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A Comparative Study of High School Academic Paths, Grade Point Averages, and ACT

Composite Scores as Predictors of Success at Walters State Community College

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A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Education

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by

Jill C. Reuschel

May 2009

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Dr. Louise MacKay, Chair
Dr. Cecil Blankenship
Dr. James Lampley
Dr. Terry Tollefson

ABSTRACT

A Comparative Study of High School Academic Paths, Grade Point Averages, and ACT

Composite Scores as Predictors of Success at Walters State Community College

by

Jill C. Reuschel

With an overwhelming number of students attempting to enter college after high school, the

competitive nature of college admissions continues to grow.   Colleges and universities are

attempting to find the appropriate means to adequately predict collegiate success. Common

methods of this prediction have come from a variety of sources most of which are the use of high

school performance and standardized college admissions testing. Walters State Community

College was chosen for this study because of its open door admission policy that allows for

variability in high school academic paths as well as grade point averages and ACT scores

students earned in high school.

The purpose of this study was to examine the associations between high school grade point

averages, high school academic paths, ACT scores, and 1st-year college success as measured by

the number of college credit hours completed and college grade point averages at the end of the

1st semester and at the end of the 1st academic year. The study included 797 high school

students entering the college in fall semester 2007 and completing their 1st academic year in

spring semester 2008.

The major findings of this study included: university Path students were (a) more likely to have a

higher high school grade point average, (b) more likely to have a higher college grade point

average and have earned more college credit hours at the end of the 1st semester and year, and

(c) were less likely to enroll in remedial and developmental courses. Additionally, a moderate positive relationship was found between high school grade point averages and college grade point averages at the end of the college academic year. High school grade point averages and ACT scores were found to be statistically significant in predicting the number of college credit hours earned at the end of the college academic year.

DEDICATION

This work is dedicated to my Lord and Savior, *Jesus Christ,* who through His Holy Spirit granted me the peace and calm reassurance that NOTHING is impossible with God. Thank you for the numerous small prayers that never went unanswered. Without You, my life would be nothing and this process would not have been possible.

To my husband, *John Allan Reuschel,* words cannot begin to express the immense gratitude I feel for your unfailing support throughout this process, your patience with me even when I drained the bank account to pay for my tuition, your encouragement when all I wanted to do was cry, and the countless times you offered to type my paper. Our love and the laughter we share are indescribable. You are my best friend and without you my life would be incomplete. You of all people deserve this degree more than me… Dr. John Reuschel has a nice ring to it.

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CHAPTER 1

INTRODUCTION

For many years, numerous attempts have been made to determine valid and reliable measures to predict college students' success. According to the National Center for Education Statistics (2008), college enrollment reached a record level of 18 million in the fall of 2007 with the expectation that enrollment would increase by 14% between the fall of 2007 and the fall of 2016. Barth, Haycock, Huang, and Richardson (2001) noted that although the number was rising, "Of the number of high school graduates who attempt postsecondary education, more than one fourth of freshmen at 4-year colleges and nearly half of those at 2-year colleges do not even make it to their sophomore year" (p. 6). The goal of most colleges is not only to recruit but also to retain students who will be successful at their institutions. Therefore, with the increasing number of students attempting to enter colleges and universities, it is imperative that college and high school administrators and faculty realize the importance of preparing students for postsecondary work and choosing the appropriate measures in order to analyze preparedness. Burton and Ramist (2001) maintained, "Colleges and universities need to know whether traditional admission measures adequately and fairly evaluate students with different backgrounds and students who present unusual credentials" (p. 2).

There are multiple measures to determine college readiness including American College Testing (ACT) scores, Scholastic Aptitude Testing (SAT) scores, high school grade point averages, the rigor of high school courses taken, and such noncognitive factors as financial need, motivation, family encouragement, and student support services provided by the college. Currently, significant emphasis is placed on the use of standardized test scores and high school grade point averages as universal measures of college preparedness. Although both are used in the assessment of college preparedness, each possesses different qualities. The high school grade point average measures both cognitive and noncognitive components (efforts, attendance,

conformity, and motivation) and the ACT score relates primarily to the cognitive components of the college grade point average (Noble & Sawyer, 2004). Evidence shows that both high school grade point average and ACT or SAT scores predict college academic performance (Geiser & Santelices, 2007; Harackiewicz, Barron, Tauer, & Elliott, 2002; Noble & Sawyer, 2002). Yet, according to Geiser and Santelices (2007);

> High school grades are often viewed as an unreliable criterion for college admissions, owing to differences in grading standards across high schools, while standardized tests are seen as methodologically rigorous, providing a more uniform and valid yardstick for assessing student ability and achievement. (p. 1)

Two college entrance exams are most commonly used for admission purposes: American College Testing Program (ACT) and Scholastic Aptitude Testing (SAT) produced by Educational Testing Service. SAT tests are taken primarily in the Northeast, Florida, and California. The ACT assessment (the focus of this study) is predominantly taken by students in the Midwest and parts of the South including the state of Tennessee. "The ACT Assessment provides an objective measure of students' academic achievement and readiness for college and includes four curriculum-based tests: English, mathematics, reading, and science" (Allen & Sconing, 2005, p.1). In addition to test scores, high school grade point averages are used in isolation or in conjunction with scores as predictor criterion for supporting high stakes judgments made for admission decisions (Willingham, Pollack, & Lewis, 2000).

Throughout the senior year, from choosing courses in high school, taking the ACT test, and patiently waiting for acceptance letters in late spring, the college admissions process can quickly become one of the most influential times in the lives of young people. Willingham et al. (2000) maintained, "Many of the most important educational decisions we make about young people concern those summative, often irreversible, judgments regarding student entry or exit from programs or institutions" (p. 1). Kovacs (2008) summed up the process in these words:

> College admission has become the "College Game," complete with "Winners" and "Losers," those powerful measures of personal achievement, worth and merit--with halo effects on parents, schools, and communities. "Who I am" gets intermingled with Who I could/should be as determined by that college acceptance, with that ranking, in this pecking order of prestige in my particular school, family, or community. (p. 16)

Statement of the Problem

The purpose of this study was to examine the associations between high school grade point averages, high school academic paths, ACT scores, and 1st-year college success as measured by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year. This study focused on whether or not high school academic path, ACT scores, high school grade point averages, or a combination of such variables positively impacted collegiate success. Within this study, two subgroups were examined--students who completed the university path and those who completed the technical path. According to the Tennessee Department of Education (2008), in the state of Tennessee, 20 total credits are required for high school graduation. These 20 credits consist of core curriculum units, specific path (university or technical) requirement units, and electives. Core curriculum includes four units of English, three units of math, three units of science, three units of social studies, and one unit of health, physical fitness, and wellness. University path requirements include two units of the same foreign language, algebra I, geometry, algebra II, and one unit of fine arts. Technical path requirements include four units of a technical program of study. Technical path students are not required to complete the foreign language credits, the fine arts credit, or the algebra II credit.   For this study, the scores of a cohort of students enrolled from fall semester 2007 to spring semester 2008 in a rural East Tennessee community college, Walters State, were reviewed.

Research Questions

The following research questions guided the study:

1. Is there a difference in mean grade point averages upon high school graduation between students who enrolled in the university path versus the technical path?

2. Is there a difference in the mean college grade point averages at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

3. Is there a difference in the mean college grade point averages at the end of the 1st academic year at Walters State Community College between freshmen who enrolled graduated from the university path versus the technical path at the high school level?

4. Is there a difference in the mean number of college credit hours completed at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

5. Is there a difference in the mean number of college credit hours completed at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

6. Is there a difference in the percentage of students taking remedial-developmental courses between freshmen who graduated from the university path versus the technical path at the high school level?

7. To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: college grade point averages at the end of students' 1st academic year at Walters State Community College?

8. To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: number of college hours earned at the end of students' 1st academic year at Walters State Community College?

Significance of the Study

At a time when our nation's participation in the sophisticated global economy requires citizens to have completed some form of education beyond high school, it is imperative that our high schools and colleges work together to ensure postsecondary success. Hoffman and Vargas (2007) offered further support by stating, "Today, postsecondary education is the best insurance of economic health for young people, their communities, the 50 states, and the nation" (p. 24). Yet, Steinberg and Almeida (2008) stated:

> Students who struggle in high school too often find themselves without opportunities, quality educational options, or a guiding hand to help them catch up and get back on track to a college ready high school diploma. Absent such supports, many of them leave high school without a credential and enter into a futile search for other pathways to a postsecondary credential and family sustaining wage (p. 3).

The challenge for high schools to be successful in not only graduating students but ensuring that each student is prepared to succeed at the postsecondary level has presented itself in the 1st decade of the 21st century (Steinberg & Almeida, 2008). National and local policymakers are spending a great deal of resources on educational reform through curriculum restructure and in choosing the appropriate assessment tools by which to measure students' college-level readiness. Steinberg and Almeida recognized the importance of combined efforts by state and federal initiatives and noted:

> Although the American education system was built on the promise of a free public education, the system has never been held accountable for all young people completing high school, let alone finishing fully prepared to pursue further education. But this is exactly what demographers and economists are telling us must be done if the nation is to be competitive in a global economy driven by technological innovation and if young people are to take productive roles in that economy, enjoying a good quality of life and contributing to healthy communities. (p. 1)

The lag that Tennessee has experienced in academic success for many years as noted by low attainment of postsecondary degrees, ACT scores, and reading and math achievement has recently gained the attention of policymakers (Nixon & Bunch, 2007). Governors and state policymakers have begun to give added attention to secondary and postsecondary completion rates in this state in comparison to other states because of the observed impact of globalization

and deindustrialization on state economies (Steinberg & Almeida, 2008). Thus, how is it that state and local officials monitor the effectiveness of their initiatives to produce successful graduates prepared to enter and succeed at the postsecondary level? This researcher investigated the use of high school courses, high school grade point averages, and ACT scores as predictors of postsecondary success in an effort to assess the effectiveness of such measures for college and high school administrators. Although colleges and universities vary in institutional goals, the goal of enrolling and maintaining successful graduates is common to all.

However, educators at the secondary and postsecondary levels must first understand the factors of college academic success in order to facilitate positive student outcomes. Tennessee's legislators and government officials are invested in the education and progress of its residents. Through this commitment, Tennessee has recently adopted the Tennessee Diploma Project to raise expectations and align high school graduation requirements to prepare students for entry into the competitive world of college or work. Such educational reform efforts at the state and national level continue to place an increasing amount of pressure on secondary and postsecondary administrators, teachers, and students to perform. This pressure to perform creates the expectation and need to produce positive outcomes in the education of our students.

Thus, for the purpose of this study, a group of 797 students enrolled at a rural, public community college in Tennessee were tracked to determine the predictive validity of high school grade point averages, type of academic path, and ACT scores to determine college success as measured by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year.

Definitions of Terms

1. *ACT*: "American College Testing is an independent, not-for-profit organization that provides assessment, research, information, and program management services in the broad areas of education and workforce development" (ACT Resource Manual, 2007, p. 5).

2. *ACT Composite Score*: This is the arithmetic average of the four subject area scores on the ACT English, mathematics, reading, and science rounded to the whole number. Scale scores range from 1 (low) to 36 (high) for each of the four tests and for the composite (Noble & Camara, 2003).

3. *ACT Benchmark Score*: This is the minimum ACT test score required for students to have a high probability of success in credit-bearing college courses: English composition, social sciences courses, algebra, or biology (ACT Resource Manual, 2007).

4. *Associate of Arts- Associate of Science*: These degree programs are designed for the student who desires to transfer to a 4-year institution to pursue a baccalaureate degree. The information presented in a university parallel curriculum is not intended to represent requirements for any particular college or university (Walters State Community College Handbook, 2007-2008, p. 56).

5. *Associate of Applied* Science *and Academic-Technical Certificate*: These programs are designed for the student who desires to enter employment upon graduation and does not intend to transfer to a baccalaureate degree program. A student admitted to an associate of applied science program is not required to complete high school units of study required for admission to a university. However, should the student later decide to attend a state university, the requirements must be completed prior to admission to a baccalaureate program (Walters State Community College Handbook, p. 56).

6. *Cumulative College Grade Point Average*: The scholastic standing of a student is expressed in terms of quality point ratio. A quality point ratio is the total number of quality points divided by the total number of semester hours attempted, less the number of hours repeated. To meet degree requirements, a student must maintain an overall quality point average of 2.00 (Walters State Community College Handbook).

Grade Per Semester Hour	Quality Points Awarded
A - Highest Proficiency	4
B - High Proficiency	3
C - Proficiency	2
D - Low Proficiency	1
F - Failure	0

7. *High School Grade Point* Average: This is the average of letter grades earned in classes divided by the total number of classes taken. In some instances, extra points are earned for taking advanced level courses (Morristown Hamblen West High Program of Study, 2007-2008) .

