

UNIVERSITY OF WISCONSIN-LA CROSSE

Graduate Studies

EFFECTS OF DUAL DEGREE CREDIT PROGRAMS ON RETENTION AND TIME  
TO DEGREE AT THE UNIVERSITY OF WISCONSIN-LA CROSSE

A Chapter Style Thesis Submitted in Partial Fulfillment of the Requirements for the  
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EFFECTS OF DUAL DEGREE CREDIT PROGRAMS ON RETENTION AND TIME  
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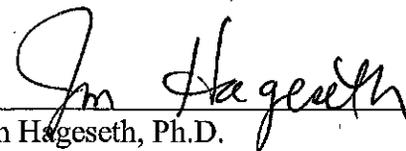
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We recommend acceptance of this thesis in partial fulfillment of the candidate's requirements for the degree of Master of Science in Education – Student Affairs Administration in Higher Education.

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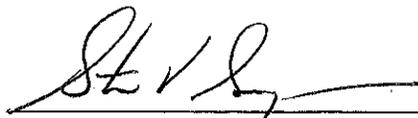
  
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## ABSTRACT

Rybaski, J. D. Effects of dual degree credit programs on retention and time to degree at the University of Wisconsin-La Crosse. M.S. Ed. in Student Affairs Administration in Higher Education, December 2012, 64pp. (C. S. Bakkum)

The purpose of this study was to investigate the effects of enrollment in high school Advance Placement (AP) and/or Dual Enrollment (DE) programs on college retention and time to degree in a sample of 18,135 undergraduates between the years 1992 and 2002 at the University of Wisconsin-La Crosse (UW-L). The research compares the relationship between these variables for students who participated in these programs during high school with those students who did not participate. The results showed that AP/DE program enrollment is an effective strategy to help students persist and graduate more quickly.

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## **CHAPTER I**

### **INTRODUCTION**

Given the current goals of the Obama administration, "...challenged every American to commit to at least one year of higher education or post-secondary training. The President has also set a new goal for the country: that by 2020, America would once again have the highest proportion of college graduates in the world." (Obama, 2008), and the resulting Wisconsin Growth Agenda, "The plan has three goals: 1. to develop the state's human potential, 2. to create new jobs, and 3. to strengthen local communities." (Pruitt & Reilly, 2010), university officials must examine what they can do to enroll more high school students in college and help them graduate more quickly. College student persistence and the overall time it takes to graduate from a university are influenced by a host of student and institutional characteristics including financial circumstances, academic preparation, educational requirements, educational goals, academic support programs, social integration, family support, and a variety of individual psycho-social factors (Pascarella & Terenzini, 2005; Tinto, 1987). Between the ten-year span of 1997-1998 and 2007-2008 the average cost for a 4-year public institution increased almost 82% from \$7,469 to \$13,589. Accounting for inflation and adjusting for constant 2007 dollars, the average college cost increased about 41% for public universities (National Center for Educational Statistics, 2009).

Data collected by the Project on Student Debt indicate the average college debt for the University of Wisconsin - La Crosse (UW-L) graduate for 2008 was \$21, 250. Based on the trend in decreased student financial support and increased dependence on tuition dollars to supplement state aid it is justifiable to assume average cost of college will continue to rise.

Looking at national trends for university retention and graduation, only slightly more than half of all entering students graduate with an undergraduate degree in six years (National Center for Education Statistics, 2010). In 2008, University of Wisconsin (UW) System institutions retained 80.2% of new incoming freshmen to their sophomore year (University of Wisconsin System, 2010). Furthermore, the UW System reports a 6-year 59.7% graduation rate for full-time 2003 cohort students. In 2008, UW-L retained 86% of new incoming freshmen to their sophomore year and the 6-year graduation rate of the 2003 cohort was 70% (University of Wisconsin-La Crosse Common Data Set, 2010).

According to the 2000 US Census, 17.3 million people in the United States age 18 and older are enrolled in college. Estimated trends for the next five years will put another 2.3 million people in college, pushing total enrollment to 19.6 million college students. The United States ranks near the bottom of industrialized countries in college completion rates (College Board, 2008). Unless more students enroll in and graduate from college, the United States will continue to slip farther behind other developing nations such as Canada, Korea and Sweden in total number of college graduates. For the first time in the history of the US, the level of educational achievement for the current generation will not exceed that of their parents (College Board, 2008). Experts among the State Higher Education Executive Officers believe in order to reclaim the world's leading ranking,

55% of young Americans must gain a community college degree or higher by 2025 (SHEEO, 2008).

The comparison of US graduates to those in other countries is gaining importance in today's competitive global market, and the value of education is measured not just in monetary value but human capital. Since the 1983 report *A Nation at Risk* (US Department of Education) was released, an increased value has been placed on education and most notably the value of a college degree to maintain a spot for individuals in America's middle class.

Efforts to increase student retention and graduation rates include opportunities for advanced college credit (Mokher & McLendon, 2009). This study investigates the role of Dual Enrollment/Advance Placement (DE/AP) programs in retaining and graduating college students more quickly. This study advances a longitudinal investigation of the effects of DE/AP programs on retention rates and time to degree for a sample of approximately 18,135 undergraduate students at the University of Wisconsin-La Crosse between the years of 1992-2002. A study like this first warrants a definition of the terms Dual Enrollment/Advance Placement programs.

### **Advance Placement/Dual Enrollment Programs**

The most established and perhaps most widely used dual-degree credit option is the national Advanced Placement (AP), which is administered and overseen by the College Board. Advanced Placement was created through a series of studies by the Ford Foundation in 1951 to assess the perceived gap in academic preparation between high schools and colleges in the United States. The studies concluded that some high school students were clearly prepared to perform college-level work while still in high school.

Giving such students the opportunity to participate in advanced course work would help accelerate their academic and career paths (The College Board, 2000). Furthermore, the Ford Foundation studies recommended that high school teachers take on the responsibility for developing AP coursework. The AP curriculum is designed to engage students in college course content ending with a final exam to grant credit at the college level. At the present time the College Board offers 37 different examinations, which requires teachers to design their curriculum accordingly (The College Board, 2012). In 2011, 903,630 of the 2,993,120 high school graduates (30.2 %) took at least one or more AP exams totaling over 2.7 million AP Exams. In Wisconsin 17,280 of the 62,068 high school graduates (27.8%) took at least one or more AP Exams (The College Board, 2012). In 2010, 752 of the 1,837 (41%) new, incoming freshmen at UW-La Crosse earned some form of advance credit (G. Engen, personal communication, June 25, 2012).

In contrast to the national AP program, dual enrollment programs (DE) are authorized through an in-state university or college. Students are only eligible to participate in DE programs in the state in which they attend high school. Students receive instruction from a college faculty member either at the high school, at a local college, online, or through other means (Krueger, 2006). Compared with a more college preparatory AP curriculum, DE courses are designed to offer credit at the high school and college at the same time. DE courses allow students to take courses not available at their high school in addition to vocational preparation. For the local context DE options have similar designs: students in Wisconsin high schools enroll in Youth Options (YO) programs and Minnesota students enroll in Postsecondary Education Options (PSEO) programs. The cost for such programs in Wisconsin and Minnesota are subsidized by

state tax dollars, and the funding comes from the individual school districts with no direct cost to the student. Data collecting dual enrollment participation is limited, but according to the National Center for Educational Statics (2005), 71 percent of public high schools offered Dual Enrollment programs. Currently neither Wisconsin nor Minnesota are required to track student participation in national DE programs. The Wisconsin Department of Education is conducting the first survey of DE for the 2011-12 academic year. In 2010-11, 2,260 Wisconsin students participated in DE programs (S. Rose-Adametz, personal communication, June 25, 2012). In 2010-11, 5,476 Minnesota students participated in DE programs (Austin-King, Lee, Little, Nathan, Center for School Change at Macalester College, 2012).

