skilled labor, business, and government. Thirty-nine percent of participants were first-generation college students, i.e. they reported that either the mother or the father or both had a high school diploma or GED only.

Importance of Dual Enrollment Program

Next participants were given a list of reasons, taken from the research on dual enrollment, for participating in dual enrollment programs and asked in both the initial and final surveys to the importance of each reason in their decision to participate in dual enrollment. The initial survey used a Likert Scale with 1 being Not Important, 2 being Important, 3 being Neutral, 4 being Very Important, and 5 being Extremely Important. Both surveys used the same list of reasons, though the final survey asked students how useful the dual enrollment program had been in meeting the reasons listed with 1 being Not Useful, 2 being Useful, 3 being Neutral, 4 being Very Useful, and 5 being Extremely Useful. The results of this analysis showed that students who rated a particular reason as important on the initial survey also rated the dual enrollment program useful in meeting that reason on the final survey. The majority of respondents ranked the reasons as important, very important, or extremely important, there were very few not important and neutral responses. Also the majority of the respondents ranked the reasons on the final survey as useful, very useful, and extremely useful, there were very few not useful and neutral responses. Based on these results, the decision was made to report only on the importance of the reasons for selecting the program as asked in the initial survey. The researcher, upon consultation with the methodologist, decided to report responses as three groups: not important, important, and very

important (which was combination of very important and extremely important responses). Neutral responses were not reported.

The majority of respondents rated the following reasons as very important or extremely important in choosing to participate in a dual enrollment program: "to take courses not available in high school," "to get credits I can apply to college," "to get a start on career training," "to save on the cost of taking college courses," "to get high school credit for college courses," "to explore a career direction," and "to see if I will do well in college." Only one reason did not receive a majority of student responses: "my parents wanted me to participate." The results of this descriptive analysis are presented in Table 4.9.

Table 4.9

Summary Table of Reasons of Importance for Participating in Dual Enrollment Program (N=98)

Reason for participating	**Not Important**	**Important**	**Very Important/Extremely Important**
To take courses not available in high school	9 (9%)	17 (17%)	64 (65%)
To get credits I can apply to college	3 (3%)	4 (4%)	89 (90%)
To get a start on career training	0	4 (4%)	89 (90%)
To save cost of taking college courses	7 (7%)	5 (5%)	73 (74%)
To get high school credit for college courses	5 (5%)	11 (11%)	73 (74%)
To explore a career direction	2 (2%)	8 (8%)	73 (74%)
To see if I will do well in college	5 (5%)	13 (13%)	63 (64%)
My parents wanted me to participate	26 (27%)	12 (12%)	32 (33%)

Comparative Statistics

Postsecondary Aspirations

Changes in educational aspirations were measured from the initial and final survey instruments by comparing participants' responses on questions related to educational aspirations immediately following high school graduation. On the initial survey, 4% did not want to attend college, whereas the percentage on the final survey had dropped to 2%. On the initial survey, 31% wanted to attend a two-year community or technical college with 24% indicating this on the final survey. On the initial survey, 65% wanted to attend a four-year college or university and the number jumped to 74% on the final survey, a 9% gain. These results are summarized in Table 4.10.

Table 4.10

Respondents Reported Educational Plans after High School Graduation on Initial and Final Surveys (N=98)

Education Plan	**Initial Survey**	**Final Survey**
No college	4 (4%)	2 (2%)
Attend two-year college	30 (31%)	24 (24%)
Attend four-year college	64 (65%)	72 (74%)

An additional question on both survey instruments asked students to indicate the highest level of education they expected to pursue. The results represented a change in aspirations as follows: a decrease of five students who indicated high school diploma only, a decrease of one student who indicated vocational certificate or apprenticeship, a decrease of five students who indicated community or technical college, an increase of five students who indicated Bachelor's

degree, an increase of five students who indicated Master's degree, and finally an increase of one student who indicated Ph.D. or professional degree. The results are presented in Table 4.11.

Table 4.11

Highest Level of Education Respondents Expected to Complete on both Initial and Final Survey (N=98)

Highest level of Education Expected	**Initial Survey**	**Final Survey**
High School	9 (9%)	4 (4%)
Apprenticeship/Vocational Certificate	2 (2%)	1 (1%)
Community or Technical College	19 (19%)	14 (14%)
Bachelor's Degree	27 (27%)	32 (33%)
Master's Degree	19 (19%)	24 (24%)
Ph.D. or Professional Degree	22 (22%)	23 (23%)

On the final survey, participants were also asked if their experience in the dual enrollment program had influenced their decisions about whether to go to college and if the experience better prepared them for college. The results are in Tables 4.12 and 4.13.

Table 4.12

Reponses Regarding Dual Enrollment Program Influencing Decision to go to College (N=98)

Decision influenced by dual enrollment program	**Number**
Yes	71 (72%)
No	27 (28%)

Table 4.13

Responses Regarding Dual Enrollment Program better Preparing Respondents for College (N=97)

Dual enrollment program better prepared me for college	**Number**
Yes	81 (83%)
No	16 (16%)
No Response	1 (1%)

Findings related to the first research question have been addressed to this point. Now I will address the findings related to the final research question: What demographic factor or factors related to students' reasons for enrolling in the dual enrollment program are related to changes in postsecondary education aspirations? To address this research question, cross tabulations of data describing students' reasons for participating in a dual enrollment program as it related to changes in educational aspirations was analyzed. To aid in data analysis, the highest level of education students expected to attain was clustered into the following categories: less than four years of college (including high school, some classes after high school, but no degree or certificate, vocational certificate, or community or technical college degree), four years of college (bachelor's degree), and more than four years of college (including master's degree, or doctoral/professional degree). Students' responses from both surveys were cross tabulated with the level of importance attached to reasons for participating in a dual enrollment program as assessed on the initial survey. Those levels of importance were categorized as: not important, important, and very important.

A contingency table was a useful tool for identifying patterns of responses within the table and relationships between the categorical variables. A chi-square test (x^2) was used as a correlational probe to determine whether a statistically significant relationship existed at the .05 alpha level between two variables of each table (Huck, 2000). Chi-square analysis was chosen to investigate whether distributions of categorical variables (motivations and student demographics) differed from one another. The Chi-square statistic compared the tallies or counts of categorical responses between two (or more) independent groups and allowed the researcher to compare a collection of categorical data with some theoretical expected distribution. A chi-square probability of .05 or less is commonly interpreted by researchers as justification for rejecting the null hypothesis that the row variable is unrelated (that is, only randomly related) to the column variable. The findings from the chi-square analysis are presented below.

Chi-square Analysis

Importance of selecting a dual enrollment program

The importance of selecting to participate in the dual enrollment program as reported by participants and changes in their aspirations from the initial to the final survey were analyzed using crosstabulations and chi-square analysis. The importance reported on the initial survey was crosstabulated with the change in aspiration from initial to final survey and a chi-square analysis was performed on the distribution of the categorical variables to determine if the relationship was what would be expected. Based on the chi-square analysis on importance of reasons for selecting dual enrollment and the relationship to change in aspirations showed expected outcomes based on the chi-square analysis. The results of the crosstabulations and chi-square for importance of reasons for participating in dual enrollment (motivation) and change in

aspirations (level of education expected to achieve reported in both surveys) showed expected levels of outcomes for all reasons. The results are presented in the following tables.

Table 4.14

Crosstabulation Results from Motivation "to take courses not available in high school" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	4 (5%)	2 (2%)	2 (2%)	2 (2%)	3 (4%)	5 (6%)
Important	7 (9%)	3 (4%)	4 (5%)	8 (10%)	6 (7%)	6 (7%)
Very Important	11 (14%)	11 (14%)	17 (21%)	13 (16%)	26 (32%)	30 (37%)

Although the results showed that students who ranked this reason as not important or important had little change in postsecondary aspirations during the program; students who rated it very important had some change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=4.269;df=4;p=.371) and the final survey (x^2=3.672;df=4;p=.452).

Table 4.15

Crosstabulation Results from Motivation "to get credits I can apply to my college education" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	2 (2%)	1 (1%)	0	0	1 (1%)	2 (2%)
Important	2 (2%)	1 (1%)	1 (1%)	3 (3%)	1 (1%)	0
Very Important	24 (25%)	15 (16%)	26 (28%)	28 (30%)	37 (39%)	44 (47%)

Although the results showed that students who ranked this reason as not important or important had little change in postsecondary aspirations during the program; students who rated it very important had some change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=3.315;df=4;p=.507) and the final survey (x^2=5.871;df=4;p=.209).

Table 4.16

Crosstabulation Results from Motivation "to get a start on my career training" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years final)**
Important	2 (2%)	1 (1%)	1 (1%)	1 (1%)	1 (1%)	2 (2%)
Very Important	28 (30%)	18 (19%)	25 (27%)	28 (30%)	36 (39%)	43 (46%)

Although the results showed that students who ranked this reason as important had little change in postsecondary aspirations during the program; students who rated it very important had some change in postsecondary aspirations at the more than four year level. There were no students who ranked this reason as not important. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=.651;df=2;p=.722) and the final survey (x^2=.096;df=2;p=.953).