Regular Classes	A-4.0 B-3 C-2 D-1 F-0
Honors Classes	A-4.5 B-3.5 C-2.5 D-1.5 F-0
Advanced Placement Classes	A-5 B-4 C-3 D-2 F-0

8. *University and Technical* Paths: In the state of Tennessee, 20 credits are required for high school graduation. These 20 credits consist of core curriculum units, specific path (university or technical) requirement units, and electives. Core curriculum includes four units of English, three units of math, three units of science, three units of social studies, and one unit of health, physical fitness, and wellness. University path requirements include two units of the same foreign language, algebra I, geometry, algebra II, and one unit of fine arts. Technical path requirements include four units of a technical program of study. Technical path students are not required to complete foreign language credits, fine art credit, or algebra II credit (Tennessee Department of Education , 2008).

Limitations and Delimitations

The findings and validity of this research are limited to the institution involved in this study and may not be generalized to other community colleges. The study involved only

traditional, first-time full-time freshmen who graduated from a Tennessee high school and enrolled directly in the community college in the fall semester of 2007. No attempt to differentiate between and among the rigors of college-level coursework was made in this study.

Overview of the Study

Chapter 1 contains the statement of the problem, research questions, significance of the study, definitions of terms, and delimitations. Chapter 2 includes a review of related literature. Chapter 3 addresses research methodology including data collection and data analysis. Chapter 4 provides an analysis of data, and Chapter 5 presents a summary of findings, conclusions, and recommendations for practice and further research.

CHAPTER 2

REVIEW OF LITERATURE

Every year graduating seniors walk across the stage and equate their high school diploma with college readiness; yet, the expectations and achievements associated with earning a high school diploma are in question when determining the knowledge and skills expected in college and career options after high school. According to Steinberg and Almeida (2008), in a 2004 report entitled *Ready or Not: Creating a High School Diploma that Counts*, it was concluded, "For far too many young people, the high school diploma represented 'a broken promise' that could no longer guarantee a graduate was ready to compete in the college classroom or the modern workplace" (p. 1).   At a time when a high school diploma is no longer enough, the percentage of new high school graduates entering college has doubled in recent years with the largest increase among low-income students (Steinberg & Almeida). Bueschel and Venezia (2006) further maintained, "Focusing on access to higher education is important and necessary, but a larger challenge lies in ensuring that expectations and preparation for success are stressed just as much as access" (p. 30).

Transition From Secondary to Postsecondary Education

Transitioning from high school into college can be an intimidating task for high school seniors and the significance of the change has been often underestimated in its importance as the demands of postsecondary education are rising. Podhajsky (1997) suggested, "More and better communication is needed between colleges and high schools with respect to shared goals and the direction of our educational system" (p. 23). High school teachers are often unaware of what is required for students to be college-ready and subsequently students are unaware of the expectations required of them at the collegiate level (Bueschel & Venezia, 2006). Nonetheless, the current system has pushed high school graduates to be admitted to college with little concern

shown from either side to resolve that what is being taught in high school will in fact ensure postsecondary success (Conley, 2005). Bueschel and Venezia acknowledged, "There is little state policy guiding change in areas such as course placement or in signaling academic expectations and college standards to middle and high school students" (p. 29). Conley affirmed, "Essential attributes of success for students in college--such as critical and analytic thinking, inquiry, skilled writing, and high-quality work--are not necessarily nurtured with progressively more challenging assignments that are scored consistently against uniform high standards" (p. 6).

Disconnects between secondary and postsecondary venues could result in an unsuccessful transition for many students. According to surveys conducted for *The Chronicle of Higher Education* by Maguire Associates (Sanoff, 2006), 84% of college faculty as compared to 65% of high school teachers stated that high school students are unqualified or only somewhat qualified to pursue a college degree. The surveys further reflected that 36% of college faculty versus 15% of teachers contended that students were very or extremely well prepared (Sanoff). Teachers and administrators at every level must begin to integrate efforts to ensure the success of all students. Hoffman and Vargas (2007) maintained, "Secondary and postsecondary systems share responsibility for student academic success in the transition across two sectors--no more blaming high schools without postsecondary rolling up its sleeves" (p. 25).

According to Conley (2005), with approximately 80% to 90% of high school freshmen claiming the desire to go to college, continual realignment of secondary and postsecondary standards is needed to ensure that students are successful in their goal to obtain a college degree. Thus, to ensure such success, Venezia, Kirst, and Antonio (2003) suggested the following three actions:

1. providing all students, their parents, and educators with accurate, high quality information about and access to courses that will help prepare students for college-level standards;

2. shifting media, policy, and research attention to include broad access to colleges and universities attended by the vast majority of students (approximately 80%); and

3. expanding the focus of local, state, and federal programs from access to college to include access to success in college. (p. 36)

Hoffman and Vargas (2007) added to the importance of this successful transition by maintaining:

> Every young person has the right to a rigorous, relevant high school education and at least a public pledge of financial and academic support for postsecondary education if not the expectation that a college degree is likely to come along with the shout, "Mom and Dad, I got in!" (p. 25)

The Development of Standardized Testing for Easing the Transition

The College Entrance Examination Board

Established in 1900 by 12 college presidents, the College Entrance Examination Board's (CEEB) purpose was to standardize the admissions process and to influence the curriculum at New England's boarding schools. The CEEB originally served only the private colleges and secondary schools in the Northeast. The examination was in essay format and covered English, French, German, Latin, Greek, history, mathematics, chemistry, and physics. Administered first in the spring of 1901, Atkinson (2001) maintained:

> The goals of the exam were: (a) to move away from the existing system in which each university had its own examination (of unknown validity, and if students wanted to apply to several universities, they had to take one exam per university); (b) to provide feedback to secondary schools about what should be covered in their curricula and the appropriate level of instruction (i.e., standards); and (c) to widen the net of student applicants (at the time, prep schools provided certificates for some students, which served as the entry hurdle for others). (p. 142)

According to Atkinson, during initial implementation, the original tests given by College Board were achievement tests and did not measure innate intelligence. Instead, the tests were designed to be egalitarian in nature and to recognize students from various backgrounds who had shown mastery in the academic subjects required to be successful at the college level.

The Scholastic Aptitude Test

The CEEB testing model began to change with the introduction of the Scholastic Aptitude Test (SAT). The original creator of the SAT, Carl Campbell Brigham, developed his own admissions test for students who made application to Princeton in the 1920s. Developed in the 1800s and early 1900s, the SAT was created from intelligence tests and was first administered on a large scale to army recruits during World War I. Brigham named the adapted version "Scholastic Aptitude Test," which later was renamed "Scholastic Assessment Test" (Frontline PBS, 1999, n. p.).

According to Atkinson (2001), James Bryant Conant who was appointed as president of Harvard College in 1933, intended to make the college more egalitarian. Conant's intentions were to diminish the advantage acquired by wealthy students who had been exposed to exceptional teachers and a strong curriculum (Atkinson). Conant sought to establish a scholarship program for students from humble backgrounds. Assigned to find a way to identify scholarship students, Henry Chauncey convinced Conant that the SAT was an accurate measure of intelligence, not just a measure of the education received through the superior opportunities of the privileged few attending private boarding schools (Atkinson). Based on the assumption that the SAT truly measured intelligence, Harvard began awarding scholarships based on test scores in 1934 and it required all applicants to complete the assessment beginning in 1941 (Frontline PBS, 1999).

The American College Test

A third major admission test, the American College Testing (ACT) Program, was developed in 1959 as a result of the increasing number of students reaching college age. Created by E. F. Lindquist and Ted McCarrel, the test was designed to serve two purposes: (a) to help students make informed decisions about college choice and the programs to study and (b) to aid institutions in the selection and retention of strong academic students (ACT, 2007). As opposed to the SAT, Lindquist claimed that as an achievement test the ACT test measured different

aspects of intelligence and was linked to high school curriculum. According the ACT Resource Manual (2007):

> The specific knowledge and skills selected for evaluation are determined through a detailed analysis of three sources of information. First the objectives for instruction for grades 7 through 12 are examined for all states in the United States that have published such objectives. Second, textbooks on state approved lists for courses in grades 7 through 12 are reviewed. Third, educators at the secondary and postsecondary levels are surveyed and consulted to determine the knowledge and skills taught in grades 7 through 12 that are prerequisite to successful performance in postsecondary courses. (p. 35)

Since 1959, the ACT has evolved into a commonly recognized and used measure of testing. Although predicting college readiness and success has been notably ACT's most important role in education, the corporation also has incorporated services for workforce readiness and secondary curriculum redesign and has assisted students with the selection of an appropriate course of study and career exploration (ACT, 2007).

Continued Use of Standardized Testing

With the increase in American population and the demand for postsecondary education in the workforce, there has been an increase in the number of students taking college entrance exams. The American College Testing Program (ACT), produced by Educational Testing Service, has been predominantly taken by students in the Midwest and parts of the South, including the state of Tennessee, and is required by more 4-year colleges than any other college entrance exam (ACT, 2007). Nationally, over 1.4 million ACT tests were administered to the graduating class of 2008 (ACT, 2008a). According to the ACT High School Profile Report (ACT, 2008c), over 50,000 tests were administered to Tennessee's 2008 graduates.

The ACT is a timed assessment allowing students to complete multiple-choice questions in four areas: English, math, reading comprehension, and science reasoning as well as an optional writing test. Students are given various times to take the individual tests and each is scored on a scale of 1-36 creating an overall composite score also in this range. The national average ACT composite score for 2008 decreased only slightly from 2007 from 21.2 to 21.1

(ACT, 2008a). Given five times nationally, students may choose to take the exam more than once. ACT's research has shown that 55% of those students who took the test more than once increased their composite score on the retest, 22% experienced no change in their composite score, and 23% decreased their composite score on the retest (ACT Resource Manual, 2008).

In addition to the ACT, the testing corporation offers an Educational Planning and Assessment System (EPAS) to assist in the need to ensure that all students are prepared not only for high school but also for the transition to college or the workplace. According to ACT (2008b):

> The EPAS system provides a longitudinal, systematic approach to educational and career planning, assessment, instructional support, and evaluation. The system focuses on the integrated, higher-order thinking skills students develop in grades K-12 that are important for success both during and after high school. (n. p.)

This testing process begins at the middle school level with testing administered through the ACT Corporation. In the 2007-2008 school year, the state of Tennessee began requiring the use of the EPAS system's PLAN tests to determine the educational progress of all sophomores towards college readiness. Beginning in the spring of 2008, Tennessee will become the sixth state in the United States to administer the ACT as a required assessment for all high school juniors across the state. According to Michael Harrison (personal communication, October 2, 2008), a member of the Tennessee House of Representatives Finance, Ways, and Means Committee, the State of Tennessee appropriated $1,142,934.00 for purposes of statewide assessment in the 2007-08 budget. Furthermore, the appropriation for assessment increased to $1,548,260.00 in the 2008-09 budget (personal communication, Michael Harrison, October 6, 2008).

The EPAS system consists of the EXPLORE assessment test for eighth grade students, the PLAN assessment test for high school sophomores, and the ACT for high school juniors and seniors. EXPLORE, added to the EPAS program in 1993, provides baseline information for preparation of students that can be used at the secondary level. Implemented in 1987, PLAN test results provide an opportunity for high school administration and staff to review students'

educational progress towards educational and career goals. The timing of this placement allows time to make necessary interventions to ensure that students will be college or work ready upon graduation.   The ACT measures the readiness of students to make a successful transition from high school into college or work. Throughout this testing process, students are given information about college expectations and achievement based on each specific grade level. In the state of Tennessee, secondary institutions are beginning to use this information for curriculum redesign and student placement. In the final stage, the ACT benchmark scores are used to predict success in collegiate level courses (ACT Resource Manual, 2007).

College Readiness Benchmark scores are the minimum ACT test scores required for students to have a high probability of success in credit-bearing college courses: English composition, social sciences, algebra, or biology (ACT Resource Manual, 2007). Scores are empirically derived from the actual performance of college students in 98 various institutions of higher education. ACT receives this student performance information as part of its Course Placement Service offered to colleges to assist in placing students in entry-level courses as adequately as possible. Thus, ACT houses an extensive database of over 90,000 students that includes course grade and test score data of 1st-year college students (ACT Resource Manual, 2008).   Students who meet a benchmark on the ACT have approximately a 50% chance of earning a B or better and approximately a 75% chance or better of earning a C or better in the corresponding college course or courses (ACT Resource Manual, 2007).   According to the ACT Resource Manual (2008):

> The College Readiness Benchmarks for EXPLORE and PLAN were developed using 150,000 records of students who had taken EXPLORE, PLAN, and the ACT. First, we estimated the probabilities of each EXPLORE and PLAN test score point associated with meeting the appropriate Benchmark for the ACT. We then identified the EXPLORE and PLAN test scores in English, reading, mathematics, and science that corresponded most closely to a 50% probability of success at meeting each of the four Benchmarks established for the ACT. (p. 45)

Criticism of using ACT scores as predictors of college success has come from the fact that ACT scores do not measure such noncognitive variables as writing, work ethic, speaking

skills, motivation, and artistic or musical ability. Thus, critics have suggested that, when used in isolation, ACT scores are poor predictors of college success (Cabrera & Burkham, 2001). Popham (2006) maintained, "It's important to remember that variables other than test scores have three times as much impact on that student's college performance" (p. 87). With only 50% of the college grade point average being predicted by ACT and SAT scores, the majority of the prediction comes from other external factors such as motivation and study habits (Popham). Yet, according to Allen and Sconing (2005), proponents of using this assessment to predict college success have suggested, "The advantage of using ACT assessment scores is that they are standardized measures that sustain meaning across schools and years. The meaning of high school grade point average, on the other hand, can differ across high schools" (p. 1).