Despite a wide array of AP/DE options, not all high school students enroll in these types of programs. Some students are not qualified academically while other students may not see the value in these courses. Students who have participated in these programs may have an easier transition to college; however, they may still lack fundamental skills to succeed (such as study skills, decision-making skills, and communication skills). For instance, the Youth Options program provides exposure to college expectation, instructional practices, and evaluation methods (Garvey, 2006) which may assist students in developing skills for college and beyond. Although students are taking AP/DE programs, they may not persist through college or graduate. As a result, there is a practical need to investigate the effects of AP/DE programs on retention and graduation of college students. If by enrolling in AP/DE courses students persist or graduate more quickly, more high school students may decide to participate in these programs.

## **Research Problem**

Why do high school students participate in dual enrollment (DE) and Advance Placement (AP) programs? Many incentives exist for them to earn college credit: school districts pay for college courses; lack of challenge and options in high school coursework; academic/college preparation; early start on career; early selection/registration of college courses. Participation in DE/AP may also be due to external motivators such as rising college tuition costs or competition for highly selective universities. Finally, students enroll in these programs because they see no other options in getting a head start to college without DE/AP credit. This may stem from pressures to succeed in high school, to get into college, and to secure their first job (Howe & Strauss, 2000).

Despite the large body of research on college student retention and degree attainment, relatively few studies have examined the effects of high school dual enrollment (DE) or Advanced Placement (AP) programs on college student retention and time to degree (College Board, 2006, Delicath 1999, Hoffman, Vargas, & Santos, 2008). One recent study important to this research is Sherman Valentine's (2010) dissertation. Valentine examined DE/AP programs earned at Indiana University of Pennsylvania, a public doctoral institute in Western Pennsylvania. Valentine's research recommended continued evaluation of AP/DE programs related to student persistence, first semester GPA and time to graduate beyond the Pennsylvania System. In addition, Valentine encourages further research to analyze how the number of DE/AP credits earned impacts persistence, first semester GPA and time to graduation. Although Wisconsin high schools have studied the transition of students with DE/AP to college (Garvey, 2006),

UW colleges and universities have not conducted research to illustrate the outcomes of these programs on their students. A significant number of students are enrolled in DE/AP with the hope of benefiting their college admission, getting a jump start on their degree program, or joining the workforce (Garvey, 2006). However, universities must answer questions about the benefits of DE/AP.

### **Significance**

Research on DE programs influences curriculum design and courses taken in high school, college admission and preparedness for college, and college faculty and remedial instruction at the college level. In addition, policy makers at the state level who fund DE programs through tax and public school funding may find such research useful. The numerous studies conducted by the College Board place additional significance on the validity of testing and reliability of successful high school to college transition.

At this time there is no longitudinal research related to DE programs, retention and time to graduation at the University of Wisconsin-La Crosse. Thus, this study makes an important contribution to the literature and can be used by students, high school counselors and colleges to help them understand the importance of AP/DE credits. With over one-third of the current students entering UW-La Crosse with some form of AP/DE credit each year this trend will not end overnight. The credits students earned prior to enrolling at UW-L is significant. Secondary schools that are able to offer DE options benefit from DE programs in K-12 academic testing, matriculation rates to college, academic reputation and school funding. Students may use information from this study to determine the effectiveness of DE credits in preparation for college and college success. Legislatures who fund DE programs may use this information to determine

future funding for secondary and higher education. Colleges and university admissions offices may use this information to determine the best method for weighing students' college preparation. Finally, institutions may use this information to address instructional issues and determine the level of remedial or advanced curriculum.

### **Purpose**

The purpose of this study is to investigate the effects of enrollment in high school Advance Placement/dual enrollment programs on college retention and time to degree in a sample of 18,135 undergraduates between the years 1992 and 2002 at the University of Wisconsin-La Crosse (UW-L). The research compares the relationship between these variables for students who participated in these programs during high school with those students who did not participate. The independent variable will be defined as having completed at least one AP or DE (or both) course during high school. The first dependent variable, retention, will be defined as students returning to UW-L each semester after first enrolling until graduation. The second dependent variable, time to degree, will be defined as the number of years it takes a student to graduate from the institution. To measure this variable, students will be compared regarding 4-year, 5-year, and 6-year graduation rates. Tracking longitudinal UW-L enrollment data (1992-2002) serves as the method of data collection. Aside from the independent and dependent variables, the data set includes students' demographic information, such as gender, race, high school GPA, high school class rank, entrance exam scores and subscores (ACT or SAT), home state, first year college GPA, cumulative degree GPA, and degree major.

The primary outcome of this investigation is to evaluate the benefits of dual enrollment options in terms of students' college success and to make specific

recommendations to institutions of higher education as well as high schools about the future of these programs. By examining the multiple opportunities to earn dual credit, researchers can measure the educational, social and economic values of these programs. Further, researchers and institutions can make inferences about the worth of dual credit programs for future students traversing post secondary education.

### **Research Questions**

The main question of this investigation is whether participating in dual-enrollment programs in high school facilitates retention in college and reduces the number of semesters or years it takes to earn a traditional bachelor's degree. From this main question, more specific questions that guide this research emerge:

- 1) Are college students who have earned AP or DE credit more likely to be retained in college than those who have not earned AP or DE credit?
- 2) Do college students who have earned AP or DE credit take less time to graduate from college than those who have not earned AP or DE credit?

### **Research Hypotheses**

Two research hypotheses were created from the research question for this study. The two null hypotheses listed below were used with an inferential statistic to test for statistical significance.

#### **Research Null Hypothesis One**

There is no statistically significant difference between college students who have not earned AP or DE credit in persisting from first to second year than those who have earned AP or DE credit.

## **Research Null Hypothesis Two**

There is no statistically significant difference between college students who have not earned AP or DE credit in time to degree, than those who have earned AP or DE credit. Time to degree is measured in semesters: four years or less, more than four years but less than five years, more than five years but less than 6 years, and 6 or more years.

### **Definition of Terms**

There are terms in this study that required definition. Additional terms may be defined outside of this section as used in the literature review and additional chapters, however the following terms have been defined for the reader's understanding and consistency.

*Attrition* – a reduction in the number of students who enroll in the subsequent term due to reasons other than graduation.

*Cumulative Grade point Average (GPA)* – an average derived from taking the total grade points earned and dividing by the total number of semester hours attempted for college credit, reported on a 4.00 scale. (UW-L Undergraduate Catalog 2009-11, p 40).

*Dropout* - any student who leaves college for a given period of time, and consequently does not earn the degree in the same amount of time, with the class with which he/she originally started.

*Freshman year* – first academic college experience for students with typical college credit hours ranging from 1 - 30 credits (UW-L Undergraduate Catalog 2009-11, p 39).

*High School Class Rank* – a rank derived from taking the student’s high school GPA compared to the high school GPA of all the students in a class.

*Persistence* – the continuation of a student’s enrollment at the same higher education institution without interruption until the student graduates from the degree program

*Postsecondary Academic Preparatory Approaches* also referred to as “accelerated academic programs” or “credit-transfer transition programs” in the literature, these approaches assist in the transition of students from high school into the postsecondary academic arena. Postsecondary Academic Preparatory approaches allow students to take academically accelerated courses in high school that qualify for college credit and are taught via high school instructors and staff. UW-La Crosse recognizes a number of these postsecondary academic options to transfer for credit: 1) College Board Advanced Placement (AP) Program where the students must earn a final AP exam score of 3 to 5 points on a 0-5 point scale, 2) International Baccalaureate Program (IB), 3) College Level Examination of Placement (CLEP), and 4) Dual-enrollment courses where students take and earn college courses through a public or private university and transfer the credit to the college.