Table 4.17

Crosstabulation Results from Motivation "to save cost of taking college courses" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	2 (2%)	1 (1%)	1 (1%)	1 (1%)	4 (5%)	6 (6%)
Important	2 (2%)	2 (2%)	2 (2%)	2 (2%)	1 (1%)	1 (1%)
Very Important	21 (25%)	15 (18%)	19 (27%)	24 (29%)	32 (38%)	33 (40%)

Although the results showed that students who ranked this reason as not important or important had little change in postsecondary aspirations during the program; students who rated it very important had some change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=1.863;df=4;p=.761) and the final survey (x^2=3.506;df=4;p=.477).

Table 4.18

Crosstabulation Results from Motivation "to get high school credit for college courses" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	1 (1%)	1 (1%)	2 (2%)	3 (3%)	2 (2%)	1 (1%)
Important	6 (7%)	3 (3%)	2 (2%)	4 (4%)	4 (4%)	4 (4%)
Very Important	20 (22%)	14 (16%)	22 (25%)	23 (26%)	31 (35%)	36 (40%)

Although the results showed that students who ranked this reason as not important or important had little change in postsecondary aspirations during the program; students who rated it very important had some change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=4.373;df=4;p=.358) and the final survey (x^2=2.593;df=4;p=.628).

Table 4.19

Crosstabulation Results from Motivation "to explore a career direction" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	1 (1%)	0	1 (1%)	1 (1%)	0	1 (1%)
Important	5 (6%)	1 (1%)	1 (1%)	3 (4%)	2 (2%)	4 (5%)
Very Important	17 (20%)	14 (16%)	23 (28%)	23 (28%)	33 (40%)	36 (44%)

Although the results showed that students who ranked this reason as not important or important had little change in postsecondary aspirations during the program; students who rated it very important had some change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=7.064;df=4;p=.133) and the final survey (x^2=.821;df=4;p=.936).

Table 4.20

Crosstabulation Results from Motivation "to see if I will do well in college" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	3 (4%)	2 (2%)	1 (1%)	2 (2%)	1 (1%)	1 (1%)
Important	6 (7%)	2 (2%)	4 (5%)	5 (6%)	3 (4%)	6 (7%)
Very Important	11 (14%)	9 (11%)	19 (23%)	21 (26%)	33 (41%)	33 (41%)

Although the results showed that students who ranked this reason as not important had little change in postsecondary aspirations during the program; students who rated it important very important had some change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=9.247;df=4;p=.055) and the final survey (x^2=3.057;df=4;p=.548).

Table 4.21

Crosstabulation Results from Motivation "my parents wanted me to participate" with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Level of importance of motivation	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Not Important	5 (7%)	2 (3%)	1 (1%)	7 (10%)	14 (20%)	17 (24%)
Important	7 (10%)	3 (4%)	2 (3%)	5 (7%)	3 (4%)	4 (6%)
Very Important	10 (14%)	8 (11%)	9 (13%)	10 (14%)	13 (19%)	14 (20%)

Interestingly, the results showed that students who ranked this reason as not important had some change in postsecondary aspirations during the program; whereas students who rated it important very important had little change in postsecondary aspirations at the more than four year level. However, the chi-square test indicated no relationship between the two variables on the initial survey (x^2=6.127;df=4;p=.190) and the final survey (x^2=5.352;df=4;p=.253).

Demographic information reported on survey instrument

Race/ethnicity data as reported on the survey instruments were compared to highest level of education expected on both surveys. The results are presented in Table 4.23

Table 4.22

Crosstabulation Results by Race/Ethnicity with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Race/ethnicity	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
American Indian	1 (1%)	1 (1%)	2 (2%)	1 (1%)	0	1 (1%)
African American	10 (10%)	7 (7%)	16 (17%)	18 (19%)	27 (28%)	28 (20%)
Hispanic	1 (1%)	0	3 (3%)	3 (3%)	2 (2%)	3 (3%)
Multi Racial	6 (6%)	3 (3%)	0	1 (1%)	2 (2%)	4 (4%)
White	29 (20%)	18 (20%)	5 (5%)	30 (32%)	9 (9%)	11 (12%)

Interestingly, the results showed that African American students had higher aspirations at the beginning of the program and also at the end than their White counterparts. However, the chi-square test indicated no significant relationship between the two variables on the initial survey (x^2=18.204;df=8;p=.020) and the final survey (x^2=7.118;df=8;p=.524).

Table 4.23

Crosstabulation Results by Gender with Respondents Reported Highest Level of Education Expected to Achieve on both Surveys (N=98)

Gender	**Level of Education Expected to Achieve (Initial and Final Surveys)**					
	Less than 4 years (initial)	**Less than 4 years (final)**	**4 years (initial)**	**4 years (final)**	**More than 4 years (initial)**	**More than 4 years (final)**
Female	8 (9%)	4 (4%)	20 (22%)	18 (20%)	25 (28%)	31 (35%)
Male	17 (19%)	9 (10%)	5 (6%)	12 (13%)	14 (16%)	15 (17%)

These results showed that female students had significantly higher aspirations at the beginning of the program and also at the end than their male counterparts. However, the chi-square test indicated no significant relationship between the two variables on the initial survey (x^2=12.553;df=2;p=.002) and the final survey (x^2=5.647;df=2;p=.059).

In addition to quantitative data, the survey instruments sought to elicit qualitative data on students' experiences with dual enrollment, asking that they keep journals, based on guiding questions developed by the researcher, throughout the term. Chapter 5 examines this data.

Chapter V

QUALITATIVE RESULTS

Introduction

There were 33 participants for the qualitative portion of the study, 30 females and three males. Students were asked to reflect upon their dual enrollment experience in a series of focused journal questions. The questions themselves forced students to connect the program experience to any aspirations they had about their future careers and/or college goals. The purpose was to measure dual enrollment students' motivations and academic aspirations as well as their perceptions of higher education. The relationship between experiences in the dual enrollment program and postsecondary academic aspirations was examined using quantitative measurements in the survey data in addition to qualitative data in the form of student journals. Analysis of the journals and the open-ended questions on the final survey instrument, as discussed in this chapter, revealed students' beliefs about the role of the dual enrollment program in three dominant areas: career preparation, college preparation, and college aspirations. Also journal entries from female and male participants were compared and the relationship to the quantitative data was examined.

The Role of Dual Enrollment in Career Preparation

On both survey instruments, participants were asked reasons why they chose to participate in a dual enrollment program and whether the program was useful in meeting those reasons they selected. In the survey responses, many students chose reasons for participating in the dual enrollment program that related to career preparation. Dual enrollment students in a technical college program were expected to have some career aspirations already, and the

question was designed to determine what connection students might see between their own goals and the experience of the dual enrollment program. This theme of career preparation was also present in the journals of the selected participants. The first set of journal items asked an open-ended question about why students chose the program. Many of the responses focused around career preparation or getting a job, either while students were still in high school or after graduation. For example, one Black female student wrote that she chose the dual enrollment program "because it would offer me the opportunity to get a better paying job or a job at AFLAC," while a White female student echoed that same theme, stating that she chose dual enrollment "so that I could be certified to work in a hospital this summer and further my knowledge in the health field." There were even students who were very specific in their career plans and goals, with one White female student's responding that she chose to participate in the program "to prepare for my future career which is a orthopedic surgeon."

The second set of journal questions, given to participants approximately four weeks into the start of the program, asked them if the dual enrollment courses as well as the college instructors were more challenging, more relevant, easier, or harder than their high school courses. Here the question was designed to push students toward considering postsecondary options as they related to the dual enrollment experience. Once again, students' responses supported the theme of career preparation as it related to the dual enrollment courses and the instructors in those courses. For example, one Black male student wrote, "I would say it is equally hard, but a lot more relevant considering it will actually help me in my future career," while another White male wrote "they [the courses] are more relevant because it is something I know I am going to use." Another White female student with a 4.0 GPA noted that the instructor "is making the information a lot more relevant to my specific career plans. She takes the time to

tie in everything she teaches on about the same level as my honors teachers." These responses supported the suggestion that dual enrollment programs may provide the necessary challenges in high school, especially during the senior year, that students need in order to succeed in college. In this set of responses, respondents focused more on preparation for their chosen career paths and many made references to the dual enrollment programs' preparing them for the real world. Students referred to their college instructors as helping give them a picture of what their career path will look like and, in many ways, preparing them for that path.

The third set of journal questions, given to participants approximately halfway through the program, asked how the dual enrollment courses were progressing as well as if students thought the courses were preparing them for the workforce. Their responses to these questions became even more focused and succint in terms of the theme of career preparation. For example, one White female student in Patient Care Assisting wrote that she was "learning more and more and we are getting ready to start clinical, so that's when the real learning starts," while another Black female student noted that "the courses are going good. We are almost complete. We have about four more weeks left. The last few things we will be doing in the course is doing our resumes and doing career searches, which I think will help us a lot once we get our certificate as a Certified Life and Health Insurance Specialist." This particular student was very aware of her plans as they related to a job and/or career.