High School Initiatives

Even in light of the current literature that criticizes the practice, some high schools continue to measure success by rank in class, overall grade point averages, and ACT scores. "Competitive colleges throughout the United States routinely indicate that along with courses completed and test scores, class rank and grade point average are among the top four determinants of whether or not a student will be accepted for admission" (Lang, 2007, p. 36). Consequently, parents and students are placing significant emphasis on standardized test scores and high school grades (Sadler & Tai, 2007). A debate among researchers continues about how accurately grade point averages, types of high school courses taken, and class ranks reflect a student's academic preparedness (Geiser & Santelices, 2007; Lang, 2007; Noble & Sawyer, 2004; Sadler & Tai, 2007).

The senior year of high school is often thought of as a time to sit back, relax, and enjoy the rewards of 12 years of academic preparation. Seniors often view more rigorous coursework as a potential detriment to their class rank and grade point average and thus avoid taking additional challenging classes (Lang, 2007). Dunn (2001) noted:

Everything is winding down for seniors. The valedictorian has been chosen, the excitement of college-bound students is palpable, and classes – well, students confess that they're of little use now. It sounds like an old-fashioned case of June fever – except that it's only February. And some kids have been slacking off for months already. (p. 12)

With the overwhelming number of high school graduates leaving unprepared for college and work, administrators at the secondary and postsecondary levels and state officials are constantly looking for ways to change the mindsets of seniors by using the senior year as a way to gain an academic edge for college access. Honors, advanced placement, and dual enrollment courses are common opportunities presented to seniors to expose them to advanced work while they are still enrolled at the secondary level (Sadler & Tai, 2007).

Advanced Placement

Founded in 1952 by a group of members from elite preparatory schools and colleges, Advanced Placement (AP) courses began as a way in which students could make the most of the last 2 years of secondary school and the first 2 years of colleges. As one of College Board's (2008) programs, AP courses provide students the opportunity to learn skills for college success such as critical reading skills and how to solve problems analytically and write clearly. Upon completion of AP courses, students have the opportunity to complete a corresponding AP Exam with the potential of earning college credit. AP exams are 2 to 3 hour exams made up of multiple choice and essay questions. Grades are given on a scale of one to five, with three considered a qualifying score. According to College Board (2008), over 3,000 institutions in the United States accept qualifying AP exam grades to award students credit, placement, or both. In 2008, over 1.4 million students took the AP exams worldwide (College Board).

Expansion of the AP program began slowly in the 1980s but the program moved rapidly into the area of college admissions (Geiser & Santelices, 2004). However, at the onset of AP courses in secondary curriculum, little was discussed as to how these courses would be reflected in grade point averages or the impact that AP courses would have on college admission (Sadler & Tai, 2007). Often measured by the number of advanced placement courses and honors level

courses offered, high school quality varies across school systems leaving students with an unequal access to AP or honors level courses (Camara & Michaelides, 2005). Additionally, advanced courses could cause difficulties in the calculation of grade point averages (Sadler & Tai). College Board sets no standards on the weighting of AP courses in calculating overall grade point average (Sadler & Tai). Local school boards and individual systems have the final say in calculating class rank and grade point average. Various high schools and systems use unweighted grade point averages, whereas others apply different weights to classes of varying difficulty. Effective on July 1, 2006, the state of Tennessee adopted a Uniform Grading System across the state that standardized the percentage ranges for each grade letter, weighting for honors and advanced placement courses. Honors courses may include an additional three points to the grades used to calculate the semester average and advanced placement courses may include an additional five points (Tennessee Department of Education, 2005).

Other systems use all courses taken to calculate grade point averages and still others may exclude courses such as driver's education and physical education (Lang, 2007). As noted by Camara and Michaelides (2005):

> For admissions purposes, enrollment in such advanced-level courses during the senior high school year suffices, because admissions applications and decisions are made before the end of those courses. Thus, there is no control over student performance and no guarantee that the student had a "truly" rigorous, college-level experience in the course. (p. 1)

However, Geiser and Santelices (2004) found that the number of honors or advanced placement courses taken by students when controlling for other academic and socioeconomic factors had little or no effect on students' later college performance.

In a study conducted by Lang (2007), 232 of the 500 largest public high school districts in the United States were studied to determine if high schools were in fact employing appropriate methodologies that provided students with incentives to prepare themselves for college and provide colleges with accurate information as to their graduates. Lang found that almost 80% of the respondents applied some type of additional weight to advanced placement or honors courses in order to determine class rank. Lang further discussed the inherent flaws with each grading

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system including the most widely used system of granting additional weight to advanced placement courses.

Additionally, grade inflation at the secondary level has made universities and colleges question the validity of using such objective measures for evaluating students and predicting their postsecondary success (Kirst & Venezia, 2001). As recognized by Geiser and Santelices (2004), highs schools and colleges have been awarding students extra credit or bonus points for participation in advanced placement courses, hence, students who earn a "B" in an advanced placement course are awarded the equivalent of an "A" in a regular level course. With the growing number of students choosing to participate in the advanced placement program to increase their chances of college admissions, grade point averages have soared to that well above 4.0 (Geiser & Santelices, 2004).   Kirst and Venezia maintained, "Many current admissions policies rely heavily on grades to predict students' success in college; recent research has found a trend toward grade inflation that some posit is related to the perceived need to help students compete for college admission" (p. 94).

Dual Enrollment

Similar to the advanced placement program, dual enrollment courses have been used by various high schools across the United States as a way to bridge the transition from secondary to postsecondary education (Colton, 2006). Through dual enrollment courses, students can enroll in college courses and earn credits that satisfy both high school and college requirements. Community colleges are working more and more with secondary institutions to reclaim the senior year and provide opportunities for students to be engaged in advanced and college-preparatory coursework (Peterson, 2003).

Although typically used to cure "senioritis," dual enrollment opportunities are used in various manners among high school administrators. Harnish and Lynch (2005) maintained:

> These credit-based transition initiatives are promoted as a means of increasing student access to postsecondary education, motivating more high school students to attend college, better aligning high school courses with postsecondary requirements, reducing

time and costs of college, and improving student outcomes at the postsecondary institutions (p. 170).

Additionally, such courses are being used to capture those students who may not be considering a college degree (Hoffman & Robins, 2005).

Funding for such programs exists through state and local initiatives or through individual studentP payment. In the state of Tennessee, students are allowed to obtain monies through the Dual Enrollment Grant Program to enroll in college courses while attending high school. To be eligible, students must be a current junior or senior in high school, be a Tennessee resident, be enrolled in an eligible high school, and must be admitted to and enrolled in an eligible postsecondary institution. The Dual Enrollment Grant Program allows students to receive a maximum award of $300 per semester and $600 per academic year. Students may receive the money during their junior and senior years prior to high school graduation. In order to maintain the grant money from one semester to the next, students must maintain a cumulative 2.75 grade point average or higher in college level courses (CollegePays, 2008).

The Community College's Use of ACT Scores

Community colleges offer educational programs to students from various academic backgrounds. Through open enrollment, community colleges serve students not meeting college readiness benchmarks through ACT, who have completed various levels of high school coursework, and those who ranked low in their high school classes. As defined by Claggett (1996), community colleges are "the great American experiment in higher education" (p. 1). With an open-door admission policy, area community colleges may not encounter the same problems with student selection as do universities and colleges. However, such institutions may use preadmissions testing, high school grade point average, and rank in developing individual programs of study to facilitate appropriate placement and improve retention.

Placement testing through the Computerized Adaptive Placement Assessment and Support Systems (COMPASS) or the Assessment of Skills for Successful Entry and Transfer

(ASSET) is administered by most community colleges to determine placement into developmental courses. Other colleges look to the ACT or SAT scores of incoming high school students to determine their ability to complete college-level work. Some colleges allow students the right to choose whether or not they want to participate in the courses or opt to enroll directly in college-level coursework. Alternatively, other colleges require mandatory placement according to test scores into developmental courses before enrolling in collegiate level courses.

Mandatory placement testing is required by most institutions; however, not all schools will follow mandatory placement policies (Hadden, 2000). Allowing students who are academically unprepared to enroll in college-level courses might be seen as setting them up for failure. Academic standards could be challenged when community colleges admit students at varying skill levels in college-level courses (Hadden). Each placement procedure has either positive or negative influence on student success. Hadden suggested, "Mandatory placement may actually provide the key to opening the door to true academic, vocational, or community success despite the criticisms by some that it excludes students and restricts their freedoms" (p. 823).

Other colleges require students to take remedial courses before enrolling in college-level courses, take them at any point in their career, or take the classes as they see fit within their course of study (Hadden, 2000). Crews and Aragon (2004) wanted to determine whether students participating in developmental writing courses earned higher grades than did nonparticipants who chose not to take the course. Additionally, these researchers looked at what point the students enrolled in the class. They found that students in a community college who were required by institutional policy to complete developmental writing courses before enrolling in college-level course work were successful. Additionally, they suggested that students should not be allowed to choose whether or not to enroll in developmental courses on their own because researchers have supported that students who remediate are more likely to succeed than those who do not (Crews & Aragon).

When beginning the journey towards a college education, many students require the assistance of faculty and staff to support them along the way. Identifying at-risk students and predicting success rates at the community college through pre-admissions testing aids in the retention and success of incoming freshmen students. By working within developmental education programs for those students entering without college readiness skills, special consideration can be given to the amount of support and assistance provided to students, understanding that most are in need of this attention.

In a study to determine effective ideas and teaching methods used in developmental mathematics classrooms within the Virginia Community College System, Waycaster 2001 found that developmental students were retained at a rate ranging from 61.9% to 80.6% across the five community colleges for the 3-year period. Students not receiving developmental education courses were retained at a rate ranging from 42.1% to 61.9% for the 3-year period (Waycaster). Faculty noted that the extra time and attention given to students in counseling, advising, and teaching along with smaller class sizes contributed to the retention of students who took developmental math courses (Waycaster).

Other colleges have taken an active approach in ensuring that students in developmental education programs are served by various aspects of student services. For instance, in order to create a more concentrated effort in academic support services, Hudson Valley Community College reconstructed its services and formed offices for testing, academic placement, advisement, and a learning assistance center (Quirk, 2005). The services provided by such offices included assessing students upon arrival, academic advising, and tutoring services. Learning centers were staffed with faculty members and reading and study skills instructors (Quirk). To further enhance their student services, Hudson Valley Community College instituted computer labs with open access, an early warning system for potential drop-outs, a freshman experience course, and a volunteer call service to remind students of important dates on the college calendar and to provide support (Quirk). This effort brought awareness to developmental

education as it relates to the college's mission and has allowed developmental education to become an institutional priority.

In addition to academic support, students often need personal support in understanding and comprehending the college system. A student participating in developmental education either as an adult student or high school student could feel overwhelmed or confused in a college system, not understanding the processes of registration, advisement, support services, and various other college functions. However, students who are able to understand and find their way within the college setting have a greater likelihood of success (Byrd & MacDonald, 2005). Byrd and MacDonald studied students from a small urban university and reported that students' understanding as to how the college system functions and having additional personal support led to their success in college-level courses. Additionally, students reported that guidance and support from family and high school counselors would have helped to prepare them for understanding the entire college system. Perin (2002) maintained that developmental college students who experience the family and financial difficulties often encountered by students while in college, coupled with low self-esteem, might need supplemental services to ensure success and persistence of these already low-functioning students. Consequently, community colleges are charged with the overwhelming task of educating students at various levels of college readiness including those below college readiness standards.

Tennessee's Response to Aligning High School Standards and College Expectations

As previously cited, a large number of students are leaving high school underprepared to complete postsecondary work. According to ACT's High School Profile Report (2008) reflecting statistics for Tennessee's graduating class of 2008, only 18% of those students met college readiness benchmarks in all four subject areas (English, math, social studies, and science). While this is not a new issue of concern, it has grown in importance as employers at every level are requiring some level of postsecondary education (Colton, 2006). Nationally, the graduating class of 2008 boasted an ACT composite test score of 21.1. Yet, 57% of identified

test takers did not meet college readiness benchmarks in math and 78% did not meet benchmarks on the science test. The report further reflected that while 35% of students completed ACT's minimum core requirement of algebra I, algebra II, and geometry and 53% completed some type of advanced math above the core, only 33% of Tennessee's graduates met the college readiness benchmark in math. Recognizing similar findings from the ACT's High School Profile Report, former United States Secretary of Education Margaret Spellings noted, "The ACT findings clearly point to the need for high schools to require a rigorous, 4-year core curriculum and to offer advanced placement classes so that our graduates are prepared to compete and succeed in both college and the workforce" (*American School Board Journal*, 2006, p. 8).