*P-16 Education View* is the philosophical view that supports smooth transition from prekindergarten through completion of a four-year bachelor’s degree. This perspective is consistent with the belief that quality education programming is a shared responsibility at all levels of educational preparation (Basing, 2000; College Board, 2008).

*Retention* – the term used by institutions to describe cumulative act of re-enrolling for subsequent college terms until student graduates from the institution of higher education.

*Standardized Test Score* - the scores reported for the ACT English, reading, mathematics, science, and comprehensive score.

*Success* - defined on several levels from admission to college, college Grade Point Average (GPA), participation in class, admission to academic programs and time to graduation. This study will define success in time to degree and measure what effects dual credit options have on students' graduation rates and time.

*Time to Degree* - the measurement of time in semesters it took a student to earn a bachelor's degree from a university starting as a first-year, full-time postsecondary student.

*Traditional student* – the term used to define any new freshmen student who did not earn AP/DE credit.

### **Thesis Overview**

Research indicates that AP and Dual Credits do have a positive effect on student performance and graduation. What the current educational literature is lacking is a long-term examination of AP/DE programs. The incentive to prepare students for postsecondary education is great for both secondary and postsecondary institutions. The preparedness of students aids in their transition to college as well as the time to graduation, but is the use of AP/DE programs an effective tool in the academic preparation of students? By examining both Advance Placement and Dual Enrollment programs we will gain further insight into the effectiveness of these programs.

Chapter 2 examines the history of Advance Placement and Dual Enrollment programs, previous research on retention of university students and persistence of student to completion of college/degree attainment. It also examines previous studies of AP/DE programs which focused on retention and degree attainment.

Chapter 3 explains the methods for this study. The methodology for a quantitative study focuses around a research problem. Previous research, examined in chapter 2, was used to focus on and create research questions, which were tested in the form of hypotheses. The research design used hypotheses testing to measure the data collected and the effects of the independent variables (AP/DE credit) on the dependent variables (retention and time to degree). Chapter 3 also provides the demographics for the sample population and explains the inferential statistic method of Pearson Chi Square.

Chapter 4 examines the results from the data analysis. The hypotheses established from the research question are tested and explained.

The final chapter is the Discussion of this study. Based on the literature provided and the examination of data, additional information has been added to this area of study and recommendations for future research are suggested.

## **CHAPTER II**

### **LITERATURE REVIEW**

The United States has a strong tradition of higher education and academic success. In terms of economical value, the incentives for earning a bachelors degree are well documented in the literature (Alderman, 1999). International competition for post-secondary degree holders has been a hot button topic in the United States for many years as the demand for workers shifts from traditional blue collar workers to white collar, professional employment and technical fields. The current political administration has placed increased importance on the college degree by declaring that the United States must graduate 55% of young Americans with a community college degree or higher by 2025 (SHEEO, 2008).

Access to public education has dramatically changed at the postsecondary level in order to prepare students for the rigors of higher education. The twenty-first century system of transitioning students from secondary education to higher education has created gaps redefining what should be taught and learned in high school concurrently with what should be known before admission to college (Spelling, 2006, AASCU, 2002, Boswell, 2001). One response to closing gaps between secondary education and college instruction includes the creation of P-16 dual-degree credit options.

Continued trending and fluctuation in both quality and availability of P-16 dual-degree credit options varies significantly from state to state. High school students feel continual pressure from families and teachers to be admitted to quality institutions of higher education, to do well, and to graduate quickly (Howe & Strauss, 2000). The question before institutions of higher education is what level of high school education is necessary to prepare students for a “successful” college career (Spelling, 2006)? Defining “success” in terms of college GPA, class participation, retention, years to graduate or job placement will ultimately allow us to measure if dual-credit options are preparing students for higher education.

The transition from high school to college is an unsuccessful one for many students (Bailey, Hughes, Karp, 2002). Dual credit options are viewed as a bridge or conduit for the P-16 model; creating a transition between P-12 institutions and postsecondary institutions while students are in high school (Hoffman, Vargas, & Santos, 2008). Wisconsin’s Youth Options program was found to give students firsthand exposure to the requirements of college-level work, allowing them to gain high school and college credit simultaneously and have a “discernible impact on providing a wide array of curricular options” (Bailey, Hughes, & Karp, 2002).

### **Dual Enrollment Programs**

In the 1860’s Missouri became the first state to provide dual degree, accelerated instruction to students who demonstrated academic ability (The College Board, 2000). For the next century, accelerated education remained inconsistent, informal and isolated across the United States (Shannon, 2005). From the desire to educate accelerated

students came two methods of programs: Dual-enrollment programs and Advance Placement/Testing.

Minnesota has one of the oldest dual credit programs in the country, established in 1984 as the Postsecondary Enrollment Options Program (PSEO). Students pay no tuition or associated costs for this program and can take a maximum equivalent of two years of coursework through the program. Dual-degree options in Wisconsin and Minnesota are subsidized with state tax dollars. These programs have similar designs: students in high school may take Youth Options (YO) or Post-secondary Education Options (PSEO) for both high school and college credit. Upon successful completion of the course, the cost for the course is subsidized by the student's school district. However, each state defines what students are eligible for with concurrent courses. In Wisconsin, high school students must: receive approval from their school board prior to enrolling in a course, meet the guidelines of the school district (i.e. top 10% of class and ACT Score of at least a 24), select a course that is both eligible for high school credit and not available at the high school, and may limit the number of college credits received to 18 credits over two years.

Minnesota students are eligible to receive PSEO under similar guidelines as Wisconsin students with a few important differences. Again PSEO courses are available to high school juniors and seniors. According to the Minnesota Department of Education,

Each college and/or university that offers PSEO sets his or her requirements for enrollment into the program. Students may take PSEO courses on a full or part-time basis. For full-time PSEO students who begin in their junior year, it is possible to graduate from high school with enough college credits for an Associate's Degree. (Minnesota Department of Education, 2009)

This is just one example of how concurrent courses taught in Minnesota schools are different from those in Wisconsin schools. According to the Minnesota Department of

Education, concurrent courses can also be taught, “by qualified high school instructors,” unlike Wisconsin schools which require college instructors to teach college level courses.

In 2009 Mokher & McLendon completed the first empirical study of the P-12 policy antecedents, provided an analysis of the origins of state dual enrollment policies between 1976 – 2005. Citing the fact that secondary and postsecondary education in the United States have operated under independent policies for most of their history, a recent switch by states to establish P-16 policies has left questions as to why these policies are being adopted and what the effects of these policies are. The current trend toward the P-16 system has positive and negative ramifications.

Proponents of dual enrollment policies cite numerous benefits of these programs. Noted dual-enrollment benefits include: student acclimation to the academic and social demands of college, participation in DE programs prepare students better to succeed academically, DE programs shorten time to degree by allowing students to earn college credit in high school and decreasing the amount of time spent in lower-level college courses, save both time and money for students and their families, and the programs encourage students to pursue higher education, which in turn creates a more educated workforce (Mokher & McLendon, 2009).

Critics of DE programs argue that most high school students are not prepared for the academic rigor of college courses. There are increased costs associated with the implementation of DE programs to secondary level instruction (Bailey, Hughes, Karp, 2002) and the student that must be addressed, not only for tuition cost, but also for transportation and books (Mokher & McLendon, 2009).

Regardless of criticism dual enrollment courses have become widely accepted across the nation. Unlike Advance Placement (AP) and honors courses, dual enrollment courses target students headed to either two or four-year institutions of higher education. The National Association for Concurrent Enrollment Partnerships (NACEP) serves as the accreditation agent for concurrent enrollment programs. The Educational Commission of States (ECS) is a non-profit, non-partisan interstate compact that has been collecting data since 1965 regarding all levels of education to develop effective policies and practices directly related to improvements in education. The ECS has acknowledged that there is considerable variation in dual-credit enrollment among the 49 states with dual-enrollment programs. It has categorized four broad types: comprehensive; less comprehensive; limited and other.