In addition to classroom experiences related to career preparation, one Black female student noted the "hands on" preparation that dual enrollment programs foster, writing "I really do feel like this class is preparing me for a real job. We just visited the new AFLAC facility. I really liked it out there. The people that worked there sounded excited to have us there as if they would really be seeing us soon or again." Students wrote about visiting potential job sites to

learn about a particular job or career field. This included a visit to a large insurance company (AFLAC) and also visits to clinical sites such as a nursing home. These visits seemed to resonate with students, and in their journal entries they frequently referred to the direct experiences they had had and how those experiences would be useful to them in the future.

The final set of journal questions given at the end of the dual enrollment program asked participants if they believed that the dual enrollment courses had prepared them to go into the workforce, and the responses once again focused on the theme of career preparation and were much more specific than those students had given at the beginning of the program. As an example, a White female student whose reponses were vague at the beginning of the program wrote that "yes, the clinicals we go on and the skills we practice really help to prepare us for the workforce. We are placed in the nursing atmosphere and are able to practice our skills on real patients. Learning through experience is the best way for me to learn so this really helps." From these journal responses, it is apparent that most students who had stated that dual enrollment was important and useful in career preparation and career choice showed in their written journal submissions that they were connecting their dual enrollment experiences with their postsecondary career plans. It may be that students who originally expected dual enrollment to help them with their career aspirations were already poised to find that in their experience with the program. Though a causal connection cannot be verified here, it can be argued that these students were at least satisfied that their dual enrollment experience would be of value to them in their future career pursuits.

The Role of Dual Enrollment in College Preparation

On both the initial and final survey instruments, participants were asked reasons why they chose to participate in dual enrollment programs and whether the programs were useful. The

reasons associated with college preparation were also viewed as very important to most students on the survey instruments. This theme of college preparation was also present in the journals of the selected participants. The first set of journal questions, given to participants approximately two weeks into the start of the program, asked a pointed and open-ended question about why they had chosen their dual enrollment program. Students consistently connected their choices to their college aspirations. Some selected responses included students' general interest in college. One Black male student noted, "I chose to participate in the dual enrollment program because I wanted to take a college course to see how I would do in college." Others suggested dual enrollment might make the transition to college smoother, noting that the program might make it easier "to get college credit" or they enrolled "because it would be good for college." Another White female student saw dual enrollment as providing a "jump start" on a specific college program: "I wanted to have a chance to be ahead in my college medical class." Again, it was to be expected that dual enrollment students would be pre-disposed to have some aspirations about postsecondary education and training. While their responses here do not prove a causal relationship, students did seem to find the dual enrollment program relevant to their college plans.

The second set of journal questions, given to participants approximately four weeks into the start of the program, asked if the dual enrollment courses as well as the college instructor were more challenging, more relevant, easier, or harder than their high school courses. Clearly the question itself forced respondents to connect their dual enrollment experience to their perceptions of college generally. Most felt that the courses were more rigorous than their high school work. They generally responded to issues of testing, grading, attendance policies and subject matter. One White female student suggested that the dual enrollment class was

"probably a bit more challenging because it is based off a college rubric and grading scale. The class still has that need for initiative as my other high school classes do, but is has a lesser tolerance for absentees and missing work." This difference was again noticed by another White female student who argued that "It's a little harder but not much-the work is just different." Specifically, testing seemed to alert students to differences between college and high school. One White female student summed up that difference: "[T]hey don't tell you what is going to be on the test; some things may not even be on the test when you study everything." The challenge of dual enrollment courses was apparent to several respondents, though some felt that difference was a positive aspect of the program. One Black female student remarked that "[t]he dual enrollment courses are more challenging and interesting than my high school courses." And several students responded directly to the effect of having college instructors while still in high school courses. A Black female student noted that "[t]he instructor is easier to learn from than my high school teachers," while another Black female stated "[h]e makes things to the point where we understand the information all around." A White female student said the teacher was "[e]asier, not as strict. [She] treats us more like adults." This set of journal responses seemed to focus on the college courses' being more interesting, challenging and relevant. One male student described the class as easier but appeared to be referring to classroom experiences with the instructor, not necessarily to the content of the course. These responses by students seemed to confirm what the literature suggests, that dual enrollment programs are an avenue to provide more challenging and relevant courses to students who may be experiencing boredom with high school classes, especially in the senior year.

The third set of journal questions, given to participants approximately halfway through the program, asked how the dual enrollment courses were progressing, as well as whether the

classes seemed to be preparing them for postsecondary education. Following is a selection of responses that related to the theme of college preparation. Students generally agreed that the challenge was a positive experience and most regarded the classes as helping with college preparation. As one Black female student put it, “It’s going great. The test[s] are challenging but I’m getting used to it.” Here again, a White female student noted the hands on experience; “I have learned a lot through the projects and labs that will help me in the long run.” The students seemed to believe that dual enrollment was a good introduction to college work generally. One White female student claimed, “it is teaching us that college courses may require more effort than some of our high school courses. It is also teaching us how college professors will treat us.” Another Black male student said “it is teaching me and getting me ready for college.” For some students, dual enrollment was a route to aquiring skills and knowledge needed for college admissions, as well as developing specific study skills and habits for successful course work in the college environment. One White female student claimed that the dual enrollment program was “providing me with accurate information needed to succeed in college.” According to another, “they are preparing me for postsecondary education. I like the college environment. The class is improving my typing skills which will help me later if I choose to take more computer courses in college.” And again, a White female student referred specifically to her chosen program of study; “They definitely are helping me for my pre med directed college education. Courses such as basic nutrition and medical terminology are two important classes I will review in college and this dual enrollment class has already given me a brief knowledge on both matters.” This set of responses really seemed to focus on preparation, especially as it relates to how students believed they will be treated in college. Students seemed to feel they were getting a taste of what college will be like and what to expect from college

professors. One student, participating in the certified nursing assistant program, directly tied her dual enrollment experience to her future college plans. Whether the dual enrollment experience increased students' desire for postsecondary training cannot be determined from these responses. Still, it seems clear that students themselves felt dual enrollment had given them some experience with college, as well as tested their skills and habits in approaching college work.

The final set of journal questions, given at the end of the dual enrollment program, asked participants if they believed that the dual enrollment courses prepared them to go into college. The question was designed to push students toward examination of their perceptions of college as well as to elicit their aspirations regarding postsecondary education. Most agreed that the dual enrollment courses had prepared them for college. One White female student claimed "I believe the courses prepared me for college because it showed me what a college course would be like and the clinical hours will help me get into a P.A. program." The students seemed to feel better prepared for the college experience in general. According to one Black female student, "it helped out a lot, getting us ready for college." Another Black female student added," I think I'm more prepared for college than I was before." Not only did the students believe themselves better prepared, but some found that their overall attitudes had changed. One black female student recorded changes she had made as a result of her dual enrollment experience; "It did definitely help prepare me for college by keeping my head where it needs to be, improving my skills and making studying a more regular practice than usual. I appreciate being in the class, it was an opportunity to be one of the few that took the course, and I will take what I have learned to college with me!" Dual enrollment had given them greater confidence, as well as increased awareness of themselves as students, with one Black female student observing that the experience "has made me believe I can do well in college." Another Black male student

commented, “I can see where I stand in a college class.” This set of responses once again supported the notion that dual enrollment programs can not only help students receive high school and college credit for their academic transcipts, but also give them experience in a college classroom and the confidence that they can succeed in college when they enter after graduation.

The Role of Dual Enrollment in Influencing College Aspirations

At the end of the dual enrollment program, participants were asked open-ended questions on the final survey related to educational aspirations. Students were asked to respond to the following questions: Has your experience in this dual enrollment course influenced your decision to go on to college after high school graduation? And, if yes, how has it influenced your decision to go on to college? Responding to the first question, students considered their college plans and noted the impact dual enrollment had had. Responses included a better understanding of what to expect in college and greater confidence and increased engagement in approaching college work. One White female student noted that dual enrollment “gets me used to the college atmosphere.” Two Black female students felt that they were “less scared of going to college” and “more interested in what [they wanted] to do.” Most agreed that “this [experience] really does prepare me for college classes” and “showed . . . that I am ready to go to college.” Additionally, students responded that their college goals were clarified and their sense of what the college experience might be like was clearer after participating in dual enrollment. These changes included a sharpening of their career focus and a deepening of their awareness of having a “jump start” in terms of credit and cost. One Black female student commented that “because I found out what I wanted to do for a career, . . . this has made it seem much easier so I am going to go to college to attain my degree.” Another Black male student directly compared high school to college and commented that the dual enrolmment experience

had “influenced [him] to go on to college by a little experience that shows that college is not boring.” Or as another Black male student put it, “It gives me a little taste of college, and it tastes alright so I think college will be alright.” Students’ voices here indicate that they saw a connection between the dual enrollment experience and their plans for the future.