The vast number of students requiring remediation who are entering postsecondary education from the high school level has warranted the attention of both high school and college administrators (Kozeracki, 2002). Kolajo (2004) suggested, "Partnerships between high school and college authorities in sharing placement results and college performances of their graduates may help to sensitize the need for review and improvement in deficiency areas" (p. 370). In order to combat the true problem of remediation, administrators from higher education and secondary education should integrate their efforts to reduce the need for remediation (Hoffman & Vargas, 2007). Such collaboration could curb institutional and state costs of remediation and allow students to enter college prepared to begin college-level work. Venezia et al. (2003) maintained:

> The disconnect between k-12 and postsecondary education has inhibited the ability of schools and colleges to address the issues of inadequate preparation for college, high levels of remediation and low rates of college completion. (p. 34)

Secondary schools can no longer prepare students with the idea that high school graduation is the end goal; instead, schools must focus explicitly on preparing students for life beyond high school (Steinberg & Almeida, 2008).

As the demands in the workplace change to compete in the global marketplace of the future, so must the educational models implemented in our school systems ("Tennessee Joins American Diploma Project," 2007). Concern over the alignment of high school curriculum

standards and state assessments with college entrance requirements has increased (Noble & Camara, 2003).   Therefore, states are looking to raise expectations and align high school graduation requirements to prepare students better to enter the competitive world of college or work (Achieve, Inc., 2008). Nixon and Bunch (2007) maintained, "Specifically in Tennessee, representatives from local businesses say that high school graduates need deeper mathematics and science skills, communication skills, problem solving skills while working in small groups, and a stronger work ethic" (p.10).

To answer the call for educational reform needed to meet these rising demands, Tennessee legislators have been looking to revamp high school curriculum across the state. Currently, Tennessee's students can earn a high school diploma by following one of two curricular paths: university or technical. Along with the completion of the required units for each path, students entering the ninth grade in the school year 2001-2002 must score "proficient" on the three Gateway exams: biology I, English II, and algebra I. According to the Tennessee State Board of Education's (2002) High School Examinations Policy 3.400:

> The assessment program is consistent with legislative intent as specified in the accountability provisions of the state *Education Improvement Act* (1992) and the federal *No Child Left Behind Act* (2001). The program is consistent with the State Board of Education's *High School Policy,* which emphasizes school-wide reform to ensure that all students meet high standards. (p. 1)

Part of the impetus for the call for educational reform has stemmed from statistics provided by entities such as the American College Testing Program. According to American College Testing, one in four students leave college before completing sophomore year (Whitbourne, 2002). In 2002, for every 100 students enrolling in the ninth grade in the state of Tennessee, 59 graduated high school on time, 36 entered community colleges or universities, 25 were enrolled the sophomore year, and 15 graduated within 150% of the time (Bunch, 2008). To confirm that statistic, Tinto, as cited in Braxton, Milem, and Sullivan (2000) found that almost one half of students entering 2-year collegiate institutions and more than one fourth (28.5%) of students entering 4-year institutions left by the end of their 1st year. Additionally, Steinberg and Almeida (2008) noted, "Although approximately two thirds of graduating seniors

actually do enroll in college, only a third of these young people attain their goal of a college degree within 4 years, and only just over half earn a degree within 6 years from entrance" (p. 5). To understand these startling statistics, a large body of research has focused on predictors of success and persistence in 1st-year college students. With the pressure of producing successful graduates with scarce resources, high school and college faculty members along with college administrators have persistently attempted to identify valid and efficient predictors of scholastic success (Beecher & Fischer, 1999). Adelman (2006) summed up the educational dilemma in these words:

> The task of providing quality secondary school curricula to *everybody*, the *paths* to AP, the *paths* to the kind of learning challenges students will face in higher education, is enormous. If the promise of *No Child Left Behind* is to be realized at the secondary school level, it is first and foremost through the equitable provision of opportunity-to-learn. (p. 32)

In August of 2007, Tennessee became the most recent southeastern state to join the American Diploma Project, initiated by Achieve Incorporated (Achieve, Inc., 2007). Created by the National Governor's Association and business leaders, Achieve Inc. is grounded in assessment and accountability and strives to assist every state in narrowing the gap to produce successful graduates ready for postsecondary expectations (Nixon & Bunch, 2007). Achieve Inc. researched the work of three companies, the National Assessment of Educational Progress (NAEP), American College Testing (ACT), and College Board and has developed benchmarks for language arts and mathematics to identify the appropriate levels of rigor for high school students (Nixon & Bunch).

The Tennessee Diploma Project is an extension of the American Diploma Project with components of the project specific to the state. The current initiative addresses four key points: align high school standards with the demands of college and work, require students to take a college-ready and work-ready curriculum to earn a high school diploma, build college- ready and work-ready measures into statewide high school assessment, and hold high school and postsecondary institutions accountable for student preparation and success (Nixon & Bunch, 2007).

Prior to the decision to join the efforts of the American Diploma Project, Tennessee's Governor Phil Bredesen recognized and questioned a report reflecting a gap in the NAEP scores as compared to the state level achievement scores of students in Tennessee. With this recognition, Bredesen tasked the Department of Education with redefining the requirements and expectations of our high school graduates to be more in line with the requirements of both college and industry. As recorded by Bunch (2008), upon voting to join the American Diploma Project, Bredesen stated:

> Today's vote solidifies the work of the past year of raising education standards to more adequately prepare Tennessee students for 21st century success. These improvements are essential stepping stones to Tennessee's students possessing the knowledge and skills to be at the top of their chosen professions. Adequately educating our young people is, and always should be, Tennessee's top priority. (n. p.)

Specifically, beginning with the Class of 2013, major changes will be made to the high school policy: (a) students will be expected to earn more high school credits in mathematics, (b) a transition will be made from Gateway Testing to End-of-Course Testing, (c) there will be an increase in credit requirements to 22, (d) there will be a development of one diploma for all, and (e) an addition of a half credit of physical education and personal finance will be required (Bunch, 2008). Nixon and Bunch (2007) suggested that in order to restore the value of the American diploma and to ensure that students are ready for college:

> First, graduation requirements and assessments must be anchored to the standards of the real world. Second, conversations between P-12, higher education and business and industry should define college-ready work ready in Tennessee, and that definition should become the standard of acceptance of "postsecondary ready." (p. 11)

As recommended by the Tennessee Department of Education (2008) and the Tennessee State Board of Education (2008) staff on January 25, 2008, the Tennessee State Board of Education High School Policy 2.103 outlined the specific changes that will be effective beginning with the ninth-grade class entering high school during the 2009-2010 school year. According to the policy, "All students will have access to a rigorous curriculum that includes challenging subject matter, emphasizes depth rather than breadth of coverage, emphasizes

critical thinking and problem solving, and promotes responsible citizenship and lifelong learning" (p.1).

According to Nixon and Bunch (2007), to earn a regular high school diploma, students will be required to meet "Ready Core" requirements including four units of English, four units of mathematics, three units of science, three units of social studies, one and a half units of health, physical fitness, and wellness, and one half unit of personal finance. Students will be required to earn a total of 22 credits as opposed to the previous 20 credit requirement and have a satisfactory record of discipline and attendance. Under the Tennessee Diploma Project, students will graduate with honors by scoring at or above all of the subject area readiness benchmarks on the ACT (Nixon & Bunch).

In the state of Tennessee students are lagging behind in the areas of science and mathematics on the national level as measured by the ACT test. In order to increase student scores in these areas and to increase the likelihood of success in college, the State Board of Education has decided to eliminate core classes taught below the college preparation level. Thus, students will be required to complete four units of mathematics including algebra I and II, geometry or equivalent, and another mathematics course beyond algebra I and must be enrolled in a math course each school year ("Measuring College Readiness," 2008).

Under the new policy, students who have not scored 19 or higher on the ACT by the beginning of their senior year will be required to take a "Bridge Math" course that will work toward college readiness benchmarks. Not fully defined, the Bridge Math has been designed for students who have not met the college readiness score of 19 on the math portion of the ACT by the start of their senior year. According to ACT's researchers, students taking ACT's recommended core classes in mathematics, algebra I, algebra II, geometry, and trigonometry outscored the students taking only core classes by 2.6 points. Students taking core, trigonometry, and an upper-level math course outscored core-class takers by 4.4 points and those students taking core classes plus trigonometry and calculus outscored the core takers by 6.9 points ("Measuring College Readiness," 2008).

Additionally, under the Tennessee Diploma Project, students must complete biology I, chemistry or physics, and a third lab science. According to the ACT report, "Measuring College Readiness" (2008), students completing only biology earned an average score of 17.6 on the science portion of the ACT. Students completing biology and chemistry earned an average of 4.2 points higher and those taking biology, chemistry, and physics scored an average of 6.6 points higher than did students taking biology only. At present, only 23% of Tennessee's students who completed the ACT test score at the college readiness standard of 24 on the science portion of the test. According to Gary Nixon (Conference Presentation, March 7, 2008), Executive Director of the Tennessee State Board of Education, in order to increase Tennessee students' ACT science scores to meet college readiness benchmarks, students must follow this more rigorous science sequence as required under the change in high school graduation requirements.

Predicting College Success

Prediction of college success has long been researched and is an advantageous endeavor for both the institution of choice and to the high school senior. Stumpf, Stanley, and Smith (2002) asserted, "Because colleges like to hold on to their admitted freshmen until they graduate, it is worthwhile to ascertain how well graduating versus not graduating can be predicted" (p. 1043). College and universities around the nation are experiencing the effects of increased accountability and decreased funding. Thus, admitting students who do not complete degree requirements strains the limited educational resources partially subsidized by tax revenue (Tam & Sukhatme, 2004). Although each college or university is unique in its desires and goals, the most commonly recognized goal among all institutions is the desire to recruit and retain students who will be successful at their particular institution (Podhajsky, 1997). Hoffman and Vargas (2007) concurred, "Indeed, state policymakers are coming to realize that they must attend to postsecondary attainment rates just as they do to success in the first 12 years of school" (p. 24).

Success in college can be determined using a number of criteria, including course grades, grade point averages, graduation, attrition or persistence, promotion, teacher ratings, and special awards and honors (Camara, & Echternacht, 2000). Camara and Echternacht maintained that freshman GPA is the most frequently used criterion because:

1. the courses that freshmen take are more similar and less variable than at any other year in college, thus minimizing comparability issues that occur with grades;

2. predictor and criterion data are readily available; and

3. freshman grade averages are highly correlated with cumulated grade averages. (p. 1)

The overwhelming majority of studies and research completed in predicting college success used high school records and test scores as predictors. Zwick and Sklar (2005) noted, "Two major bodies of educational research have focused on the degree to which high school grades and standardized admissions test scores predict grade point averages among college freshmen" (p. 440). Institutional research and university admissions officers have taken interest in understanding the importance placed on both aspects of admission decisions and have routinely investigated the degree to which both measures predict freshman grade point averages. Similarly, researchers who test the validity of standardized admission testing have held interest in determining the effectiveness of using the most common measures of academic achievement, high school grade point averages, and standardized test scores to predict postsecondary success (Zwick & Sklar).

High school grades and standardized tests are connected in numerous ways at the secondary level. Administrators use test scores to monitor grading policies and determine the effectiveness of teaching and overall curriculum designs. Noble and Sawyer (2002) stated, "High school GPA likely relates to both the cognitive and the noncognitive components of college GPA. ACT scores, on the other hand, likely relate only to the cognitive components of college GPA" (p. 1). Test sponsors advise the combined use of grade point averages and standardized test scores to increase the soundness and fairness of important educational decisions for students (Willingham et al., 2000).

In a study conducted by Noble and Sawyer (2004), high school grade point averages alone did not predict high levels of academic achievement. At over 93% of the institutions studied, students earning a 4.0 grade point average in high school had a probability of less than 0.50 of earning a 3.75 or higher 1st-year college grade point average (Noble & Sawyer, 2004). The researchers suggested, "ACT composite scores provide greater differentiation across levels of achievement than do high school grade point averages in terms of students' probable success during their 1st year in college" (p. 22). Yet, Cambiano, Denny, and DeVore (2000) found that both high school grade point averages and ACT scores were significant predictors of retention at a mid-size, public, doctoral university in the central United States. Additionally, in a small scale study at Utah Valley State College, the ACT score was significantly correlated with both grade point average ($r = 0.3659$) and completion of freshman year ($r = 0.1654$) (Beecher & Fischer, 1999). Geiser (2008) maintained, "While students do differ in their abilities, it is questionable whether a 3- or 4-hour test can measure such differences with sufficient precision reliably to predict college performance" (p. 3).