The most substantial programs, “Comprehensive Programs,” are those which allow students to choose dual-enrollment courses with few restrictions. Students receive both high school and post-secondary credit with minimal or no direct cost. “Less Comprehensive Programs” are those which place more restriction on the types of postsecondary courses in which a student may choose to enroll. Tuition is covered if the course is taken for high school credit only; students must pay all cost if the courses are taken for postsecondary credit. Both Minnesota and Wisconsin are classified as “Less Comprehensive Programs”.

“Limited Programs” are programs with the most state oversight. Students are required to pay tuition costs for postsecondary options in addition to having more rigorous academic requirements for eligible courses. Finally, “Other” dual-enrollment

options programs are for the few states still developing programs or for those that do not have a program established.

### **Advance Placement**

As an alternative to DE courses, many secondary schools offer alternative course work and higher stakes college level test programs. Advanced Placement (AP) courses and International Baccalaureate (IB) courses are traditionally taught by high school teachers. A debate regarding AP instruction and instructor qualifications surfaced in the College Board. As a result the College Board created standards of instruction to respond to critics of AP exams. A study by the U.S. Department of Education concurred that a rigorous academic curriculum, similar to that offered by the College Board, is a strong predictor of college success (Adelman, 1999).

The most established and perhaps most widely used dual-degree credit option is Advanced Placement (AP), which is administered and overseen by the College Board. Advanced Placement was created through a series of 1951 studies by the Ford Foundation to assess the perceived gap between United States high schools and colleges (The College Board, 2000). The study concluded that some high school students were prepared and able to do very well at college-level work while still in high school. Furthermore the study recommended that the obligation to prepare students for college and fill the “gaps” between high school and college curriculum needed to be filled by high school teachers.

As a follow-up to this study, the Ford Foundation created an educational task force to develop curricula, academic standards, and exams to meet the “gap” in education. By 1955, the task force was able to create and implement the Advanced

Placement Program in the United States (The College Board, 2000). The AP Program was marketed as a standardized, accelerated, educational option for academically gifted high school students who needed more challenging course work than what was available in the traditional high school curriculum. Shortly after the creation of the program the College Board officially took over control of the AP Program, renaming it the College Board Advanced Placement Program (The College Board, 2000).

Accelerated students are allowed to register for Advanced Placement courses in their high schools. College credit is earned when students take the optional, standardized AP exam. Students receiving a passing score of 3-5 on the 5 point scale earn credit if the course is accepted by their post-secondary institution. A score of “5” indicates that the student is “extremely well qualified” to receive college credit for the course. A “4” means the student is “well qualified” to receive the credit; “3” is qualified; “2” is possibly qualified; and “1” means “no recommendation.” The assigning of credits is left to the discretion of the college to determine whether and how much credit is awarded.

Since the implementation of AP courses over 50 years ago, there has been a significant increase in students taking AP courses. In total, more than 1.2 million students have taken over 2.1 million AP exams (Sadler & Tai, 2007). Recent debate has surfaced among college faculty criticizing AP instruction and qualifications necessary for high school teachers instructing college material (New York Times, 2011). The number of students taking the AP exams has increased but so has the number of students who have chosen not to take the exam. Sadler & Tai estimate between 30% and 40% of the students who have taken AP courses have not taken the exam. In addition, the College Board recently created standards of instruction to respond to critics of AP exams and to

discourage educators from “teaching to the test,” resulting in a focus on principles of learning rather than memorizing facts, figures and dates (NYT, 2011).

Further criticism of the College Board’s Advance Placement program, and other high-level honors courses, was examined by Geiser & Santelices (2004) as a criterion for high-stakes admissions at a leading public university, the University of California Berkeley. The study supported the finding that student performance on AP examinations is strongly related to college performance. However, Geiser & Santelices’s study revealed students merely participating in AP and other honors-level courses in high school were not a valid indicator of college success yet were considered as part of admission criteria.

### **Student Persistence & Time to Degree**

There are multiple factors that impact students’ persistence in colleges and universities, including a student’s personality structure and the institution’s programming structure (Krhin, 2003). College academic success correlates with rank, GPA, high school grades, ACT, age, gender, ethnicity, Social Economic Status, and first generation student status (Hossler, Bean, & Associates, 1990).

A senior research associate at the Institute on Education, Melina Mechur Karp and the Economy/Community College Research Center at Columbia University, completed a 2006 study examining the City University of New York (CUNY) *College Now* dual-enrollment program. Karp’s dissertation focused on identity development among College Now students and her research on dual enrollment and credit-based transition programs is known nationwide (Karp, 2006). She examined dual enrollment programs and whether they encouraged students to matriculate and persist in college.

Karp conducted in-depth interviews with twenty-six first semester, dual-enrolled students of various backgrounds typical of the CUNY system. All courses were taught at the students' high school and not at a college campus, thus focusing on the college course work and not the collegiate environment. Karp (2006) concluded that eighteen students "shifted their concepts of the college student role over the course of the semester," and a smaller number, "began to integrate the college student role into their self-concepts" (p.80). Karp's research suggests that a single college course can help first-generation urban students matriculate and persist in college.

In 2006, Garvey conducted a qualitative study of eight students participating in Wisconsin's Youth Options Program (YO). The study explored the nature and quality of the students' experiences in the program. Students were interviewed during the completion of their YO experience and after the first semester of postsecondary education. In addition to exploring the student's perspectives on the YO program, this study also examined five college instructors' perceptions as to students' preparedness for college academics. All YO participants experienced benefits to participation in the program and in the transition into college. Benefits of the program included, "enabling students to experience the pace, content, and grading of college level courses while still in high school" (Garvey, 2006). Since the students took various YO courses, general benefits were seen as students transitioned to college expectations, but were also still embedded in their high school social group.

Student academic readiness for college has long been recognized as an important predictor of college completion (Alderman, 1999). College admissions officers at selective universities examine numerous academic factors during the admission process

such as: ACT/SAT Test Score, high school class rank/GPA, and rigorous high school coursework.

Because past performance is deemed a strong predictor of student performance, admissions officers carefully review applicants' transcripts to determine how well and to what extent the applicants have taken advantage of the school- and community-based opportunities available to them in high school. Admissions personnel generally view the presence of AP or IB (International Baccalaureate) courses on a transcript as an indicator of the applicant's willingness to confront academic challenges. (National Research Council, 2002, pp. 55).

Today, almost all selective colleges and universities give special consideration to AP and honors courses in admission decisions (Geiser & Santelices, 2004). Over the last ten years AP incentive programs have been directed at low-income and minority students. The focus of this program is to increase low-income and minority students' admission to college and improve the likelihood of graduation (Dougherty, Mellor & Jian, National Center for Educational Accountability, 2006).

In evaluation of the College Board's AP incentive programs, an AP Study Series was conducted. The first report, released in 2006, explored the relationship between college graduation rates and student participation and success in AP courses and exams by examining three scenarios: 1.) College graduation rates of AP and non-AP students; 2.) comparing the college graduation rate of AP and no-AP students after controlling for students' demographic and prior achievement and the demographics of their high schools; 3.) and examining the relationship between the percent of students from a high school graduating from college, and the school's percent of students in Advance Placement. The study concluded that the pass rates on AP exams was the best indicator of whether the school was preparing students to graduate from college.