Most students saw a direct relation between dual enrollment and their subsequent preparation for college. One White female student felt that she could “apply what [she had] learned so far and [could] learn more in college.” Another Black female student “felt better prepared for new teachings, learning methods of a college atmosphere.” In addition to increased confidence and awareness, students reported that they thought more about their postsecondary options and directly tied that to their future careers. According to one Black male student, “it is vital to get my education and working skills to be successful in my career path.” For another White female student, dual enrollment “has opened my eyes on the opportunities that can be offered to me after college.” And another Black male student noted that “It shows me that there is more to life after high school and you shouldn’t just settle for a diploma.” Many cited enhanced goals and a better sense of possibilities. For one White male student, dual enrollment “showed me that college can take me many places in my future.” And several students echoed a similar view that “I would like to further my education,” “I know that I can do better for myself,” and “the more education I have the further I can go in life.” Dual enrollment didn’t just provide a psychological edge. At least one Black female student acknowledged the financial benefit to dual enrollment, noting “I will have help paying for college and it prepared me more for college.”

Additional questions were asked on the post-survey that 58 of the 98 surveyed answered affirmatively. The questions specifically addressed students’ perceptions of their preparation for

college at the end of their dual enrollment experience. The questions were: Has your experience in this dual enrollment course better prepared for you college? And, if yes, how has your experience in this dual enrollment course better prepared you for college? Most responses concerned students' awareness of and expectations for college, their reports of lessened fear and anxiety about college, and changes they had made in study habits and approaches to school work in general. As one Black female student reported, "You get the idea that college is not going to baby you. If you want that letter A grade you have to complete your work and get it done. Don't expect someone to do things for you. Depend on yourself, no one else. [Dual enrollment] [m]akes you a little more independent." With students' increased exposure to college requirements came an awareness of differences. Students noted that dual enrollment "gave me awareness of the way that college is and the difference in the teaching method" and reported that dual enrollment "has allowed me to see what it is like to be a college student. The work ethics and study habits were much more strict and taken seriously." They generally felt more "in the know" about what college might be like, responding that dual enrollment "has showed me how it will really be in college"and stating "I now know what to expect from a college." Increased awareness also seemed to lessen students' fears and anxieties. Most felt "prepared for challenging courses" and "[m]ore comfortable with college not scared to go off to college now." They also felt better prepared for the difference in college instructors as compared to their high school teachers. As one White male student put it, "[y]ou get used to a college teacher." Several students reported that the increased awarenss of college coursework also resulted in a change in their study habits. According to one White female student, "I learned to study better and more than I usually would study. This will definitely help me when I start in college." Another Black female noted that the dual enrollment experience "has prepared me to pay more attention and

take notes and to better manage my time." This last set of responses seemed to indicate that many of the students really got a feel for the college environment and how they will be expected to work in that environment. They felt challenged, treated more as adults and more independent and confident. These traits were more evident in these later responses than in the reponses at the beginning of the dual enrollment program.

Female and Male Responses

In the qquantitative data, females started out with higher aspirations than male students and did not waiver. Males did eventually catch up, as evidenced in both the quantitative and qualitative data. In their journals, females at the beginning of the program were far more interested than males in the college preparation aspect of dual enrollment and toward the end of the program they remained very focused on college preparation, but they had also become more aware of career opportunities, seeing dual enrollment as a way to help them prepare for college as well as their careers. This is exactly what proponents of dual enrollment suggest it is supposed to do. Male students began the dual enrollment program with far more career orientation than female students, with some even claiming they had no intention of going on to college. One male student specifically planned to join the military and another wanted to go directly to work. However, as the program progressed, the male students indicated in their journal responses that they had become more interested in college preparation. Specifically, one male student said he wanted to attend technical college in order to learn a skill to help him advance in the military. Another believed that a technical college program would help him get a better job. It may not be possible to prove that the dual enrollment program was solely responsible for these changes in goals and aspirations, but the question could be asked what effect the program may have had on male students that contributed to their "catching up" to

females in both the quantitative and the qualitative data. Additionally, further research might examine what about the program may have answered female students' aspirations and contributed to their greater focus on their career goals than they had in the beginning. Examples of student responses and coding are presented in Appendix G.

Summary

The students' subjective responses in their journals were remarkable in demonstrating that the experience of dual enrollment had affected their attitudes toward college and career decisions they would face upon high school graduation. Though the study may have been skewed somewhat in that students in dual enrollment generally are aware that they are taking courses which give them college credit, these students made pointed comments about differences in testing, grading, attendance requirements and rigor of subject matter they had observed between high school and college course work. This was consistent with findings in the existing literature. And students applied what they had learned to their self-analyses regarding their own behaviors and habits in approaching their school work. They clearly saw the relevance of their dual enrollment experience to future college and career choices and believed that they were better prepared and less anxious about their ability to succeed in college and/or their chosen careers. Dual enrollment had largely given them what they expected, as well as sharpened their awareness of how college might differ from high school. While it may not be possible to measure the value of dual enrollment in helping students succeed in college, clearly, students themselves reported advantages in preparation and experience that they, at least, believed will be of use in their futures. And there may be added value in dual enrollment programs for supporting female students' college and career aspirations as well as developing those aspirations in male students.

The qquantitative data showed non-White students beginning the program with higher aspirations than white students and not waivering. Whites eventually caught up, as evidenced in both the quantitative and qualitative data. Differences in the qualitative data for non-white and White students were also examined but, unlike with the gender analysis, no differences in journal responses between those two groups were found.

CHAPTER VI

CONCLUSIONS

Introduction

This mixed-methods study of dual enrollment at a technical college in Georgia utilized a survey instrument and qualitative data including student journals to determine the relationship between participation in the program and students' postsecondary aspirations. Two research questions were posed and answered based on the data collected and the findings were presented in Chapters 4 and 5. This chapter will discuss how those findings can be interpreted based on the literature, it will examine the implications of those findings, and it will make recommendations for future research and study on this subject.

First the findings will be discussed and compared to the research presented in Chapter 2 as well as this study's research questions:

1) How, if at all, have students' postsecondary educational aspirations changed since beginning the dual enrollment program?
2) What demographic factor or factors related to students' reasons for enrolling in the dual enrollment program are also related to changes in postsecondary education aspirations?

The focus of this final chapter is to answer research question two and draw broad conclusions about what can be learned from this mixed methods study. Also included is a discussion of implications for policy makers as they go about assessing and evaluating not only

the practice of dual enrollment, but the overall goals of the program. Finally, recommendations are made for the direction of future research in this area.

Question 2. Role of demographic factors related to students' reasons for enrolling in the dual enrollment program and the relationship to changes in postsecondary education aspirations

As a result of this study of a dual enrollment program at a technical college, the examination of students' motivations for participating as well as their postsecondary aspirations both before, during, and after completion of the program, the following general conclusions can be made regarding students' and their experiences in the program.

Conclusion 1: This study was able to verify what is already known about students who participate in dual enrollment at this technical college.

The study participants were very similar to the technical college population as a whole. For example the majority were female, represented diverse racial/ethnic groups (nearly twice as many African-American students as White students), and were pursuing either a Technology/Career Preparatory (TC) Seal or a Dual Seal (both TC and CP) instead of a College Preparatory Seal only. These were typical students enrolled at the technical college in Georgia and also reflected the makeup of their counterparts at their respective high schools. What is different about this group of students was that larger numbers than their counterparts in the larger population reported being eligible for free/reduced price lunch in high school, a sign of socioeconomic status. In fact, 61% of study participants reported being eligible for free/reduced price lunch, whereas, according to the Georgia Department of Education (GDOE), students from the high schools that participated in this study reported that 49% were eligible for free/reduced price lunch. In most studies on dual enrollment, the majority of students who participate are

White, they come largely from affluent backgrounds, and most are pursuing advanced diplomas preparing them for a four year college or university after high school graduation. This study's population was different from that norm even though it was similar to the technical college student population as a whole. Also of note is that the majority of the study participants reported that they had both mothers and fathers who did not earn a college degree (80% for fathers and 66% for mothers). This factor was probably of significance when postsecondary aspirations are being measured.

Conclusion 2. This study verified what the existing literature says about what motivates students to participate in dual enrollment.

The reasons these students chose to participate in dual enrollment were measured using two surveys, one at the beginning of the program and one at the end. These surveys asked students to rate the importance of the reasons they selected dual enrollment and then to rate how useful they had found the dual enrollment program in meeting their goals. Students chose reasons taken from the literature on dual enrollment and from previous studies that assessed motivations for participation. Most students ranked all reasons except one as either important or very important in selecting the dual enrollment program. They also ranked the reasons equally on usefulness. The only reason that students did not rank as high in importance was "my parents wanted me to participate." All other reasons were ranked highly, and that was also supported by the qualitative data which focused heavily on the themes of career and college preparation. These data supported the Harnish and Lynch (2005) study that used student focus groups to gather information on student motivations for participating in dual enrollment. The students represented in that study reported college preparation and career preparation as the main reasons

they chose to participate in dual enrollment. Parents were not a factor in most students' decisions and neither were school counselors in this study.