Indeed, not all institutions agree on the use of standardized test scores in the admission process. Based on a longitudinal study conducted at the University of California to track college outcomes for a sample of approximately 80,000 students, Geiser and Santelices (2007) reported that high school grade point averages in college preparatory classes serve as better predictors than standardized SAT scores as to how students are likely to perform in college. Additionally, these researchers confirmed that the prediction was true not only for 1st-year college grade point averages but also for 4-year graduation and cumulative college grade point averages. Based on findings by Geiser and Santelices, the University of California adopted a new policy in 2001 allowing students in the top 4% of their high school class to be eligible for admission based solely on high school grade point averages (Geiser, 2008). With the conflicting perceptions of high school grade point averages and standardized test scores, the University of California's decision to de-emphasize the use of standardized test scores in the admission process has caused suspicions among critics.

Produced in September 2008 by the National Association of College Admission Counseling (NACAC, 2008), the *Report of the Commission on the Use of Standardized Tests in Undergraduate Admission* corresponded with the research conducted by the University of California. The report produced by NACAC emphasized:

> A "one-size-fits-all" approach for the use of standardized test in undergraduate admission does not reflect the realities facing our nation's many and varied colleges and universities. At some, standardized tests are important predictors of students' academic success, while at others, they add little compared to high school grades. (p. 7)

Regardless of how college success is predicted, the goal remains the same--to enroll, maintain, and graduate successful students. With most accrediting agencies, college graduation rates are unfailingly a primary focus of attention. Evaluating institutional effectiveness through retention rates has become a major component of the accreditation process through postsecondary institutions. Not only are the overall graduation rates considered, but individual programs of study are reviewed relative to the number of completers generated. In recent years, institutions of higher education, at least in the state of Tennessee, have received monetary rewards for exceeding national graduation rates.

In an attempt to protect and bolster graduation and retention rates, colleges have been raising the bar at the admissions level. Thus, in an effort to predict college success, institutions in turn have attempted to protect their institutional integrity to not only recruit the best but to retain the top students. Wyman (1997) maintained:

> Used properly, knowledge of retention rate magnitudes and trends for various student types can help decision-makers effect institutional improvements such as decreased enrollment volatility, decreased recruiting costs, increased graduation rates, decreased financial aid expenditures on non completers, and increased academic performance of students through adjustments and policy changes in areas such as admissions, financial aid, curriculum design, course scheduling, and student support services. (¶ 2)

It is for these reasons that with limited resources and the goal of producing successful graduates, institutions have struggled for years to discover valid and efficient ways to predict academic success (Beecher & Fischer, 1999).

Institutions of higher education across the nation vary in size, selectivity, and mission. Thus, a number of colleges might place great emphasis on standardized test scores, whereas other colleges might make admission decisions based on high school grade point averages and other noncognitive factors. NACAC's (2008) report further highlighted five critical issues that affect all institutions and offered the following recommendations to better serve the needs of our nation's students:

1. question and reassess regularly the foundations and implications of standardized test requirements;

2. understand test preparation and take into account disparities among students with differential access to preparation and information about admission testing;

3. draw attention to possible misuses of admission test scores;

4. establish opportunities for colleges and high schools, as well as college admission counseling professionals, to educate themselves about the appropriate use of standardized test scores; and

5. understand differences in test scores among different groups of people and continually assess the use of standardized test scores relative to the broader social goals of higher education. (pp. 8-11)

Other Factors Used in Predicting College Success

Although high school and college grade point averages both measure educational achievement, they also include other characteristics such as locus of control, financial issues, academic concerns, conflicting factors of family-work demands, and socioeconomic status (Gifford, Briceno-Perriott, & Mianzo, 2006; Mayo, Helms, & Codjoe, 2004). Several researchers have found that both academic background and cognitive-motivational characteristics are related to grade performance and school withdrawal (Harackiewicz et al., 2002; House, 1999; Mulvenon, Stegman, Thorn, & Thomas, 1999). To evaluate these measures, Mulvenon et al. maintained, "In recent years, institutions of higher education have begun to also

include noncognitive predictors such as formal interviews, family background, motivation, letters of recommendation, and extracurricular activities, to name a few" (p. 20).

In a study conducted by Gifford et al. (2006), locus of control was found to be a predictor of 1st-year collegiate success. Researchers found that students who ranked high on the locus of control scale (externals) may be more at risk for dropping out of college. According to Gifford et al., external students believe that success depends on luck or fate and not on them:

> As they believe that their future success is contingent on external factors, these students may be less apt to seek out and utilize resources available to help them succeed such as tutorials, academic support groups, academic advisors, professors with whom to discuss difficulties, or study groups. (p. 24)

Conversely, those students found to have internal locus of control, believing that success or failure is contingent on their behavior, were found to have higher grades than those with external locus of control (Gifford et al.).

Adolescent concept and achievement expectancies have also proven to be significant predictors of performance in specific courses (House, 1999).   Astin (1975) further maintained that students who aspire to a doctorate or professional degree are the least likely to drop out of college, whereas students who aspire to a bachelor's or other degree have the greatest chance of dropping out. Cofer and Somers' (2001) research findings differed a little; yet, they also found that degree aspirations were again significantly associated with persistence. Students aspiring to such degrees were more likely to persist than were students with lesser degree aspirations. House concluded:

> Considering whether or not students earned a bachelor's degree, significant correlations were found for high school G.P.A, self-ratings of overall academic ability, and expectations of graduating with honors. Students who graduated tended to have higher grades in high school, higher self-ratings of their overall academic ability and higher expectations of graduating with honors. Several environmental factors were positively associated with degree completion: hours per week spent on studying, homework, major, and satisfaction with the overall quality of instruction. (p. 423)

Although ACT and SAT scores may hold some predictive validity, variables other than test scores have three times as much impact on a student's college success and should be considered in the college admission process (Popham, 2006).

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Summary

Although institutions of higher education have found value in the prediction and selection process of incoming freshmen, students are left in a quandary at times having been "evaluated, measured and sorted by mysterious admission strangers, and asked to be authentic in an entirely inauthentic situation" (Dix, 2008, p. 2). Students are often pressured to become what colleges want and are pushed to the point of becoming involved in extracurricular activities, AP courses, serving as club officers, and completing community service when they may not have an interest (Dix). Kovacs (2008) suggested the underdeveloped self-worth and self-identity of young people become fixated on the judgments made regarding their standardized test scores, grade point averages, and rank in class. Kovacs further maintained:

> Today's college admission landscape is daunting and the population of high school seniors is growing. A large spotlight shines on a relatively small group of highly-competitive colleges with very low admissions rates. Their statistics are skewing the whole picture, and the adolescent mind finds it easier to pinpoint and then globalize, thinking that all colleges will be equally as inaccessible. The unfortunate truth is that adolescent concerns about image, approval, status, and shame prevent many from seeing the possibilities, when in reality, there is a college for everyone. (p. 17)

Even so, as numbers of college applications continue to rise, admission decisions will continue to be made based on standardized test scores and grade point averages. State and federal reforms at the elementary and secondary level have only increased the importance of standardized test scores as reflected by the implementation of the EPAS system in the state of Tennessee (ACT, 2008b). Even so, the use of standardized test scores to determine college admission remains a hotly debated topic. The National Association of College Admission Counseling (NACAC, 2008) advocated, "Providing context for college admission decisions in the 21st century requires consideration of changes in postsecondary education institutions, differentiated tools to accommodate diverse admission practices, the changing student population, and an assessment of the state of current admission practice" (p. 16).

CHAPTER 3

RESEARCH METHODOLOGY

A wealth of research has been completed on the use of high school performance measures (high school grade point average, type of academic high school courses taken, and ACT scores) as predictors of college success (number of college credit hours completed and 1st year GPA). Studies both crediting and discrediting the effectiveness of the use of these predictor variables are prevalent. The purpose of this study was to examine the associations between high school grade point averages, high school academic paths, ACT scores, and 1st-year college success as measured by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year.

Population

The population was limited to Tennessee high school graduates enrolled at Walters State Community College (WSCC) as first-time, full-time freshmen beginning in the fall of 2007 and completing one academic year in the spring of 2008. Only first time freshmen ages 19 and under were included in the study. Students were enrolled in associate of science, associate of applied science, or certificate programs. WSCC is one of the 13 public community colleges governed by the Tennessee Board of Regents, the sixth largest system of higher education in the nation (Walters State Community College Handbook, 2007-2008). With campuses located in Greeneville, Sevierville, Tazewell, and Morristown, WSCC averages approximately 1,250 freshmen every fall semester with an overall population of nearly 6,000 students. Specifically, this study included the first-time, full-time freshmen cohort enrolled in fall 2007 primarily from 27 different high schools in WSCC's 10 county service area in upper east Tennessee. To target only recent high school graduates, those students 19 years of age and under were reviewed

totaling 797 students. The high school populations from which these students enrolled ranged from approximately 200 to 2,200 students achieving various levels of academic success.

Research Design

The transcripts of incoming freshmen including overall high school grade point average, ACT composite score, and high school courses completed reflect the culmination of work completed by students in their high school years. The transcripts were entered into Walters State's Student Information System (SIS) and were evaluated. The variables used to measure success at the collegiate level were identified by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 2007-2008 academic year.

The design of this study used a correlational study based on high school performance and college success. According to McMillan and Schumacher (2006), "Correlational research is concerned with assessing relationships between two or more phenomena" (p. 25). Correlational research was appropriate for this particular study and for the underlying research questions. For this study, the use of a correlational design examined the possibility of relationships between predictor variables (high school point average, ACT composite scores, and the type of high school courses completed) and criterion variables (the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year).

Several limitations within this research design have been identified by the researcher. Correlational research studies offer the opportunity to discover relationships between variables. However, this relationship does not allow the researcher to infer "causation from correlation." McMillan and Shumacher (2006) recognized this to be the "most common violated principle of measures of relationship" (p. 228). Additional limitations, relative to the study, resulted from the use of data from one community college during one period.

Data Collection

Existing data were used to conduct this study and were gathered from student information maintained by Walters State Community College's Student Information System (SIS). The SIS system houses the official academic records of current students and graduates of the college. The system and associated data security require the collection of a consistent set of variables for each student based on transactional processes. The information system contained all of the dependent and independent variables in this study. Once the data were extracted, they were downloaded on a personal computer and analyzed using the SPSS Base Statistical Package.

Research Methods

Before beginning any research, I gained permission from the President of Walters State Community College, Dr. Wade McCamey, to conduct research at the institution (see Appendix). The first step in this study was to identify the predictor and criterion variables. Two criterion variables were used in this study. One was students' cumulative grade point averages at the end of their 1st semester and at the end of the 1st academic year at Walters State Community College. The second criterion variable in this study was the number of college credit hours earned at the end of students' 1st semester and at the end of the 1st academic year at Walters State Community College. The number of college credit hours earned excluded developmental studies coursework. In accordance with college policy, withdrawals were not included in the calculation of college grade point average. Repeat hours were counted only once and the last grade in the course was used for calculating all grade point averages.

Three predictor variables were included in this study. The first was the type of high school academic path (university path or technical path). The two types of high school academic paths were dummy coded so this variable could be used in two regression models. The second predictor variable in this study was high school grade point averages and the third predictor was ACT composite scores. Predictor and criterion variables were matched with definitive data that were maintained in Student Information System (SIS).

Required data were extracted from the college's SIS database and verified for accuracy. The data were cleaned and checked for missing or unusual data. Necessary calculations were used to test all hypotheses.

Data Analysis

Eight research questions and associated null hypotheses were formulated and guided the research for this study.

1. Is there a difference in mean grade point averages upon high school graduation between students who enrolled in the university path versus the technical path?

A *t* test for independent samples was used to test the null hypothesis:

Ho1: There is no significant difference in the mean grade point averages upon high school graduation between students who enrolled in the university path versus the technical path.

2. Is there a difference in the mean college grade point averages at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

A *t* test for independent samples was used to test the null hypothesis:

Ho2 There is no significant difference in the mean grade point averages at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

3. Is there a difference in the mean college grade point averages at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

A *t* test for independent samples was used to test the null hypothesis:

Ho3: There is no significant difference in the mean grade point averages at the end of the 1st academic year at Walters State Community College between

freshmen who graduated from the university path versus the technical path at the high school level.

4. Is there a difference in the mean number of college credit hours completed at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

A *t* test for independent samples was used to test the null hypothesis:

Ho4: There is no significant difference in the mean number of college credit hours completed at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

5. Is there a difference in the mean number of college credit hours completed at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

A *t* test for independent samples was used to test the null hypothesis:

Ho5: There is no significant difference in the mean number of college credit hours completed at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

6. Is there a difference in the percentage of students taking remedial-developmental courses at the end of the academic year between freshmen who graduated from the university path versus the technical path at the high school level?

A chi-square test for independent samples was used to test the null hypothesis:

Ho6: There is no significant difference in the percentage of students taking remedial-developmental courses between freshmen who enrolled in the university path versus the technical path at the high school level.

7. To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: college grade point averages at the end of students' 1st academic year at Walters State Community College?