## **Conceptual Framework**

Vincent Tinto is one of the major contributors to student retention theory. Tinto's research focused on why students departed from postsecondary institutions. Tinto's first theory was published in 1975, revised in 1987 and again in 1993. His model explains the transition and the separation of students from their pre-college environment to their college surroundings (Tinto, 1993). Tinto's original framework focused on a student's pre-college skills and knowledge as a primary indicator of persistence and degree attainment (Tinto, 1975). His revised model examined retention in regard to a student's post-matriculation experiences and the impact of those events on retention.

Tinto's 1993 model includes goals, institutional commitments and external commitments in addition to the pre-college preparation. Goals and Intentions are defined by Tinto as related to students' educational aspirations. Included in goals are students' desire to earn a college degree and their commitment to stay at the institution. Institutional Commitment is the psychological "fit" with students and their desired college (Tinto, 1993). Tinto refers to the "sense of belonging" both academically and socially as a primary element in connecting students' to their institution. Unknown campus culture must be explained or at the very least, introduced to new students to aid in their assimilation into the new environment (Tinto, 1987). Friends, family, work, and other obligations are external factors that distract students from school work and adjustment to college (Tinto, 1993).

At the center of Tinto's model are Institutional Experiences, categorized as Academic System and Social System. The combination of academic performance, faculty and staff interactions, extracurricular involvements and peer interaction are all

contributing factors to students' decision to persist at an institution (Tinto, 1993). Dual enrollment programs are transition-assisting programs which create faculty/student interactions. Advance Placement and DE programs help students make the academic and social transition to their new and possibly more challenging college life. Tinto notes a positive transition to college can increase student motivation and provide support for student persistence (1993).

Nancy Schlossberg's adult transition theory provides insights into college student development and the factors related to transition. It provides a framework that facilitates an understanding of transition and leads individuals to ways of coping with transition. Schlossbert, Waters, & Goodman (1995) defined a transition as "any event, or non-event that results in changed relationships, routines, assumptions, and roles" (p.27). Transition exists only if it is so defined by the individual experiencing it. The concepts of transition consist of a series of phases and terms of individuals "moving in," "moving through," and "moving out."

There are four major sets of factors, known as the 4 S's, that influence a person's ability to cope with a transition: Situation, Self, Support, and Strategies. Situation refers to the following factors: trigger, timing, control, role change, duration, previous experience with a similar transition, concurrent stress and assessment. Self factors are classified into two categories: persona and demographic characteristics (how an individual views life) and psychological resources (life-outlook and self-efficacy). Support factors really refer to social support: intimate relationships, family units, networks of friends, and institutions and communities. Strategies, the final factor, correspond to categorizing: modify the situation, control the meaning of the problem, and

managing the stress in the aftermath, and coping: information seeking, direct action, inhibition of action, and intrapsychic behavior. Successful copers demonstrate flexibility and use multiple methods. A practical application and common trigger of transition is the movement of students from high school to college.

Nevitt Sanford is noted as one of the first developmental theorists to examine a student's relationship between college experience and their personal development, a person-environment interaction. Sanford's (1966) theory, best known as Challenge and Support, has three developmental conditions: readiness, challenge, and support. Readiness is defined as an individual's ability to exhibit certain behaviors as a result of either internal processes as a result of maturation or beneficial environmental conditions. Student learning in college depends on an optimal balance of challenge support. Challenge is necessary to motivate personal exploration, risk-taking and reflection. Support is needed for moments of insecurity, vulnerability, and failure that can threaten a student and a delay development. The optimal amount of dissonance a particular person can manage varies on the quality of challenge, environmental support, and personal characteristics of the individual (Sanford, 1966).

### **Advance Placement & Dual Enrollment Effects on Retention and Time to Degree**

Delicath (1999) was a major contributor to the research of Dual Credit Programs. The primary purpose of Delicath's research was to determine if students' first year persistence and graduation rate was affected by credits earned in AP/DE Programs. The longitudinal study compared students at the beginning of each year (in the fall semester) and identified within the cohort the persisters, drop-outs, or graduates. There were

numerous independent variables measured in this study: gender, minority status, local/non-local students, ACT composite scores, DE credits, AP credits, student type (commuter versus resident), financial aid, family income level, and total family contribution.

The study examined first-time, bachelor degree seeking students who entered in the fall of 1989 through the fall of 1991. The study excluded non-resident aliens. There were 1,017 students in the fall 1989 cohort, 917 in the 1990 fall cohort, and 826 in the 1991 fall cohort, for a total of 2,760 students (Delicath, 1999). Delicath used linear regression to examine all the independent variables correlation to the dependent variable, persistence and time to graduation. Through numerous linear regressions, several factors were evaluated for correlation that confirmed that DE/AP credits did influence first year integration and graduation.

The National Research Center for Career and Technical Education completed a study in 2007 of the effects and efficacies of dual enrollment programs in two states, the State of Florida and in New York City, New York (2007). This organization focus is specific to Career and Technical Education (CTE). The study examined the short-term, immediate, and long-term effects of dual enrollment programs for all students and for CTE students. Short-term effects were measured by high school graduation and college enrollment rates. Immediate effects included the student's initial entry into postsecondary education, such as enrollment intensity, first-semester grade point average, and persistence to second semester. Finally, long-term effects were measured by student persistence in second year of postsecondary education, grade point average, and credit

accumulation. Additional variables were considered such as race/ethnicity, gender, socioeconomic status or number of dual enrollment courses taken.

The CTE research utilized the large-scale administrative datasets from the State of Florida (299,685 records) and the City University of New York's (CUNY) College Now Program (2,303 records). The analysis used non-experimental methods including ordinary least squares and logistic regressions, and controlled for various student and school characteristics. There were several outcomes from this analysis such as participation in dual enrollment being that were related to students enrolling in college, persisting, earning higher college grade point averages and earning more credits in college. The study concluded that there was evidence that dual enrollment can be an effective transition strategy for a range of students and that additional research should be conducted on dual enrollment programs (NRCCTE, 2007).

A 2005 study of Lake Superior State University (LSSU) examined the implementation of the Public Act in Michigan which allowed high school students to earn college credit (Shannon, 2005). The study included 180 students admitted to Lake Superior State University from fall 2002 to fall 2006 with AP/DE credit and 227 first-year students without any AP or DE credit. The data collected from LSSU's information system was analyzed with these two groups. The results of the study indicated that dual enrollment students differed from the control group in many pre-college attributes such as higher GPAs, higher high school rank, and higher ACT scores. The results indicate students with Dual Enrollment had higher first and second semester college GPAs, higher five-year graduation rates and shorter time-to-degree attainment than students without these credits (Shannon, 2005).

A similar study by Harrington (2005) examined first-time freshmen students with dual or concurrent enrollment credits who were enrolled at Arizona State University during the fall 1998. Harrington used logistic and linear regression analysis to study the independent variables gender, ethnicity, SAT scores, transfer credit type (dual/concurrent enrollment), AP credits, housing degree type and high school GPA as predictors to student persistence, successful graduation, and time-to-graduate. The results found students who did participate in dual and concurrent enrollment did have better persistence, better graduation, and shorter time to degree, providing insight in the ability to predict student outcomes. Harrington also notes that students who participated in AP/DE courses had better high school preparation, higher GPA and SAT scores in high school than their peers who did not have AP/DE credit.

Horsch (2008) examined student characteristics that predict graduation and retention rates. Through use of regression analyses and national consortium data, he explored various institutional characteristics such as size, selectivity, housing and diversity related to retention and graduation rates of full-time students. Through his regression models, he confirmed Astin's findings that Admission Test Scores (ACT/SAT Scores) were most predictive of six-year graduation rates, followed by students' ranking in the top quarter of their high school classes, institutional resources and percentage of students living on-campus. Moreover this study, "did not identify race/ethnicity or gender factors, that are associated either positively or negatively with student success rates *after controlling for academic inputs*" (Horsch, 2008).