This study also supported research by others (Bailey & Karp, 2003; Hoffman, 2003; Lynch et al., 2006; High School Leadership Summit, 2005; Hughes et al., 2006; Bailey, Hughes, & Karp, 2002) that suggested dual enrollment programs provided the elements necessary for successful secondary-to-postsecondary transitions. First, student success in a single college-level course or a program may breed increased self-confidence and motivation as evidenced in the respondents' indicating that they felt the dual enrollment program influenced their decision to go to college and also better prepared them for college. This increased self confidence and motivation may aid in encouraging students to apply to and matriculate in college. Also students' exposure to the social and procedural skills required of college students (through both academic coursework and support services) will prepare them for college. In the end, a clearer understanding of the demands of college, coupled with academic success, was likely to show students that college is a realistic goal for them, thus increasing the likelihood that they would apply to and enroll in postsecondary education and be successful there.

Even though students ranked all the motivations in the literature as important (except parental desire), thereby further validating the research on motivations to date, the methodology may have been somewhat limited in this study. The survey instrument given at the beginning of the dual enrollment program asked students to rank on a Likert scale the importance of their reasons for participating in dual enrollment. Since the majority of students ranked all but one reason as very or extremely important, there was only one variance which showed in the reason "my parents wanted me to participate." Therefore, no significant relationship was found between what motivated students to participate in dual enrollment and changes in postsecondary

aspirations from the beginning to the end of the program. If the survey instrument had required students to rank each reason in importance (i.e., giving a 1 to most important and an 8 to least important), it might have been possible to have discovered some variance and find a relationship between motivation and career aspiration. However, the qualitative data did allow for examination of whether and how students' motivations for participating in dual enrollment and their college and career aspirations changed over time.

There were positive changes in aspirations from initial to final survey with students reporting increases in postsecondary aspirations as they related to the question of their educational plans after high school graduation. On the initial survey, 4% did not want to attend college and that dropped to 2% on the final survey. Since the sample was small, that two point jump may be interpreted as significant in arguing that the dual enrollment program positively affected students' desire for college training after high school. Initially, 31% wanted to attend a two-year college only, and that dropped to 24% on the final survey; 65% wanted to attend a four-year college, and that increased to 74% on the final survey. These results could indicate that the dual enrollment experience may have increased students' aspirations to attend four-year institutions. These results were echoed when students were asked the highest level of education they expected to receive, with 79 students reporting wishing to receive at least a Bachelor's degree (32 reported wanting to earn a bachelor's degree, 24 reported wanting to earn a master's degree, and 23 reported wanting to earn a Ph.D. or professional degree). These data clearly showed that student aspirations, though not linked to motivation statistically, did show some movement toward higher goals at the end of the study period. Most of the students reported on the final survey instrument that the program had influenced their decision to go to college (71 students reporting that it did and 27 reporting that it did not). Students also reported that they

felt better prepared for college after the dual enrollment program (81 students reporting that dual enrollment had made them better prepared and 16 reporting that it had not). This may have indicated that the students believed the program had influenced them, though whether their reasons for participating in the program had any influence on their aspirations cannot be determined from the study results.

According to the chi-square analysis on motivations as they related to change in level of education expected (aspirations) on the initial and final surveys, the results showed that the changes made were what was expected based on the analysis. The changes that were observed could not be attributed to participation in the program itself, or, for that matter, any other factor. They would be expected given a normal distribution. Though expected, this finding is still noteworthy. The literature on dual enrollment shows that most students who participate do have aspirations for careers that in many cases require some college training, if not a college degree. That is why instead of "wasting" their senior year, students are eager to participate in dual enrollment so they can start earning college credit or get a start on career training. These two reasons were ranked the highest on the initial survey in terms of importance and resonate with the literature that indicates that dual enrollment is a means of college and career preparation for students while they are still in high school (Harnish & Lynch, 2005). These results were not surprising considering that many of the students who participated in this study's dual enrollment program tended to be above average (reporting a high school GPA of 3.0 or higher) and pursuing a Dual Seal in high school, a combination of College Preparatory and Technology/Career Preparatory courses. These students clearly seemed to be on the track to go to college and also to learn a skill that would help them in their future work or career. The findings that were

somewhat unexpected had to do with changes in aspiration as they related to gender and race/ethnicity. First the findings associated with gender will be discussed.

Conclusion 3. There were differences between Females and Males in this study in terms of their changes in postsecondary aspirations.

On the initial survey, females reported significantly higher postsecondary aspirations than males, with 45 of the 53 females who answered this question reporting wanting to earn a four year degree or higher, while only 19 of the 36 males who answered this question reported the same. In other words, 85% of the females (38% four years, 47% more than four years) reported they wanted to earn at least a bachelor's degree, while only 53% of the males (14% four years; 39% more than four years) reported the same. This means that just about half of the males reported expecting less than four years of college compared to 15% of females with these expectations. The anticipated postsecondary participation rate of females may be higher not only due to larger numbers of females in the population but also perhaps because they reported generally higher levels of aspirations in high school.

On the final survey, males did "catch up" to females somewhat, with 92% of females (34% four years, 58% more than four years) reporting wishing to earn a bachelor's degree or higher, and 75% of males (33% four years, 42% more than four years) reporting the same. The majority of the increase for males was the in terms of the four year expectation (bachelor's degree), whereas for females it was the more than four years' expectation (master's degree or above). The chi-square test indicated no statistically significant relationship between the two variables (gender and aspirations) on the initial and final survey, but this does not lessen the interesting aspect of change noted in the individual results. This coincided with the qualitative data that showed males to be more career oriented in the beginning of the program, becoming

more focused on college preparation near the end, especially as it related to career advancement. The males in many instances tied college preparation back to career preparation or skill enhancement, whereas females tended to focus strictly on college preparation in the beginning and career preparation in the end. Since this change cannot be directly attributed to the dual enrollment program, alternative explanations were explored.

Differences in aspirations related to gender could possibly be explained by the parental educational background and income of females and males as well as students' educational records. There was no difference between mother's educational level for females and males, in fact 37% of females reported mothers who had a bachelor's degree or higher and 29% of males reported the same. In addition, there was no difference between the educational levels of their fathers, with 21% of females reporting fathers with a bachelor's degree or higher and 15% of males reporting the same. In fact the only observed difference in educational level between females' and males' parents was at the baccalaureate level, with slightly more females having either a mother or father or both with a bachelor's degree. However, at the advanced degree level (master's and above), there were as many males who had one or both parents with an advanced degree as females. Therefore, educational level of parents was not a plausible explanation for aspirational differences between males and females.

These gender differences could also possibly be explained by the parental income of male and female students; however, as with parental educational level, parental income level of females and males were about the same. As reported in chapter 4, 61% of students reported being eligible for free reduced price lunch in high school, a larger number than the Georgia Department of Education (GDOE) reported for students who attended high schools in the districts where these students attended. This is an interesting finding in terms of aspirations

being higher, especially for females, at the beginning of the dual enrollment program. At the end, postsecondary aspirations were as high for males as for females. Research has demonstrated a relationship between higher socioeconomic status (SES) and postsecondary aspirations and completion rates (Cabrera, Burkum, & LaNasa, 2001; Cabrera & LaNasa, 2001; Corak, Lipps, & Zhao, 2004; Trusty, Robinson, Plata, & Ng, 2000). Cabrera & LaNasa's longitudinal study of 15,000 high school students published in 2000 found that students from lower SES backgrounds are less encouraged to pursue postsecondary education and are less prone to aspire to a four-year degree. They also found low SES to be one of the eight factors affecting college transfer rates the most. Clearly students' SES may influence their college choice process and postsecondary aspirations; however, in this study, it appeared that these dual enrollment participants, in spite of reported lower SES, indicated the desire to earn a bachelor's, and in many cases, a master's degree or above. This finding deserves further study to determine whether dual enrollment programs attract students with higher aspirational goals regardless of parental income. The research on dual enrollment maintains that programs should be available to all students, not just those attending well-funded high schools (Kirst & Venezia, 2001; Olson, 2006), and must include students who attend high schools with large minority enrollments. One of Bragg's (2006) recommendations from an extensive study of dual enrollment programs across the United States noted that only eleven states made a special effort to extend dual enrollment programs to low income students. While that was not a goal of this particular dual enrollment program in Georgia it is clear that lower income students were served and may have possibly benefited from this program.

Another plausible explanation for the reported aspirational differences of females and males may have been their educational plan in high school. Reported diploma types and high

school GPA were examined to determine if there was a gender difference present. There was no difference found in reported high school GPA for female and male students, with most reporting an academic GPA of 3.0 or higher. However, females reported pursuing a dual seal diploma at higher rates than males. In fact, 70% of females reported pursuing a dual seal diploma, 16% reported pursuing a college prep seal, and 14% reported pursuing a tech prep seal. In contrast only 28% of males reported pursuing a dual seal diploma, while 48% reported pursuing a tech prep seal and 24% reported pursuing a college prep seal. Clearly females reported seeing the benefits of dual enrollment in terms of their college and career preparation, and they also followed that mantra in high school by making sure they received an education that prepared them for both postsecondary college work and the workplace. Again, though the study may not prove that dual enrollment impacted these aspirations, female students may have been availing themselves of dual enrollment opportunities because they perceived a need for broader options after high school.

Conclusion 4. There were differences between White and non-White students in this study in terms of their changes in postsecondary aspirations.