For this research question, a multiple regression model was used to evaluate the relationship of the type of high school academic path, high school grade point averages, and ACT composite scores on college grade point averages at the end of the 1st year at Walters State Community College. Type of courses taken in high school (type of path) were dummy coded 1 = university path and 0 = technical path to be used in the regression model. The null hypotheses tested were:

Ho7$_1$: There is no relationship between type of high school academic path (university path versus technical path) and grade point averages at the end of the 1st academic-year at Walters State Community College.

Ho7$_2$: There is no relationship between high school grade point averages and grade point averages at the end of the 1st academic year at Walters State Community College.

Ho7$_3$: There is no relationship between ACT composite scores and grade point averages at the end of the 1st academic year at Walters State Community College.

8. To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: number of college hours earned at the end of students' 1st academic year at Walters State Community College?

To answer this research question, a multiple regression model was used to evaluate the relationship of type of high school courses taken, high school grade point averages and ACT composite scores on the number of college hours earned at the end of the 1st academic year at

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Walters State Community College. Type of high school academic path was dummy coded 1 = university path and 0 = technical path in order to be used in the regression model. The null hypotheses tested with this regression model were:

Ho8$_1$:   There is no relationship between type high school academic path (university path versus technical path) and number of college hours earned at the end of the 1st academic year at Walters State Community College.

Ho8$_2$:   There is no relationship between high school grade point averages and number of college hours earned at the end of the 1st academic year at Walters State Community College.

Ho8$_3$:   There is no relationship between ACT composite scores and the number of college hours earned at the end of the 1st academic year at Walters State Community College.

The statistical analysis procedures were executed using the Statistical Package for the Social Sciences (SPSS), version 17, to analyze the hypotheses. All findings reported were based on the .05 level of significance (alpha). The statistical procedures are discussed in greater detail in Chapter 4 and the findings thus generated are presented.

CHAPTER 4

PRESENTATION AND ANALYSIS OF DATA

The purpose of this study was to examine the associations between high school grade point averages, high school academic paths, ACT scores, and 1st-year college success as measured by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year. The population included in this study was 797 students who immediately enrolled in Walters State Community College after high school graduation in the fall semester of 2007 through the spring of 2008. This study focused on whether or not high school academic path, ACT scores, high school grade point averages, or a combination of such variables were related to collegiate success. Within this study, two subgroups were examined--students who completed the university path and those who completed the technical path as a high school curriculum. Those students who completed the university path in high school, who numbered 728, comprised 91.3% of the population; those students who completed the technical path in high school, who numbered 69, comprised 8.7% of the population. (The researcher was aware that the data interpretation could be skewed because of the differences in sample size; however, the findings of the study should still provide valuable information about the associations between high school achievement and overall collegiate success). The results of this analysis should be viewed with caution because of a violation of an assumption of regression.


Analysis of Research Questions and Hypotheses

Research Question #1 and Hypothesis

Is there a difference in mean grade point averages upon high school graduation between students who enrolled in the university path versus the technical path?

Ho1:   There is no significant difference in the mean grade point averages upon high school graduation between students who enrolled in the university path versus the technical path.

An independent samples *t* test was conducted to evaluate whether there was a difference in mean grade point averages upon high school graduation between students who enrolled in the university path versus technical path. Mean grade point average was the test variable and the grouping variable was university or technical path. The test was significant, $t(78) = 8.61$, *p* <.001. Therefore, Ho1 was rejected. The mean high school grade point average for students who were enrolled in the university path ($M = 3.21$, $SD = .50$) was considerably higher than was the mean high school grade point average of students who were enrolled in the technical path ($M = 2.57$, $SD = .60$). The 95% confidence interval for the difference in means was .79 to .49. The η^2 index was .11, which indicated a medium effect size. Figure 1 shows the distribution for the two groups.
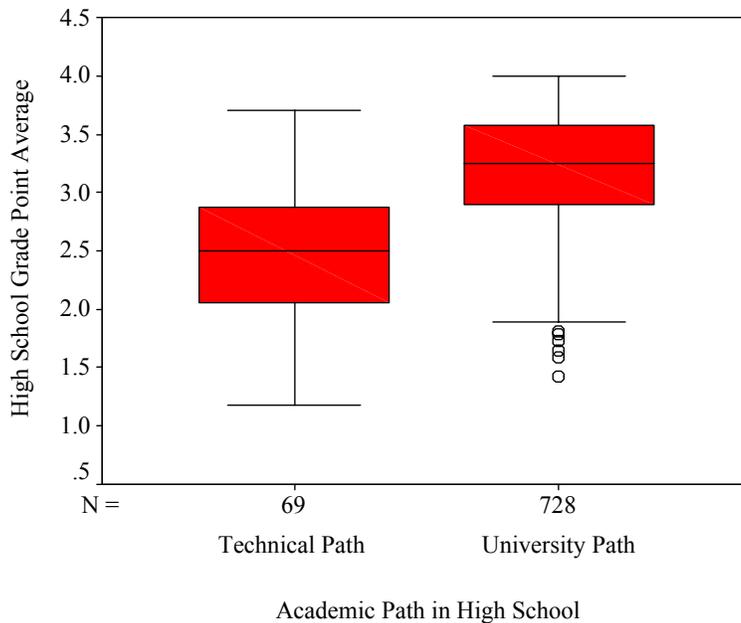
o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 1. Boxplot for High School Grade Point Average by Type of Academic Path in High School.

Research Question #2 and Hypothesis

Is there a difference in the mean college grade point averages at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

Ho2:   There is no significant difference in the mean college grade point averages at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

For this research question, the records of 751 students who attempted college credit hours were analyzed. Those students who attempted only remedial-developmental courses were not included in this analysis.

An independent samples *t* test was conducted to determine whether there was a difference in the mean college grade point averages at the end of the 1st academic semester between freshmen who graduated from the university path versus the technical path at the high school level. Mean college grade point average at the end of the 1st academic semester was the test variable and the grouping variable was university or technical path. The test was significant, *t* (65) = 4.00, *p* < .001. Therefore, Ho2 was rejected. The mean college grade point average at the end of the 1st academic semester for students who were enrolled in the university path (*M*=2.31, *SD*=1.20) was higher than was the mean college grade point average of students who were enrolled in the technical path (*M*=1.58, *SD*=1.34). The 95% confidence interval for the difference in means was 1.09 to .37. The η^2 index was .03, which indicated a small effect size. Figure 2 shows the distribution for the two groups.
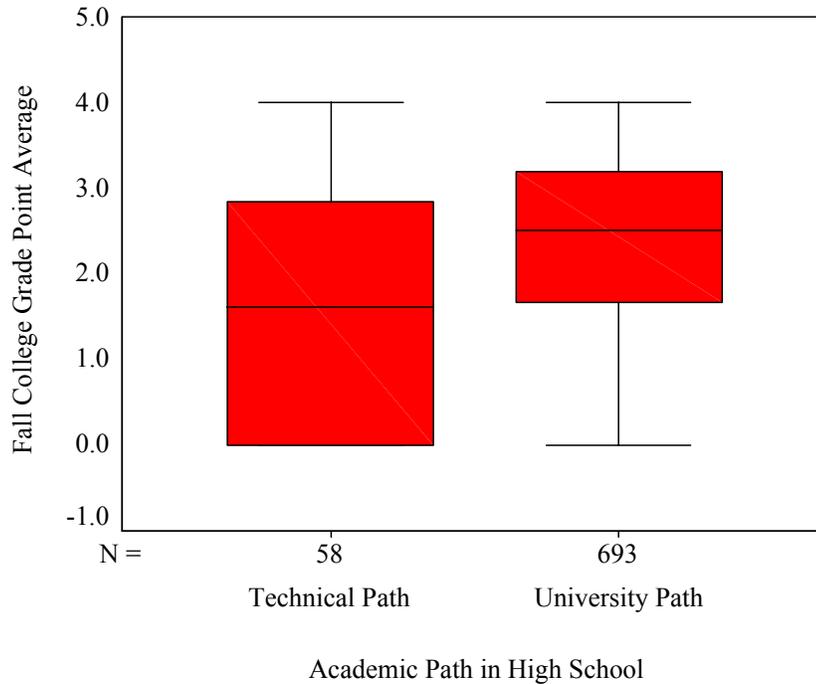
Figure 2. Boxplot for Fall College Grade Point Average by Type of Academic Path in High School

Research Question #3 and Hypothesis

Is there a difference in the mean college grade point averages at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

Ho3:   There is no significant difference in the mean grade point averages at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

For this research question, the records of 644 students who: (a) attempted college hours and (b) were enrolled in spring semester were analyzed. Those students who attempted only remedial-developmental courses or who did not re-enroll in the spring semester were not included in this analysis.

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An independent-samples *t* test was conducted to determine whether there was a difference in the mean college grade point averages at the end of the 1st academic year between freshmen who graduated from the university path versus the technical path at the high school level. Mean college grade point average at the end of the 1st academic year was the test variable and the grouping variable was university or technical path. The test was significant, *t* (642) = 3.33, *p* < .001. Therefore, Ho:3 was rejected. The mean college grade point average at the end of the 1st academic year for students who were enrolled in the university path (*M* = 2.46, *SD* = .92) was higher than was the mean college grade point average at the end of the 1st academic year for students who were enrolled in the technical path (*M* = 1.97, *SD* = 1.07). The 95% confidence interval for the difference in means was .798 to .203. The η^2 index was .02, which indicated a small effect size. Figure 3 shows the distribution for the two groups.
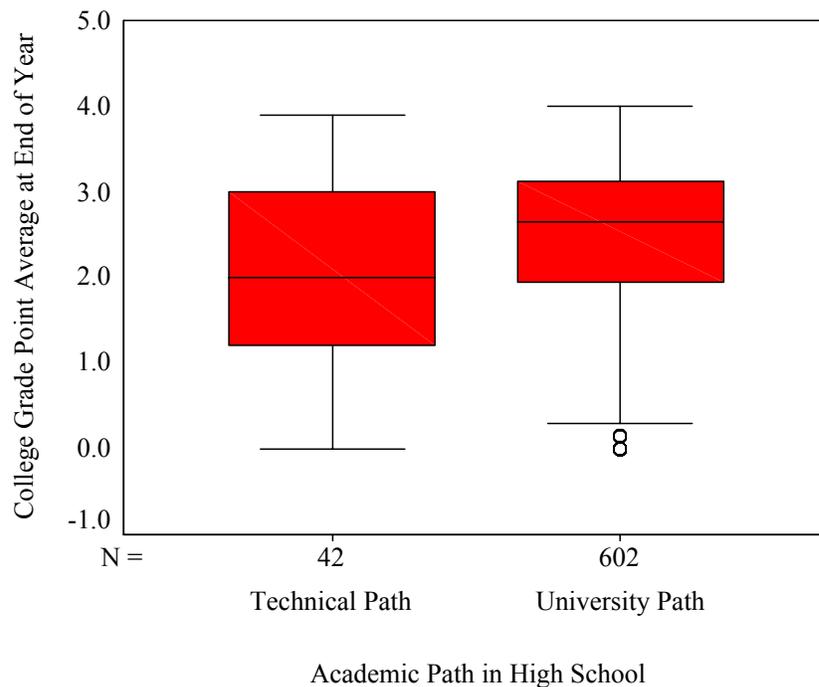

o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 3. Boxplot for College Grade Point Average at the End of the 1st Academic Year by Type of Academic Path Taken in High School
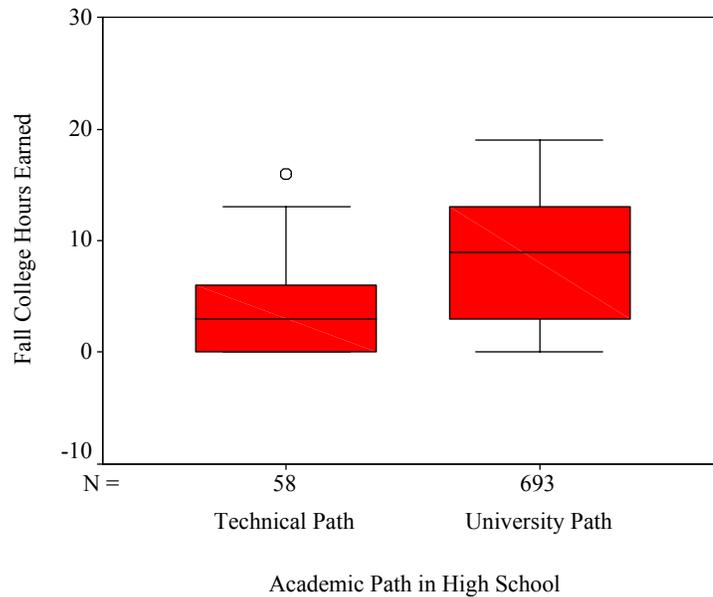
Is there a difference in the mean number of college credit hours completed at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

Ho4:　There is no significant difference in the mean number of college credit hours completed at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

For this research question, the records of 751 students who attempted college credit hours in the fall semester were analyzed. Those students who attempted only remedial-developmental courses in the fall semester were not included in this analysis.