## **Research Design**

There are several different approaches to researching student retention and time to degree including quantitative, qualitative or mixed-method design. Qualitative research requires researchers to state research questions allowing for broad themes and patterns to emerge around a central question (Creswell, 2009). Qualitative research employs different philosophic assumptions and interpretation that allows researchers to see specific events unfold (Creswell 2009). This research method is best used to examine experiences from the participant's perspective where numerous factors contribute to decisions and human interactions that are not easily quantifiable (Gay & Airasian, 2000).

Quantitative research is based on testing objective theories by examining the relationship between variables. The variables can be measured using statistical instruments to determine the relationship between the variables and to what degree the relationship exists (Creswell, 2009). Any combination of qualitative and quantitative research, use of both philosophical assumptions and numerical data, is referred to as a mixed method approach. The focus of this research is centered around the relationship of AP/DE programs to student persistence from freshmen to sophomore year, college GPA and time to degree. This is a non-experimental study examining historical data and best utilizing a quantitative approach.

The use of historical data allows for a longitudinal study. This research used longitudinal data for students from entrance into college, matriculation, persistence in college and time to graduation. Longitudinal studies collect data over a set period of time while measuring information two or three times in order to measure the change over that time. In this study historical, preexisting data was collected from student records,

allowing for a valid source of data. Longitudinal data allows the researcher to compare the same subjects at continuous intervals over an extended period of time; therefore, it has high internal validity and provides good quantitative, descriptive and analytical data for the study of attrition and retention (Diggle, Liang, & Zeger, 1995). Concerns for using pre-existing data include the demand for file data accuracy and consistency of data captured within files over time (Diggle, Liang, & Zeger, 1995). Finally, historical data allows the tracking of students as a unit or cohort by year. The data collected starts each cohort as they enter college and measures until the student graduates or withdraws from the university.

## **CHAPTER III**

### **METHODOLOGY**

This chapter describes the method and procedures used in this study, including sample strategy, description of population, description of sample, description of variables and data analysis. The data gathered for this study were collected from the University of Wisconsin – La Crosse via the Office of Institutional Research. The Statistical Package for the Social Sciences (SPSS) Version 19.0 was used to analyze the data.

#### **Sample Strategy and Characteristics**

Data analyzed in this study were obtained through the Institutional Research Office using data in the University Student Information System. The data retrieved were used to create the following variables.

1. The original sample included all students entering from 1992 through 2002 who graduated from UW-La Crosse
2. AP, IB, CLEP or Dual Enrollment Credit earned prior to entering college
3. Grade point average at end of first semester and year in college
4. Last semester attending/graduation from UW-L

Each student record in the sample provided information to compare the persistence of students with AP/DE credits to those without AP/DE credits. Other forms of pre-college credit, such as International Baccalaureate (IB) and College Level Examination of Placement Credit (CLEP) were included in this initial sample. After evaluating the sample, it was noted that less than 20 students of 18,135 records had

alternative dual enrollment credit such as IB or CLEP credit. Consequently, these students were included in the sample but considered non-AP/DE or traditional students.

### **Description of Population**

The University of Wisconsin-La Crosse (UW-L) is a public, comprehensive institution within the University of Wisconsin System (UW). Founded in 1908, UW-L is the fourth largest comprehensive institution in the UW-System (UW-System Data Set, 2011) with a total of 9,073 undergraduate students. The campus spans 119 acres, which makes it the second smallest comprehensive university by area in the UW-System. UW-L is located in the city of La Crosse in western Wisconsin. The student body is predominately White with 7.3% of the student population being of diverse racial and ethnic backgrounds and 3.8% of the population being international students. Eighty-one percent of the student body are residents of Wisconsin and 11% are from Minnesota. UW-L employs 546 instructional staff, 414 of which are full-time faculty, with 76% holding terminal degrees catering to over 90 undergraduate academic programs of study.

### **Description of Sample**

This research used a non-stratified, longitudinal sample comprised of cohorts of students starting in Fall 1992 until Fall 2002 (ten separate freshmen classes). The sample consisted of all 18,135 undergraduate students who attended UW-L during that time. The selected sample consisted of all first-time, traditional first year students who had earned AP and/or Dual-enrollment credits prior to enrolling at UW-La Crosse from 1992 - 2002. All students included in this study graduated from high school and enrolled at University of Wisconsin-La Crosse (UW-L) as their first university after high school. During the fall of 1992, 51 students participated in Wisconsin Youth Options, 10 students

participated in Minnesota Post Secondary Education Option and one student received credit for Advance Placement. Ten years later (2002), 175 students had participated in Wisconsin Youth Options, 62 students had participated in Minnesota Youth Options and 385 students had participated in Advance Placement.

### **Description of Variables**

In this study the independent variable serves as the predictor variable. Measuring AP credit, DE credit or both AP and DE credit provided a prediction for students' persistence and time to degree. The dependent variables were the observed variables such as persistence in college, and time to degree.

### **Independent Variable**

For the purpose of this study *traditional student* was defined as any new freshmen student who did not earn AP/DE credit. Students who were not traditional students earned college credit in concurrent courses. *AP/DE Students* earned either Advance Placement and/or Dual Enrollment credit. *Advance Placement Credit* is college credit hours awarded by the university to first-time, first-year students for completing a content area, standardized test. UW-La Crosse awards credit to AP test scores of 3 or higher. *Dual Enrollment Credit* is college credit awarded to first-time, first-year students for completing college course work at or through an accredited college or university. Students earn credits by taking the course at the high school or at a post-secondary institution simultaneously.

### **Dependent (Observed) Variables**

A dichotomous categorical variable was created to measure student persistence from first to second semester. Students who were eligible (first semester GPA above

1.60) to persist from one semester to the next and graduated were given the numerical value of “1”. Students who were not eligible to persist (first semester GPA below 1.60) who subsequently withdrew were given the numerical value of “0” in the dataset.

A categorical variable was created to measure student time to graduation. A student’s time to degree is measured from their entrance into college until degree completion at 4 or less, 5 or less, 6 or less, and 6+ years. Students were grouped into four groups: students with AP credits (numerical value “1”), student with DE credits (numerical value “1”), those with both AP/DE credits (numerical value “1”) and those with no AP/DE credits (numerical value “0”).

### **Data Analysis**

A Pearson Chi-Square ( $\chi^2$ ) test of Independence was used to examine the relationship between AP/DE credits and student persistence and AP/DE Credits and time to degree. “A significant chi-square is interpreted as showing a relationship between the two variables” (Bruning & Kintz, 1997, p. 297). Both null hypotheses were tested at the .05 level of significance.

The  $\chi^2$  test of independence assessed whether paired observations on two variables, expressed in a contingency table (or cross tabulation), were independent of each other. Thus a Chi-Square Test was used to compare the actual (or observed) frequency of college persistence of students with AP/DE Credit to the expected frequency of the persistence of traditional student variable. Furthermore, a Chi-Square Test was used to compare the actual (or observed) frequency of college graduation rates of students with AP/DE credit to college graduation rates of traditional students.

## **CHAPTER IV**

### **RESULTS OF DATA ANALYSIS**

The purpose of this study was to evaluate the difference in persistence and time to degree of college students with AP/DE credits to traditional students with no AP/DE credits. Data from students who earned credit in AP/DE programs were analyzed to determine if AP/DE credits were predictors of student persistence and time to degree.

#### **Descriptive Data**

Data extracted from the UW-L student information system consisted of first time, first-year students starting in the Fall 1992 through the Fall 2002. These cohorts were full-time, degree seeking students who were not international students or transfer students from another institution. In total 18,135 students made up the sample. This section describes demographic information including credits earned before enrolling at UW-L, ethnicity, gender and ACT scores.