On the initial survey, African-American students had proportionately higher aspirations than White and Multi-racial students, with 81% (30% four years, 51% more than four years) aspiring to earn a bachelor's degree or higher and only 56% of White students (20% four years, 36% more than four years) and 25% of Multi-racial students (0% four years, 25% more than four years) aspiring to the goal of a bachelor's degree or higher. On the final survey, white students also "caught up" to African-American students, with 87% of African-American students (34% four years, 53% more than four years) reporting aspiring to earn at least a bachelor's degree, 72% of White students (28% four years, 44% more than four years), and 63% of Multi-racial

students (13% four years, 50% more than four years) reporting aspiring to earn at least a bachelor's degree or higher. Even though Whites and Multi-racial students caught up to their African-American counterparts, the African-American students still came into and left the program with much higher postsecondary aspirations. The changes for race/ethnicity were about what was expected based on the chi-square analysis, but this does not lessen the interesting aspect of change noted in the individual results. The qualitative results did not show that non-Whites had higher aspirations than Whites at the beginning and again at the end of the program. This may be due to the fact that the majority of participants in the qualitative part of the study were females (27 females compared to 3 males), and most of the females began with and ended with higher aspirations. If there were more diversity in terms of gender in the qualitative part of this study, different results might have been observed. However, this does not discount the notion that dual enrollment programs may have the most effect on traditionally underrepresented students who may view the programs as opportunities to expand their education and career options.

One plausible explanation for non-Whites having higher aspirations than Whites at both the beginning and the end of the dual enrollment program might have been, as with gender, parental educational level and income. But, once again no relationship was found between the two. Whites and non-Whites reported approximately the same levels of parental education with 33% of non-Whites reporting mothers with a bachelor's degree or higher, and 32% of White students reporting mothers with a bachelor's degree or higher. The same was found for fathers, with 19% of non-Whites reporting fathers with a bachelor's degree or higher and 16% of Whites reporting fathers with a bachelor's degree or higher. The majority of students reported parents with less than four years of education. As with family income, parental educational level may be

related to postsecondary access and as stated in the dual enrollment literature, dual enrollment should no longer be limited to the academic elite (Hoffman, 2003b); clearly that was not the case with this population.

There was also a difference between the high school educational plans of non-White and White students, though not as pronounced a difference as observed with females and males. Non-White students reported pursuing a dual seal diploma at higher rates than White students, 59% and 37% respectively, whereas larger numbers of White students reported pursuing a tech prep diploma at higher rates than non-White students, 42% and 24% respectively. Both groups reported pursuing a college prep diploma at approximately the same rates with 17% of non-Whites reporting a college prep diploma, and 21% of Whites. Just as was the case with females, non-White students may see a benefit of high school dual enrollment programs that prepare them for both college and the workplace.

Once again the advantages of dual enrollment programs are both postsecondary and workforce preparation. Dual enrollment programs increase access to postsecondary education for more students who might not otherwise pursue it, encourage more students to enroll in college after graduation, give students a "head start" on college programs, and allow students to take courses of interest to them that may not be offered at their high schools (Lynch et al., 2006). In addition, dual enrollment programs may assist in closing the gaps in college participation and attainment rates especially for minority and low income populations (Ruppert, 2003). Clearly this study had larger numbers of minority and low income students who were not pursuing a high school diploma strictly designed for a four year institution; however, the majority of these students aspired to the American dream of attaining a college, or in many cases an advanced, degree.

Implications

The results of the study have implications for current research as well as for future research on dual enrollment. With technical colleges now investing in dual enrollment, options have been expanded to wider high school populations, giving rural, first-generation, female and minority students opportunities not earlier available to them. These students' postsecondary aspirations indicated their interest in college and career training. Their enthusiasm for and satisfaction with their dual enrollment experiences suggested that they are excited about the opportunities dual enrollment provides. The historical option of dual enrollment for White, affluent, college-bound students may have been just what they expected and so did not significantly influence either their aspirations or expectations regarding college. For female and minority students, dual enrollment programs may offer expanded opportunities they have been waiting for. It is outside the scope of this study to account for the differences in educational aspirations of females and males. But there could be sociological implications that females have developed higher educational aspirations as a result of gender equity issues in the larger culture. Males may not have aspired to further education in equal numbers simply because they perceived they already have career advantages because of their gender. As with gender differences, racial/ethnic minorities may have had higher aspirations as a result of historically limited educational opportunities. African American students, especially females, may view dual enrollment as their best route to expanded educational opportunities after high school graduation. Similarly, dual enrollment programs offered through technical colleges may attract these students in larger numbers than dual enrollment programs through community or four-year colleges simply because many minority students may have easier access. These and similar issues deserve further study.

Recommendations for Further Study

The value of dual enrollment programs has been argued and largely accepted since their emergence in the twentieth century. Recent expansions in dual enrollment options over the last two decades have seen the increased involvement of technical colleges and a corresponding diversity of students enrolling in these programs. Thus, more career and tech prep students are availing themselves of the opportunities to get a "jump start" on college training, and most seem to feel that the programs provide the dividends they promise. Rural, minority, and female students seem especially interested in these increased options and indicate that they answer their postsecondary aspirations. The traditional emphasis on GPA, retention, and graduation rates in studies of dual enrollment programs may be ill-suited to measure the effects on educational aspirations of female and minority students or to weigh the possible benefits of dual enrollment for this population.

Although examining students participating in occupational courses with a technical college was the key component of this study, further research needs to be done with students participating in academic courses with either a technical or community college. The issue of motivations and postsecondary aspirations as they relate to participation in dual enrollment is an understudied phenomenon and research should be replicated with other types of students participating in different dual enrollment programs. If access to postsecondary education and increasing students' aspirations to earn advanced degrees are the goals of many dual enrollment programs, then it must be determined if these programs are really successful in reaching those goals. Additional research should also be conducted to determine if those students whose aspirations changed or grew as a result of the programs actually followed through and

matriculated into postsecondary education. A longitudinal follow-up of students is recommended.

Conclusions

The question should be asked why females and non-White students began and ended their dual enrollment program with higher postsecondary aspirations than their male and White counterparts. What changed? While the relationship was not found to be statistically significantly as it related to the motivations for pursuing dual enrollment, clearly there was a relationship. What can explain this relationship if the dual enrollment program itself cannot? The present study may raise more questions than it answers. Traditional research and methods may not be uncovering some of the most interesting phenomena present in technical education today.

As has been noted earlier, there were some limitations to the study method itself, making it difficult to draw clear conclusions. However, a relationship between demographics and aspirations was found in the qualitative data and at least partly measured in the quantitative data from the survey instrument. African-American students, especially African-American female students, started out with higher aspirations than their White, male counterparts. This relationship cannot be explained based on students' dual enrollment motivations, students' parental educational levels or income; however, the fact that the majority of these students, both males and females, non-Whites and Whites, reported coming from lower income and less educated families but still began and ended the program with high postsecondary aspirations deserves further study. These dual enrollment students also saw the benefit of both college and career preparation, with one White female student in particular talking about the patient care assisting program as preparing her to become an orthopedic surgeon. There were clear changes

in many of these students that cannot be ignored. If the statistical data did not explain the changes and the differences, then what did?

Females and non-White students and their families may have come into the dual enrollment program without the traditional mindset that sometimes exists about technical education, that it is an option for students who cannot "make it" in traditional four-year colleges, that technical education is an option for students with poor educational backgrounds or low SAT scores, that technical education is the best some students can expect. These dual enrollment students and their families may have seen technical education as a "stepping stone" to the postsecondary educational and career training they seek and as a way to help them on the path to earning advanced degrees. Their parents must have also seen the benefit of technical education as a "stepping stone" or they would have never given permission for their children to participate. The existing research on dual enrollment simply does not address these possibilities. It has been limited in scope and range, largely ignoring dual enrollment students in programs offered through technical colleges who were taking "non-academic" courses, and spending little time examining students' expressed aspirations. Why were the parents of the white students, especially white male students, not seeing the same benefits for their children of technical education options? Future studies of dual enrollment programs through technical colleges might include surveying parents, as well. In this study, White parents shared the same educational background and SES as non-White parents. Also the quantitative data showed that more non-white students and female students were pursuing a dual seal high school diploma. This was important because these students saw the benefit of not only college but also skill training as providing them with the tools they needed to have a successful career and a successful life. This is exactly what technical education is meant to accomplish. It is meant to teach the skills, both

academic and technical and professional, needed for good jobs and successful careers. In terms of human capital and workforce development, having workers with both of these skills is necessary for the U.S. economy (Ruppert, 2003).