An independent samples *t* test was conducted to determine whether there was a difference in the mean number of college credit hours completed at the end of the 1st academic semester between freshmen who graduated from the university path versus the technical path at the high school level. Mean number of college credit hours completed at the end of the 1st academic semester was the test variable and the grouping variable was university or technical path. The test was significant, $t(74) = 7.79$, $p < .001$. Therefore, Ho4 was rejected. The mean number of college credit hours completed at the end of the 1st academic semester for students who were enrolled in the university path ($M = 8.18$, $SD = 5.05$) was higher than the mean number of college credit hours completed for students who were enrolled in the technical path ($M = 3.91$, $SD = 3.91$). The 95% confidence interval for the difference in means was 5.36 to 3.18. The η^2 index was .05, which indicated a small effect size.   Figure 4 shows the distribution for the two groups.

o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 4. Boxplot for Fall College Credit Hours Earned by Type of Academic Path Taken in High School

Research Question #5 and Hypothesis

Is there a difference in the mean number of college credit hours completed at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

Ho5: There is no significant difference in the mean number of college credit hours completed at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level.

For this research question, the records of 644 students who: (a) attempted college hours and (b) were enrolled in spring semester were analyzed. Those students who attempted only

remedial-developmental courses or who did not re-enroll in the spring semester were not included in this analysis.

An independent-samples *t* test was conducted to determine whether there was a difference in the mean number of college credit hours completed at the end of the 1st academic year between freshmen who graduated from the university path versus the technical path at the high school level. Mean number of college credit hours completed at the end of the 1st academic year was the test variable and the grouping variable was university or technical path.   The test was significant, $t(642) = 5.36$, $p < .001$. Therefore, Ho5 was rejected. The mean number of college credit hours completed at the end of the 1st academic year for students who were enrolled in the university path ($M = 19.72$, $SD = 9.49$) was higher was than the mean number of college hours completed at the end of the 1st academic year for students who were enrolled in the technical path ($M = 11.64$, $SD = 8.66$). The 95% confidence interval for the difference in means was 11.03 to 5.11. The η^2 index was .04, which indicated a small effect size. Figure 5 shows the distribution for the two groups.
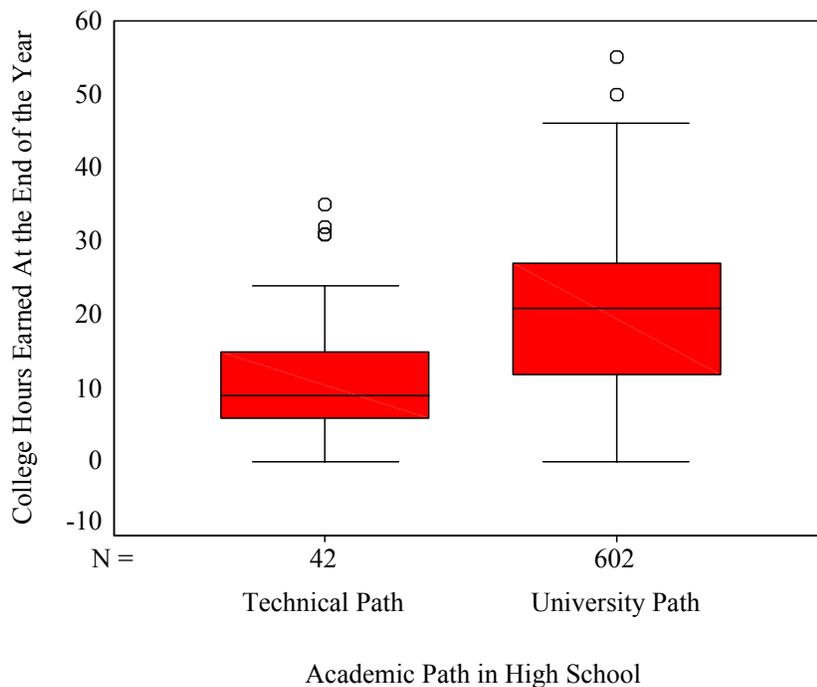
o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 5. Boxplot for College Hours Earned at the End of the 1st Academic Year by Type of Academic Path Taken in High School

Research Question #6 and Hypothesis

Is there a difference in the percentage of students taking remedial-developmental courses at the end of the academic year between freshmen who graduated from the university path versus the technical path at the high school level?

Ho6: There is no significant difference in the percentage of students taking remedial-developmental courses between freshmen who enrolled in the university path versus the technical path at the high school level.

A chi-square for independent samples was used to evaluate the difference between university and technical path students in enrollment in remedial and development courses taken in the course of one academic year. This analysis was limited to the 645 students who were

enrolled in the spring semester. The cumulative attempted remedial and developmental courses was used to determine whether or not a student was enrolled: Students who had zero remedial and developmental cumulative attempted hours were not enrolled in remedial and developmental courses, whereas students with remedial and developmental cumulative attempted hours greater than 0 had been enrolled in remedial and developmental courses. The difference between university and technical path students in enrollment in remedial and developmental courses taken within the academic year was significant, χ^2 (1) = 16.81, $p < .001$. Therefore, the null hypothesis was rejected. Thus, university path students were less likely to be enrolled in remedial and developmental courses within the academic year. As shown in Table 1, 93% of technical path students were enrolled in at least one remedial and developmental course within the academic year compared to 62% of university path students who were enrolled in at least one remedial and developmental course.

Table 1

Crosstabulated Table for Enrollment in Remedial-Developmental Courses by Type of Academic Path Taken in High School

Enrollment	Technical Path		University Path	
	N	%	*N*	%
Not Enrolled in Remedial-Dev. Course	3	7.0	229	38.0
Enrolled in Remedial-Dev. Course(s)	40	93.0	373	62.0
Total	43	100.0	602	100.0

Research Question #7 and Hypotheses

To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: college grade point averages at the end of students' 1st academic year at Walters State Community College?

For this research question, a multiple regression model was used to evaluate the relationship of the type of high school academic path, high school grade point averages, and ACT composite scores on college grade point averages at the end of the 1st year at Walters State Community College. Type of high school academic path (university path or technical path) were dummy coded 1 = university path and 0 = technical path to be used in the regression model. The null hypotheses tested were:

Ho7$_1$: There is no relationship between type of high school academic path (university path versus technical path) and grade point averages at the end of the 1st academic year at Walters State Community College.

Ho7$_2$: There is no relationship between high school grade point averages and grade point averages at the end of the 1st academic year at Walters State Community College.

Ho7$_3$: There is no relationship between ACT composite scores and grade point averages at the end of the 1st academic year at Walters State Community College.

A simultaneous multiple regression was conducted to evaluate how well a group of three variables predict the criterion variable of college grade point averages at the end of the 1st year at Walters State Community College. The predictor variables were: type of high school academic path (technical path versus university path), high school grade point averages, and ACT composite scores. The linear combination of the predictor variables was significantly related to the college grade point averages at the end of the 1st academic year, $F(3, 639) = 59.46$, $p < .001$. The correlation coefficient $R = .47$ indicated that approximately 22% of the variance of college grade point average at the end of the 1st academic year was accounted for by the linear combination of the three predictor variables. Table 2 shows the coefficients to indicate

the relationship of individual predictors to college grade point average at the end of the academic year.

Table 2

Coefficients of the Simultaneous Linear Regression Between College Grade Point Average at the End of the 1st Year and the Predictor Variables

| Predictors | Unstandardized Coefficients | | Standardized Coefficients | | |
	B	SE	β	t	p
Academic Path in High School	-.002	.139	-.001	-.016	.988
High School GPA	.802	.079	.427	10.202	<.001
ACT Composite Score	.020	.012	.069	1.670	.095

Only one of the three predictor variables, high school grade point average, was statistically significant ($p < .001$). Therefore, the null hypothesis of no relationship between high school grade point average and college grade point average at the end of the 1st academic year was rejected. The coefficient showed a moderate positive relationship between high school grade point average and college grade point average at the end of the academic year (high school grade point average p < .001, ß = .427). After controlling for high school grade point average and ACT composite score, there was no relationship between the type of academic path at the high school level and college grade point average at the end of the academic year, $p = .988$, ß = -.001. Therefore, the null hypothesis for type of academic path and college GPA at the end of the academic year was retained. Likewise, after controlling for the two other predictors in the model, the null hypothesis for the relationship between ACT Composite scores and college GPA at the end of the academic year was retained. There was a very weak, positive relationship

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between ACT Composite scores and college GPA at the end of the 1st academic year, $p = .095$, $\beta = .069$.

Research Question #8 and Hypotheses

To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: number of college hours earned at the end of students' 1st academic year at Walters State Community College?

To answer this research question, a multiple regression model was used to evaluate the relationship between predictor variables (type of high school academic path, high school grade point averages and ACT composite scores) and the number of college hours earned at the end of the 1st academic year at Walters State Community College. Type of high school academic path was dummy coded 1 = university path and 0 = technical path in order to be used in the regression model. The null hypotheses tested with this regression model were:

Ho8$_1$: There is no relationship between type of high school academic path (university path versus technical path) and number of college hours earned at the end of the 1st academic year at Walters State Community College.

Ho8$_2$: There is no relationship between high school grade point averages and number of college hours earned at the end of the 1st academic year at Walters State Community College.

Ho8$_3$: There is no relationship between ACT composite scores and the number of college hours earned at the end of the 1st academic year at Walters State Community College.

A simultaneous multiple regression was conducted to evaluate how well a group of three variables predicted the criterion variable of number of college hours earned at the end of students' 1st academic year at Walters State Community College. The predictor variables were:

type of high school academic path (technical path versus university path), high school grade

point averages, and ACT composite scores. The linear combination of the predictor variables

was significantly related to the number of hours earned at the end of the 1st academic year, F (3,

639) = 183.13, $p < .001$. The correlation coefficient $R = .68$ indicated that approximately 46%

of the variance of number of college credit hours earned at the end of the 1st academic year was

accounted for by the linear combination of the three predictor variables. Table 3 shows the

coefficients to indicate the relationship of individual predictors to college hours earned at the end

of the academic year.

Table 3

Coefficients of the Simultaneous Linear Regression Between College Hours Earned at the End of

the 1st Year and the Predictor Variables

	Unstandardized Coefficients		Standardized Coefficients		
	B	*SE*	β	*t*	*p*
Academic Path in High School	.734	1.182	.019	.621	.534
High School GPA	6.207	.669	.322	9.282	<.001
ACT Composite Score	1.303	.100	.446	12.996	<.001

Two of the three predictor variables were statistically significant ($p < .001$): high school

GPA and ACT Composite scores. Therefore, the null hypotheses for the relationship between

high school GPA and college hours earned and the relationship between ACT Composite scores

and college hours earned were rejected. Each of the two had a positive relationship to college

credit hours earned at the end of the 1st academic year (high school grade point average $p < .001$,

ß = .322, composite ACT scores, $p < .001$, ß = .446. After controlling for high school grade

point average and ACT composite scores, there was very little relationship between high school

academic path and college hours earned at the end of the academic year, $p = .534$, $\beta = .019$. Therefore, the null hypothesis for the relationship between type of academic path taken in high school and the number of college hours earned at the end of the 1st academic year was retained.

The findings from the variables outlined in this chapter are reviewed in Chapter 5. The conclusions resulting from this study as well as implications for practice and recommendations for future research are included in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS FOR PRACTICE, AND

RECOMMENDATIONS FOR FUTURE RESEARCH

The purpose of this study was to examine the associations between high school grade point averages, high school academic paths, ACT scores, and 1st-year college success as measured by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year. A summary, conclusions, implications for practice, and recommendations for future research are detailed in the following sections.

Summary

Much has been done to determine valid and reliable measures to predict college success. There are multiple measures to determine college readiness including American College Testing (ACT) scores, Scholastic Aptitude Testing (SAT) scores, high school grade point averages, the rigor of high school courses taken, and such noncognitive factors as financial need, motivation, family encouragement, and student support services provided by the college. Standardized admissions tests are commonly recognized as the more accurate, reliable predictor of collegiate success over grade point average because of variations in the grading policies across schools. Even so, a debate among researchers continues about how accurately grade point averages, types of high school courses taken, and class rank reflect a student's academic preparedness (Geiser & Santelices, 2007; Lang, 2007; Noble & Sawyer, 2004; Sadler & Tai, 2007).

The findings presented as part of this research provide an interesting depiction of high school preparation and collegiate success. Although the results were not conclusive, the researcher found that at the end of the semester and at the end of 1 academic year, university path students earned a higher college grade point average and a higher number of college credit

hours than did those students completing the technical path. However, after controlling for academic path and ACT scores, high school grade point average was found to be more positively associated with college grade point average at the end of the academic year. Additionally, ACT composite scores and high school grade point averages were also found to have a positive relationship to the number of college credit hours earned at the end of the academic year. Based on the results of this study, high school preparation through academic course selections, high school grade point averages, and ACT scores can be used to predict freshman year collegiate success. Although standardized admissions testing is continually being used as the best predictor of college success, secondary and postsecondary administrators should evaluate college readiness and admission measures to ensure that all students receive a fair and equal opportunity to earn a college degree.