#### **Traditional Students and AP/DE Participants of the Sample**

As shown in Table 1, the overall sample was comprised of 14,784 traditional students who did not participate in AP/DE programs (81.5%), 1,978 students who participated in AP programs (10.9%), and 1,676 students who earned credit in dual enrollment programs (9.2%). Approximately 22% of the sample students earned credit in AP/DE programs prior to attending UW-L.

Table 1. Sample demographic data by Credit Description

	Frequency	Percent
Traditional	14,784	81.5%
Advance Placement Credits	1,978*	10.9%
Wisconsin Youth Options	1,676	9.2%
Minnesota Postsecondary Education Options	423	2.3%

\* Student can take both AP and DE courses. The frequency and percentages are from the total population that took at least AP, YO or DE.

**Sample Characteristics**

As shown in Table 2, 11,229 students (61.9%) identified as female and 6,906 (38.1%) as male.

Table 2. Sample demographic data by gender

	Frequency	Percent
Female	11,229	61.9
Male	6,906	38.1
Total	18,135	100

**Race of Sample**

Table 3 describes the race of the sample. The majority of the sample identified as White/Non-Hispanic (94.4%), representing 17,127 students. There were 220 students who identified as Hispanic (1.2%) and 220 students who identified as Other Asian (1.2%) with an additional 182 students identifying as Southeast Asian (1.0%). The final Racial

categories, all below 1.0%, were: African American at 171 students, 0.6% Native American at 104 students, and 0.6% of Unknown Race/Ethnicity, equal to 111 students.

Table 3. Racial Description of Sample

	Frequency	Percent
African American	171	.9
Hispanic	220	1.2
Native American	104	.6
Other Asian	220	1.2
SE Asian	182	1.0
Unknown	111	.6
White/Non-Hispanic	17,127	94.4
Total	18,135	100.0

### Test of Hypotheses

This section analyzes the effects of AP/DE credits on student persistence. The null hypothesis is presented, followed by the inferential analysis and the results of the analysis.

#### Dependent Variable 1: Student Persistence

##### Null Hypothesis One

The first null hypothesis stated that no statistically significant difference existed in the first to second year persistence of traditional students, who have not earned AP or DE credit, from students who have earned AP or DE credit. To test this hypothesis a two by two cross-tabulation of traditional students and students with AP/DE credit and students who did not or who did persist was created, as shown in Table 4. The sample was coded into four categories including students with AP/DE who persisted, students

without AP/DE who persisted, students with AP/DE who did not persist, and students without AP/DE who did not persist. A Pearson Chi Square test was used to determine if any significance existed between the categories.

Table 4. Persistence of students with and without AP/DE credits

	Students did NOT persist	Students did persist	Total
Students without AP/DE Credit (Traditional Student)	6.5%	93.5%	100.0%
Students with AP/DE credit	1.5%	98.5%	100.0%
Total	5.6%	94.4%	100.0%

The difference between the two groups was found to be statistically significant ( $\chi^2=128.5$ ,  $df = 1$ ,  $p < .01$ ): thus, the null hypothesis was rejected and the research hypothesis was accepted. There was sufficient evidence that having AP or DE credits affects the persistence rate of students.

**Dependent Variable 2: Time to Degree**

This section analyzes the effects of AP/DE credits on college student time to degree. The null hypothesis is presented, followed by the inferential analysis and the results to the analysis.

**Null Hypothesis Two**

The second null hypothesis stated that no statistically significant difference existed in time to degree between college students who have not earned AP or DE credit and those students who have earned AP or DE credit.

In testing this hypothesis, a two by four cross-tabulation of traditional students and students with AP/DE credit and time to degree was created as shown in Table 5. The

sample was coded into eight categories: students with AP/DE who graduated in 4-years or less; those with less than 5 years but more than 4 years; those with less than 6 years but more than 5 years; those with 6-years or more; and students without AP/DE (traditional students who graduated in 4-years or less, less than 5 years but more than 4 years, less than 6 years but more than 5 years, and 6-years or more). A Pearson Chi Square test was used to determine if any significance exist in the categories.

As Table 6 shows, 33.1% of the sample without AP/DE credit graduated in 4 years or less, while 51.6% of the sample with AP/DE Credits graduated in the same time frame. For students who graduated in more than 4 but less than 5 years, 4,278 of the 8,489 students without AP/DE credit graduated (50.4%) compared to 935 of the 2379 students with AP/DE Credits (39.3%) who graduated in the same time frame. Overall 99.4% of students who had AP/DE credit graduated in 6 years or less while 97.3% of students who did not have AP/DE credit graduated in six years or less.

Table 5. Graduation Rate of students with and without AP/DE credits

	Time to Degree (in years)				Total
	4 or less	4 to 5	5 to 6	6 or more	
Students without AP/DE Credit (Traditional Student)	2810 (33.1%)	4278 (50.4%)	1175 (13.8%)	226 (2.7%)	8489 (100.0%)
Students with AP/DE credit	1227 (51.6%)	935 (39.3%)	202 (8.5%)	15 (0.6%)	2379 (100.0%)
Total	4037 (37.1%)	5213 (48.0%)	1377 (12.7%)	241 (2.2%)	10868 (100.0%)

The difference between the two groups, was statistically significant ( $\chi^2=295$ , df = 3,  $p < .01$ ). The null hypothesis was rejected and the research hypothesis was accepted.

## **CHAPTER V**

### **SUMMARY, DISCUSSION AND RECOMMENDATIONS**

This chapter will summarize and interpret the results of this study, offer implications and recommendations emerging from the results, comment on the limitations and suggestions for additional research, and provide a conclusion. The purpose of this study was to examine the effects of AP/DE credits on student persistence and time to degree at the University of Wisconsin-La Crosse (UW-L). Participation in the AP/DE programs was analyzed as a dichotomous variable; the student either had earned AP/DE credit or had not.

The main results from this study indicate that college students who have earned AP/DE credit persisted at a higher rate and experienced a shorter time to degree than their counterparts. This result confirms the research of Delicath (1999) who found that Advance College Credit significantly influenced students' ability to persist and graduate. The 2004 longitudinal study of Texas's dual enrollment program concluded that students who concurrently enroll in postsecondary courses are twice as likely to graduate from college in four years than their counterparts (O'Brien & Nelson, 2004). Karp et al. (2007) asserted that dual enrollment can lead to positive student outcomes warranting the expansion of dual enrollment programs. Shannon (2005) and Harrington (2005) both confirmed the positive effects of dual enrollment courses and concluded that students who participated in dual enrollment programs were more likely to graduate than traditional students.

The College Board has been tracking and promoting the benefits of Advance Placement Programs for several years as student participation in the program has increased (The College Board, 2012). Previous studies by the College Board demonstrated that students who earned at least a “3” on the AP exam were more likely to earn a bachelor’s degree (The College Board, 2006). Furthermore, the present study corroborated Valentine’s (2011) suggestions that students who participated in *both* AP and/or DE programs had higher retention and four-year graduation rates than those students who did not participate in either program.

### **Implications and Recommendations**

The results of this study hold several implications for student affairs practitioners, administrators, faculty, and for university and secondary education policy. First, student affairs practitioners and college administrators should be informed of the importance of AP/DE credit programs relative to student persistence, time to degree, and how these programs are managed at their respective institutions. College educators should work with secondary schools to expand Dual Enrollment options in rural areas so that post-secondary institutions benefit from a well-prepared group of students who have had widespread access to college coursework while still in high school. Admission officers should communicate with high school counselors regarding the importance of college preparation and AP/DE options and their strong effects on critical college outcomes. Communication between secondary and postsecondary institutions is vital and should include annual newsletters, emails, special recruitment events, university websites, institutional blogs, and other social media. It is the college administrators’ responsibility to disseminate this information and provide resources for secondary institutions.