Technical education has long had this dual mission, and that might at least partly account for the gender and demographic variances the present study uncovered and the more interesting questions it raises. The parents of these students may not consider technical education as less rigorous or less valuable than that offered by a traditional four-year college or university. Technical education for them, and for their children, may be seen as part of a larger educational and career plan. With the general expansion of dual enrollment options through technical colleges and their usually simpler admissions requirements, these programs may be filling a sociological gap that has not been addressed in traditional dual enrollment research. Inequity issues have not disappeared from American education, and some studies have continued to show obstacles in access to postsecondary education and completion (Cabrera, Burkum, & LaNasa, 2001; Cabrera & LaNasa, 2000; Corak, Lipps, & Zhao, 2004; Trusty, Robinson, Plata, & Ng, 2000) especially for low income and minority students. Females and non-White students and their families may regard technical education as an accessible, viable, and valid postsecondary educational option, regardless of income or education level. Technical colleges have long reported high rates of student satisfaction and employment of their graduates. Dual enrollment options through technical colleges may be providing broad pathways for traditionally underrepresented groups—females and minority students—to begin their postsecondary education with an eye toward career advancement (Lynch et al., 2006; Harnish & Lynch, 2005).

Dual enrollment has a long history in American education. Increasingly, students from diverse populations are taking advantage of the programs to get a start on their college and career

aspirations. Students from this study seemed to join dual enrollment programs in roughly the same demographic proportions as the student populations of their school districts. There was also some evidence that dual enrollment opportunities met the needs and goals of minority and female students who might not otherwise have traditionally considered college. Whether the presence of dual enrollment options increased students' postsecondary aspirations is not clear, but students who avail themselves of the option seemed to demonstrate increased confidence that they can succeed in college after high school graduation. Furthermore, the dual enrollment option is fiscally sound, reducing costs for students and states and promoting collaboration between public school systems and their local technical, community, and comprehensive colleges (Orr, 1998; 1999 as cited in State Policies, n.d.; High School Leadership Summit, 2003). The dual enrollment idea has caught on, and students should continue to be encouraged to give college a try in their junior and senior years. With nationwide college enrollment patterns changing, dual enrollment may provide an option for students that increases their awareness of the need for education and training after high school.

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APPENDICES

Appendix A: Dual Enrollment Initial Survey

Name_____

I. Reasons for selecting the dual enrollment course

1. In selecting your dual enrollment program, please tell us how important you believe each item was for you. **Please circle only one response for each item.**

	Not Important		Important	Neutral	Very Important	Extremely Important
a.	To take courses not available at my high school	1	2	3	4	5
b.	To get credits I can apply to my college education	1	2	3	4	5
c.	To get a start on my career training	1	2	3	4	5
d.	To save cost of taking college courses	1	2	3	4	5
e.	To get high school credit for college courses	1	2	3	4	5
f.	To explore a career direction	1	2	3	4	5
g.	To see if I will do well in college	1	2	3	4	5
h.	My parents wanted me to participate	1	2	3	4	5

Other reasons:

a. _____

Please turn over more questions on back of page

II. Education and Background

2. Have you taken a dual enrollment course before?

   a. Yes
   b. No

3. What are your educational plans immediately after high school graduation? (**Circle only one response)**

   a. no college
   b. attend a 2-year community or technical college
   c. attend a 4-year college or university

4. What is the highest level of education you expect to complete? (**Circle only one response**).

   a. High school
   b. Some classes after high school, but no degree or certificate
   c. Apprenticeship
   d. Vocational certificate
   e. Community or technical college degree (2-year degree)
   f. Bachelor's degree (4-year degree)
   g. Master's degree
   h. Ph.d. or professional degree

5. What is your mother's highest level of education?

   a. High school dropout
   b. High school diploma/GED
   c. Some college, but did not graduate
   d. Bachelor's degree (4-year degree)
   e Master's degree
   f. Ph.d., Law School, or Medical School

6. What is your mother's occupation?

   a. skilled labor
   b. business
   c. education
   d. government
   e. homemaker
   f. healthcare
   g. retail

7. What is your father's highest level of education?

   a. High school dropout
   b. High school diploma/GED
   b Some college, but did not graduate
   c. Bachelor's degree (4-year degree)
   d Master's degree
   e. Ph.d.,Law School, or Medical School

8. What is your father's occupation?

   a. skilled labor
   b. business
   c. education
   d. government
   e. homemaker
   f. healthcare
   g. retail

9. What is your family's income level?
   a.. under $25,000 a year
   b. $25,000 to $50,000 a year
   c. $50,000 to $75,000 a year
   d. $75,000 to $100,000 a year
   e. over $100,000 a year

10. Are you eligible to receive free or reduced price lunch?
   a. yes
   b. no

11. How confident are you that you will succeed as a college student?
   a. Very confident
   b. Confident
   c. Neutral
   d. Somewhat confident
   e. Not at all confident

Please turn over more questions on back of page

III. Demographic Information

12. In what year were you born?

13. What is your race/ethnicity?
    a. American Indian
    b. African American
    c. Asian
    d. Hispanic/Latino
    e. Multi-racial
    f. White
    g. Other

14. What grade are you in?
    a. 11^{th}
    b. 12^{th}

15. What is your gender?
    a. Female
    b. Male

16. What is your high school grade point average (GPA)?
    a. 3.4 or above
    b. 3.0 to 3.3
    c. 2.5 to 2.9
    d. 2.0 to 2.4
    e. 1.9 or below

17. What type of high school diploma will you earn when you graduate?
    a. Tech Prep Seal
    b. College Prep Seal
    c. Dual Seal (both Tech Prep and College Prep)

Thank you for your participation, please return to Nichole Kennedy when finished.

Appendix B**:** Dual Enrollment Final Survey

Name_____

I. Reasons for selecting the dual enrollment course

1. Now that you've completed your coursework this semester, please tell us how useful this dual enrollment program was in meeting the reasons below.

Circle only one response

	Not Useful	Useful	Neutral	Very Useful	Extremely Useful
i. To take courses not available at my high school	1	2	3	4	5
j. To get credits I can apply to my college education	1	2	3	4	5
k. To get a start on my career training	1	2	3	4	5
l. To save cost of taking college courses	1	2	3	4	5
m. To get high school credit for college courses	1	2	3	4	5
n. To explore a career direction	1	2	3	4	5
o. To see if I will do well in college	1	2	3	4	5
p. My parents wanted me to participate	1	2	3	4	5

Other reasons:

a. _____

Please turn over more questions on back of page

II. Education and Background

2. What are your educational plans immediately after high school graduation? (**Circle only one response)**

   a. no college
   b. attend a 2-year community or technical college
   c. attend a 4-year college or university

3. What is the highest level of education you expect to complete in the next ten years? (**Circle only one response**)

   a. High school
   b. Some classes after high school, but no degree or certificate
   c. Vocational certificate
   d. Community or technical college degree (2-year degree)
   e. Bachelor's degree (4-year degree)
   f. Master's degree
   g. Doctoral degree (post-masters)
   h. Professional degree (law or medicine)

4. Has your experience in this dual enrollment course influenced your decision to go on to college after high school graduation?

   a. yes
   b. no

   If yes, how has it influenced your decision to continue go on to college?

5. Has your experience in this dual enrollment program better prepared you for college?
   a. yes
   b. no

   If yes, how has your experience in this dual enrollment program better prepared you for college?

Thank you for your participation, please return to Nichole Kennedy when finished.

Appendix C: Recruitment Flyer

Attention Dual Enrollment Students and Parents

My name is Nichole Kennedy and I am conducting research on the effects of technical college dual enrollment on students' postsecondary intentions for my doctorate in Higher Education at the University of Georgia.

If you are accepted into the dual enrollment program at Columbus Technical College you will be asked to participate in a survey questionnaire asking you reasons for participating in dual enrollment and questions regarding your educational plan. You will be asked to fill out two surveys which will each take approximately 15 minutes to complete One survey will be administered when you begin the program and the other when you complete the program. You may also be asked to provide a journal of your experiences.

Your participation **is voluntary, you can refuse to participate or stop taking part at any time without giving any reason and without penalty. You can ask to have information related to you returned to you, removed from the research records, or destroyed. Y**ou will receive no compensation for your participation. You will not benefit directly from this research.

No discomforts or stresses are expected. The risks from participating in this study, whether physical, psychological, social, or legal, including negative emotional reaction, are minimal, and the probability of such risks occurring is unlikely. Should any research-related injury occur, please contact the researcher, Nichole Kennedy, (706) 649-1174 or (678)-778-1431, nikki123@uga.edu.

If you agree to participate, please fill out and sign the attached consent form. Also have your parent or guardian sign the attached parental permission form if you are under 18 years of age.

Thanks!

Appendix D: Parental Consent Form

Title of Research	**The Effect of Technical College Dual Enrollment on Students' Postsecondary Intentions**	
Name of Researchers	**Nichole Kennedy,** Principal Investigator	**Christopher Morphew,** Faculty Advisor/Co-researcher
Phone Number & Email	(706) 649-1174/nikki123@uga.edu	(706) 542-0573/morphew@uga.edu
School Address	University of Georgia, Department of Higher Education, Meigs Hall, Athens GA 30606	

PURPOSE AND BACKGROUND

My name is Nichole Kennedy. I am a graduate student at University of Georgia and I am conducting a research study about the effect of participation in a technical college dual enrollment program on students' postsecondary intentions. I am inviting your child to take part in the research because he/she is enrolled in a dual enrollment program with Columbus Technical College.