College administrators, in cooperation with faculty, must evaluate the effectiveness of AP/DE course work. Utilizing administrative/recruitment policies and growth initiatives, enrollment service offices and secondary institutions must review and create ways to encourage highly qualified secondary students to participate in AP/DE courses.

Students who have completed AP/DE courses may be more academically prepared for the academic rigor and social environments of college than traditional students. Student affairs personnel including counseling staff, residence life professionals, and activities officers should identify students who have taken AP/DE courses and employ them as peer mentors for incoming students in academic or social ways. In addition to being academically prepared, students who have completed dual enrollment courses may have already been exposed to the social aspects of college and may experience less stress, emotional pitfalls or anxiety from being away from home. Student affairs professionals will benefit critically from the assistance of well-adapted students in such positions as Resident Assistant (RA), campus tour guides, orientation leaders, or hall desk receptionists. Such engagement builds strong connections between the AP/DE students and their institutions and ensures that AP/DE students provide mutually-meaningful services to their peers and to the institutions.

Additionally, college faculty and other instructional staff should identify students with AP/DE credit as academically adjusted students ready for additional responsibilities in their academic endeavors. New freshmen with significant postsecondary AP/DE credits can be identified for opportunities such as serving as teaching assistants in classes, for tutoring less prepared students, research fellowships, honors courses or undergraduate

research opportunities. Early identification of AP/DE students' academic ability will provide strategies for early identification and selection of major programs and will aid faculty in recruiting well-prepared students for their discipline. According to research on high impact activities, challenging students appropriately engages them more meaningfully with their institution and results in a host of positive student outcomes.

Finally, the present study implies policy recommendation at the secondary level, and for college enrollment services. Policies need to be established at the secondary level to encourage and ensure that quality AP/DE courses are offered to all students in preparation for college. Even though the enrollment in AP/DE credits has increased, early identification at the secondary level is important to prepare students for postsecondary institutions. College enrollment services must encourage students' participation in AP/DE credits as college preparation. Admission decisions could be weighted in favor of students who complete academically rigorous course work, such as AP/DE courses and receive credit for these courses.

### **Limitations of the Study**

This study has specific limitations. Despite the large sample size, this study used a dichotomous analysis measuring only 10 distinct cohorts (1992-2002) at UW-L of new freshman and the students who graduated from the institution. This study did not track students who began at UW-L and finished at another institution. Finally, this study did not examine other academic factors that may have prepared students to persist or earn a college degree. Generalizing the results from this study beyond the context of Master's comprehensive institutions should be done cautiously.

New students at this institution fit the general, well-prepared academic profile of the university's freshmen cohorts. As a result, these results may not transfer to institutions that have higher academic standards than the research site or to those with lower academic profiles of entering students.

The study did not measure transfer students who transferred to or from UW-L and persisted in college at UW-L or elsewhere and their time to degree. Data are now available through the National Student Clearing House to track students' persistence and time to degree regardless of the institution at which they start. In following a student's full academic path we can analyze if a student is voluntarily withdrawing and choosing a better fit rather than failing out or not completing college.

In order to examine individual characteristics and the weight of different characteristics on students' persistence or time to degree different models should be examined, such as predictor models in statistical regressions. Regression analysis can be used to weigh numerous independent variables not measured in this study such as high school rank, ACT/SAT Scores, college course loads, or gender. Furthermore, programs that exceed the traditional time to degree, four years and 120 credits, such as Teacher Education and Accounting majors vested in the Certified Public Accountancy program (CPA), which require 150 credits for certification exam, were not included.

### **Suggestions for Future Research**

In concluding this study, suggestions for further research will expand the knowledge about the effects of AP/DE programs.

First, AP/DE credits should be examined as individual elements of students' success at college. Additional and continuous research should be conducted with two and

four year college graduates who did and did not participate in AP/DE courses in order to learn about the impact of these programs and specific AP or DE courses on students' post-secondary majors and career choices.

An analysis of the number of credits students earned prior to entering college should be conducted. The present study did not examine the number of credits students received prior to starting college. Additional research is necessary to determine if there are a critical number of Advance Placement and/or dual enrollment credits individuals need to persist or graduate before their peers.

A major shortcoming of this research is the non-random nature of AP/DE program participation. Students who choose to participate in these programs had to exhibit some preexisting motivation to take advance courses and continue to college. As a quantitative study this research did not exam the experiences students had while enrolled in dual enrollment courses or their motivation for taking these courses. Students who completed dual enrollment courses may perceive having a different connection to the institution, faculty, and material covered in a course than their counterparts. A qualitative review of AP/DE students may provide insight into the challenges and advantages these students have when compared to their college and high school peers.

This study sampled a large number of students in a longitudinal cohort fashion at a single institution. Further research should include a more system wide approach that includes a diverse pool of respondents at a variety of institutions to include more underrepresented students. As the College Board continues to promote AP course offerings as a tool for accessing higher education and the national demographic changes

additional research needs to address the AP/DE experiences of racially and ethnically diverse students.

Finally, future research should continue analyzing the effects of AP and/or dual enrollment courses on student persistence and time to degree but expand the analysis to include different institutional types (e.g., private, two-year, or for-profit institutions) in a variety of geographical regions of the United States to see if the effects of AP/DE on persistence and time to degree continues to hold.

### **Conclusion**

Student enrollments in Advance Placement and Dual Enrollment have grown in popularity since their inceptions over 50 years ago. Student preparation in AP courses has led to 61.6% of college students having taken at least one AP course in 2006 (Sadler & Tai, 2007). In the 30 years since dual enrollment has been available to high school students roughly 506,000 secondary students have participated in these programs nationwide (Porter, 2003).

Major incentives for students to participate in AP/DE courses aside from selectivity of college admittance, is preparation for college course work (Geiser & Santelices, 2004) and decrease in student time to degree (Dougherty, Mellro, Jian, 2006). Regardless of student motivation for taking AP/DE courses more dramatic is the effect AP/DE courses have on the general trends in college student persistence and student time to degree. Even though a majority of graduating high school seniors indicated they plan on earning a college degree, in 2001 only 28% of high school graduates held a degree (NCES, 2001). Forty-four percent of 2007–08 first-time bachelor's degree recipients completed a bachelor's degree within 48 months of their initial postsecondary enrollment,

another 23 percent within 49–60 months, and an additional 9 percent within 61–72 months (NCES, 2011). Administrators are aware that it is more cost effective to retain current students than continuously recruiting and enrolling new and transfer students (Delicath, 1999). Faculty witness the benefits of academically prepared students with AP/DE credits in their classes allowing for less remedial course instruction and accelerated entry level course. On the other hand, high school seniors select advanced high school course work to start college courses early, and prepare for selective college admissions (Garvey, 2006). The economic benefits of completing college can reduce student loan debt.

Dual enrollment and AP programs have benefited student admissions, fulfilling college requirements (Alderman, 1999) and possible early graduation. The results of these programs have been used in college admission decisions, and play a role in college student persistence but the real winners of these programs are the students who persist in college and graduate faster than traditional students.

The results of the present study showed that students who earned AP/DE credit were statistically more likely to persist in college and to graduate more quickly than their non AP/DE counterparts. These findings provide positive support for current AP/DE programs as a strategy for student persistence and college completion. The findings have implications for student affairs practitioners, administrators, faculty, and for university and secondary education policy. First and foremost, AP and dual enrollment programs should be more widely supported. These programs are increasingly popular (The College Board, 2012) and should be extended to encourage college access and success for a broad range of students.

College educators must identify ways to communicate this to secondary school students, faculty and administrators and partner with them to provide these opportunities to as many students as possible. If we do this effectively, we will meet the completion agenda of the federal and state governments and aid individual students to be more successful while keeping their college expenses as low as possible.

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