PROCEDURES

If you agree to let your child take part in this research study, the following will occur:

1. Your child will be asked to participate in the completion of a survey instrument that will be administered at the beginning of the dual enrollment program (January 2008) and at the end of the dual enrollment program (May 2008). The survey instrument will be a questionnaire that will take approximately 15 minutes to fill out at each administration. These activities will take place in the dual enrollment classroom on the high school or college campus.
2. She or he will also be asked to complete a survey questionnaire about his/her reasons for participating in a dual enrollment program as well as his/her postsecondary intentions. The questionnaire will take about 15 minutes to complete. The questionnaire can be completed in the classroom.
3. The principal researcher or teacher will collect the completed questionnaires to use as research data. Participation or non-participation will not affect your child's grade or status in the class.
4. Your child may also be asked to provide a journal of his/her experiences in the dual enrollment program.

DIRECT BENEFITS

There are no direct benefits to your child but this study seeks to fill research gaps by not only examining who has been and currently is being served by dual enrollment in Georgia, but also to determine if participation in dual enrollment program increases students' intention to pursue postsecondary education following graduation from high school.

RISKS and DISCOMFORTS:

There are no known risks or discomforts associated with this research.

COMPENSATION OR INCENTIVE

If your child completes all surveys, he or she will not receive any compensation or incentive.

CONFIDENTIALITY

Information obtained in connection with this study that can be identified with your child will be kept confidential unless required by law. Immediately after the questionnaires are collected, the researchers will remove any identifying information pertaining to your child and the results will be aggregated. All results will be kept in a password protected computer which only the researcher can access.

PARTICIPATION AND WITHDRAWAL

Participation is voluntary. You can refuse to allow your child to participate and can withdraw your child from participation without any penalty or any loss of benefits to which he or she is otherwise entitled. Even if you give permission for your child to participate, he or she can refuse to participate and can quit at any time. You can request to have the results of the participation, to the extent that it can be identified as your child's, removed from the research records or destroyed.

QUESTIONS

The researchers can be contacted for any further questions about the research, now or during the course of the project. See contact information for the researchers at the top of the page. Additional questions, concerns or complaints regarding your rights as a research participant or in the event of a research related injury should be addressed to The IRB Chairperson, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address: IRB@uga.edu

I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to allow my child to take part in this study. I have been given a copy of this form to keep.

Nichole Kennedy		
Name of Researcher	Signature	Date
Name of Parent Guardian	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Appendix E: Student Consent Form

I _____ agree to take part in a research study titled "The Effect of Technical College Dual Enrollment on Students' Postsecondary Intentions," which is being conducted by Nichole Kennedy, graduate student in the Institute of Higher Education at the University of Georgia, (706) 649-1174 or (678) 778-1431, under the direction of Dr. Christopher Morphew, Associate Professor, Institute of Higher Education, University of Georgia, 706-542-0573. **My participation is voluntary. I can refuse to participate or stop taking part at any time without giving any reason and without penalty. I can ask to have information related to me returned to me, removed from the research records, or destroyed.**

The purpose of the study is to examine how participation in a dual enrollment program affects students' postsecondary intention.

I understand that I am participating voluntarily and will receive no compensation for my participation. I will not benefit directly from this research.

The procedures for participating in the study are as follows:
If I volunteer to take part in this study, I will be asked to do the following:

- Fill out a survey instrument that will take no longer than 15 minutes in January 2008 and again in May 2008.
- Provide a journal of experiences in the dual enrollment program.

No discomforts or stresses are expected. The risks from participating in this study, whether physical, psychological, social, or legal, including negative emotional reaction, are minimal, and the probability of such risks occurring is unlikely. Should any research-related injury occur, please contact the researcher, Nichole Kennedy, (706) 649-1174 or 678-778-1431, nikki123@uga.edu.

Any information that is obtained in connection with this study and that can be identified with me will remain confidential and will not be released without my prior consent, unless required by law. Immediately after the questionnaires are collected, the researchers will remove any identifying information pertaining to me and the results will be aggregated. All results will be kept in a password protected computer which only the researchers can access.

The researcher will answer further questions about the research, now or during the course of the project, and can be reached by telephone at: (706) 649-1174 or (678)778-1431.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

_____	_____	_____
Nichole Kennedy,Researcher	Signature	Date

Telephone: _706-649-1174 or 678-778-1431_____
Email: _nikki123@uga.edu_____

_____	_____	_____
Name of Participant	Signature	Date

Please sign both copies, keep one and return one to the researcher.

Appendix F: Journal Questions

First Set:

1. Why did you choose to participate in the dual enrollment program?
2. What other courses are you taking in high school?
3. What are your educational plans after high school?
4. What are your career plans?

Second Set:

1. How are the dual enrollment courses progressing?
2. Do you know what your grades are so far in the dual enrollment courses?
3. Are the dual enrollment classes, as compared to your high school courses, more challenging? more relevant? easier? harder?
4. Is the dual enrollment instructor (college instructor), as compared to your high school instructors, more challenging? easier? harder? making the information more relevant to your career plans?

Third Set:

1. How are the dual enrollment courses progressing?
2. Do you know what your grades are so far in the dual enrollment courses?
3. Are the dual enrollment courses preparing you for postsecondary education?
4. Are the dual enrollment courses preparing your for the workforce?

Final Set:

1. What are your final grades in the dual enrollment courses?
2. Do you plan on attending a postsecondary institution following high school graduation? If yes, do you plan on attending a two-year technical or community college or a 4-year college or university? If no, do you plan on joining the workforce or the military?
3. Do you believe the dual enrollment courses prepared you to go on to college? Workforce? Military?

Appendix G: Examples of coding for Qualitative Data

First Set of Journal Questions

1. **Why did you choose to participate in the dual enrollment program**

MW: So that I could be certified to work in a hospital this summer and further my knowledge in the health field. WF, rural

JW: Well I wasn't really trying to get a dual enrollment, I was trying to take more classes that would help me in the future with college majors and my career choice. The dual enrollment would better my odds in becoming and doing what I really want to do. BF, rural

CC: I thought it might be fun. BM, rural

2. **What other courses are you taking in high school?**

MW: AP Lit, Statistics, Economics, Trig, AP Bio, Algebra II, AP Lang, Weight Training, Therapeutic Med I & II

JW: Other than the HIP class I am currently in honors literature, business document processing, and business education. Last semester classes were business data applications, economics, calculus, and SAT prep.

CC: American Government, Precalculus, Physical Education, and PCA

3. **What are your educational plans after high school?**

MW: I am waiting to hear from UGA, but if I do not get accepted there I will go to West GA and transfer. I want to major in Sports Exercise and attend Medical College of GA to become a PT.

JW: My plans are to try to get a job at AFLAC during the summer and attend a college in fall. After I get into college I plan to major in business administration, minor in English literature, and also take a class in psychology.

CC: Plan to attend Columbus Tech College then Army

4. **What are your career plans?**

MW: I want to become a pediatric physical therapist

JW: My career plans are not quite developed. I would want to get a job at AFLAC and become successful in whatever my job title is within the company or become a lawyer, but with either one I would be happy.

CC: To be a test drive Lamborghini or some other big name. Then work for Donald Trumph.

Last Set of Journal Questions

1. **What are your final grades in the dual enrollment courses?**

MW: 94

JW: I'm not 100% sure on the grades but I do believe that I am passing with an A or a high B.

CC: They are very good

2. **Do you plan on attending a postsecondary institution following high school graduation? If yes, do you plan on attending a two-year technical or community college or a 4-year college or university? If no, do you plan on joining the workforce or the military?**

MW: Yes I am on the waiting list for UGA but if I don't go there, I'll go to West GA and transfer. Afterwards, I plan on attending a PT school or Medical College of GA.

JW: Yes I do plan to; a 4-year university

CC: Yes I plan on attending a 2 year college. Then I would like to join the military

3. **Do you believe the dual enrollment courses prepared you to go on to college? workforce? military?**

MW: Yes, the clinical we go on and the skills we practice really help to prepare for the workforce. We are placed in the nursing atmosphere and are able to practice our skills on real patients. Learning through experience is the best way for me to learn so this really helps.

JW: It did definitely help prepare me for college by keeping my head where it needs to be, improving my study skills and making studying a more regular practice than usual. I appreciate being in the class, it was an opportunity to be one of the few that took the course, and I will take what I have learned to college with me!

CC: Yes, because I can have a degree in what I do and this way I can make more money in the military.

Appendix H: Courses study participants took in the dual enrollment program

Certified Life and Health Insurance Specialist Certificate

Insurance and Business Environment
Information Processing
Business Software Applications
Business Interaction Skills
Managing Customer Relationships
Personal Effectiveness

Financial Services Professional Certificate

Computer Concepts
Information Processing
Business Interaction Skills
Managing Customer Relationships
Personal Effectiveness
Financial Services

Criminal Justice Fundamentals Certificate

Introduction to Criminal Justice
Corrections
Principles of Law Enforcement
Introduction to Microcomputers

Patient Care Assisting Certificate

Nutrition and Diet Therapy
Medical Terminology
Interpersonal Relations and Professional Development
Patient Care Fundamentals