The researcher was aware that the data interpretation could be skewed because of the differences in sample size; however, the findings of the study should still provide valuable information about the associations between high school achievement and overall collegiate success. The results of this analysis should be viewed with caution because of a violation of an assumption of regression.

Conclusions

In this study, data were collected and analyzed to determine if associations existed between high school grade point averages, high school academic paths (university versus technical), ACT scores, and 1st-year college success as measured by the number of college credit hours completed and college grade point averages at the end of the 1st semester and at the end of the 1st academic year. The population included in this study numbered 797 students who immediately enrolled in Walters State Community College after high school graduation in the fall semester of 2007 through spring 2008. This study focused on whether or not high school academic path, ACT scores, high school grade point averages, or a combination of such variables impacted collegiate success.

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Within this study, two subgroups were examined--students who completed the university path and those who completed the technical path. The study was guided by eight research questions.

Research Question #1

Is there a difference in mean grade point averages upon high school graduation between students who enrolled in the university path versus the technical path?

The results indicated that the mean high school grade point average for students who were enrolled in the university path ($M = 3.21$, $SD = .50$) was significantly higher than the mean high school grade point average of students who were enrolled in the technical path ($M = 2.57$, $SD = .60$). Technical path students are exposed to a more skill or trade oriented curriculum as opposed to the more rigorous or academic nature of the university path program.

Research Question #2

Is there a difference in the mean college grade point averages at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

The results indicated that the mean college grade point average at the end of the 1st academic semester for students who were enrolled in the university path ($M = 2.31$, $SD = 1.20$) was significantly higher than was the mean college grade point average of students who were enrolled in the technical path ($M = 1.58$, $SD = 1.34$).

Students on the university path have taken more rigorous coursework in preparation for college. On the other hand, students on the technical path have typically completed a career focus such as automotive, carpentry, or health science. Technical path students are less likely to have been exposed to college expectations and standards while preparing for a trade. Therefore, it is likely that university path students enter college with a better understanding of college expectations, better study skills, and better time management skills.

Research Question #3

Is there a difference in the mean college grade point averages at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

The results indicated the mean college grade point average at the end of the 1st academic year for students who were enrolled in the university path ($M = 2.46$, $SD = .92$) was significantly higher than was the mean college grade point average at the end of the 1st academic year for students who were enrolled in the technical path ($M = 1.97$, $SD = 1.07$). The difference in college grade point average between students completing both paths remained consistent throughout the year.

In a longitudinal study tracking students from 1980 as 10th graders in high school until 1993, Adelman (1999) found that high school curriculum reflected 41% of the academic preparedness students bring to college, whereas test scores reflected 30%, and class rank-GPA reflected 29%. High school curriculum was found to correlate higher with bachelor's degree attainment than was test scores or class rank-academic GPA. Geiser (2008) further maintained, "College-prep classes present many of the same kinds of academic challenges that students face in college--term papers, quizzes, labs, final exams--so it makes sense that prior performance in such activities would be indicative of later performance" (p. 2).

Research Question #4

Is there a difference in the mean number of college credit hours completed at the end of the 1st academic semester at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

The results indicated that the mean number of college credit hours completed at the end of the 1st academic semester for students who were enrolled in the university path ($M = 8.18$, $SD = 5.05$) was significantly higher than was the mean number of college credit hours completed for students who were enrolled in the technical path ($M = 3.91$, $SD = 3.91$).

Research Question #5

Is there a difference in the mean number of college credit hours completed at the end of the 1st academic year at Walters State Community College between freshmen who graduated from the university path versus the technical path at the high school level?

The mean number of college credit hours completed at the end of the 1st academic year for students who were enrolled in the university path ($M = 19.72$, $SD = 9.49$) was significantly higher than was the mean number of college hours completed at the end of the 1st academic year for students who were enrolled in the technical path ($M = 11.64$, $SD = 8.66$).

Research Question #6

Is there a difference in the percentage of students taking remedial-developmental courses at the end of the academic year between freshmen who graduated from the university path versus the technical path at the high school level?

The results of this study showed that there was a difference between high school academic paths (university versus technical path) and enrollment in remedial and developmental courses at the end of the academic year. While 93% of technical path students were enrolled in at least one remedial and developmental courses within the academic year, 62% of university path students participated in these courses. As the data showed, participation in the university path at the high school level has the potential to reduce the number of students requiring remediation during the 1st academic year. When students are more academically prepared by completing more rigorous coursework at the high school level, they seem to be better prepared to begin college-level work. However, considering those students graduating high school from the university path with the impression of being "college ready," over half of the population required remediation in some form. The vast number of students requiring remediation entering postsecondary education from the high school level warrants the attention of both high school and college administration (Kozeracki, 2002). In order to combat the true problem of remediation, administrators from higher education and secondary education should integrate

their efforts to reduce the need for remediation (Hoffman & Vargas, 2007).   Such collaboration could curb institutional and state costs of remediation and allow students to enter college prepared to begin college-level work.

Research Question #7

To what extent, if any, are there relationships between the predictor variables: type of high school academic path (university path versus technical path), high school grade point averages, and ACT composite scores and the criterion variable: college grade point averages at the end of students' 1st academic year at Walters State Community College?

A hierarchical multiple regression was conducted to evaluate how well a group of three variables predict the criterion variable of college grade point averages at the end of the 1st year at Walters State Community College. The predictor variables were: type of high school academic path (technical path versus university path), high school grade point averages, and ACT composite scores. The linear combination of the predictor variables was significantly related to the college grade point averages at the end of the 1st academic year, $F(3, 639) =$ 59.46, $p < .001$. The correlation coefficient $R = .47$ indicated that approximately 22% of the variance of college grade point average at the end of the 1st academic year was accounted for by the linear combination of the three predictor variables.

Only one of the three predictor variables, high school grade point average, was statistically significant ($p < .001$). Therefore, the null hypothesis of no relationship between high school grade point average and college grade point average at the end of the 1st academic year was rejected. The coefficient showed a moderate positive relationship between high school grade point average and college grade point average at the end of the academic year (high school grade point average p < .001, ß = .427). After controlling for high school grade point average and ACT composite score, there was no relationship between the type of academic path at the high school level and college grade point average at the end of the academic year, $p = .988$, ß = -.001. Therefore, the null hypothesis for type of high school academic path and college GPA at the end

of the academic year was retained. After controlling for the two other predictors in the model, the null hypothesis for the relationship between ACT Composite scores and college GPA at the end of the academic year was retained. However, there was a very weak, positive relationship between ACT Composite scores and college GPA at the end of the 1st academic year, $p = .095$, $\beta = .069$. As noted in the longitudinal study conducted at The University of California to track college outcomes for a sample of approximately 80,000 students, researchers also found that high school grade point averages in college preparatory classes served as better predictors over standardized admission test scores of how students are likely to perform in college (Geiser & Satelices, 2007).

Using the hierarchical multiple regression model, the relationship between the independent variable (type of high school academic path) and the dependent variable (college grade point average at the end of the academic year) diminished when the control variables (ACT Composite scores and high school grade point average) were included in the model, not because the relationship was false or because the type of academic path had no effect on the college grade point average at the end of the academic year. Instead, the intervening control variables (ACT composite scores and high school grade point average) were merely the mechanisms through which the original relationship between the independent and dependent variables was interpreted.

The *Elaboration Paradigm* (Babbie, 1989) was used to interpret these findings. This paradigm is used when interpreting the findings of the relationship between two variables after control variables are introduced into the model. Babbie explained that when a relationship between two variables diminishes or vanishes after a control variable is introduced, as was the case for high school academic path, the meaning of this finding is based on the time order of the control variable relative to the independent variable (high school academic path) and dependent variable (college grade point average at the end of the year). The original relationship is false when the control variable occurs in time prior to the independent and dependent variable. Conversely, if the control variable is a superseding variable, intervening between the

independent and dependent variables, the original relationship is not false. Instead, this is interpreted by the fact that "the control or test variables are merely the mechanisms through which the relationship between independent and the dependent variable occurs" (Babbie, p. 427).

Research Question #8

To what extent, if any, are there relationships between the predictor variables (type of high school academic path, high school grade point averages and ACT composite scores) and the criterion variable, number of college hours earned at the end of students' 1st academic year at Walters State Community College?

A hierarchical multiple regression was conducted to evaluate how well a group of three predictor variables (type of high school academic path, high school grade point averages and ACT composite scores) and the criterion variable, number of college hours earned at the end of students' 1st academic year. The linear combination of the predictor variables was significantly related to the number of hours earned at the end of the 1st academic year, $F(3, 639) = 183.13$, $p < .001$. The correlation coefficient $R = .68$ indicated that approximately 46% of the variance of number of college credit hours earned at the end of the 1st academic year was accounted for by the linear combination of the three predictor variables.

Two of the three predictor variables were statistically significant ($p < .001$): high school GPA and ACT composite scores. Each of the two had a positive relationship to college credit hours earned at the end of the 1st academic year, (high school grade point average $p < .001$, ß = .322, composite ACT scores, $p < .001$, ß = .446. After controlling for high school grade point average and ACT composite scores, there was no relationship between high school academic path and college hours earned at the end of the academic year, $p = .534$, ß = .019. Therefore, the null hypothesis for the relationship between type of academic path taken in high school and the number of college hours earned at the end of the 1st academic year was retained. As noted in a previous study, Cambiano et al. (2000) found that both high school grade point averages and

ACT scores were significant predictors of retention at a mid-size, public, doctoral university in the central United States.

Again, using the hierarchical regression model, the relationship between the independent variable (type of high school academic path) and dependent variable (number of college credit hours earned at the end of the academic year) diminished when the control variables (ACT composite scores and high school grade point average) were included in the model. This relationship was diminished not because the relationship was false or because the type of path had no effect on number of college hours earned. Instead, the intervening control variables (ACT composite scores and high school grade point average) were the mechanisms through which the original relationship was interpreted.

Implications for Practice

With an overwhelming number of students attempting to enter college after high school, the competitive nature of college admissions is growing. Colleges and universities are looking to enroll students who will be successful at their institutions and also to find the appropriate means to adequately predict this collegiate success. Common methods of this prediction come from a variety of sources, most of which are the use of high school performance (course selection and grade point average) and standardized college admissions testing. Educational reforms in secondary education at the state and federal level have increased the use of standardized tests to measure educational outcomes. Through the use of these prediction methods, colleges find varying levels of academic preparedness especially at the community college level.

The present study presents a number of implications for secondary and postsecondary educators. Implications for practice include, but are not limited, to the following:

1. With the increase in the competitive nature of the college admissions process, colleges and universities should re-examine strict admission policies that limit the opportunities for high school students based strictly on ACT scores. Colleges and universities should consistently evaluate the use and emphasis that is placed on each

admissions criterion. College admission representatives should allow the work and persistence of high school students as reflected by their high school grade point averages to carry more weight in the college admissions process.

2. Walters State Community College should develop and implement programs designed to target those students entering the college having completed the technical path at the high school level. This type of program could provide early intervention for those students and offset factors that might prevent collegiate success.

3. With the realization that there were only 69 technical path students entering the college after high school, secondary schools should incorporate a tracking system that follows graduates for 4 years after high school graduation. This tracking could provide greater insight into the level of preparation university and especially technical path students are receiving in order to be college or work ready.

4. Secondary schools should develop a program for each student that prepares him or her for college. With 93% of technical path students and 62% of university path students required to enroll in at least one remedial or developmental courses, secondary schools must incorporate more college readiness standards and benchmarks within the current curriculum.

5. Secondary administrators and counselors should continue to encourage students to participate in college prep courses to include at least algebra II. Even though some students may be undecided about attending college after high school, preparing students by encouraging them to complete the requirements of the University Path diploma and beyond will ensure greater college readiness and success.

6. Research findings support Tennessee's decision to adopt the Tennessee Diploma Project. This educational reform effort requires all students to meet college-ready and work-ready standards. As shown in this study, there were obvious differences between the two academic paths as evident in college performance measured by college grade point average, remedial and development requirements, and number of

college credit hours earned. Thus, results from this study should encourage all stakeholders in Tennessee's schools to rise to the challenges presented by the new requirements and realize that the current high school requirements and expectations are not meeting the needs of our students.

Recommendations for Future Research

Recommendations for future research include, but are not limited, to the following:

1. A longitudinal design should be used to track this group of students through graduation to determine if their academic performance remains the same or varies across 4 years of study.

2. With the implementation of the Tennessee Diploma Project and the educational reform that will begin with the graduating class of 2013, students will be required to complete a college-ready and work-ready curriculum (eliminating core classes taught below the college preparation level) to earn a high school diploma. Upon college enrollment for this graduating class, a comparison study should be conducted to analyze the effects of the new changes.

3. This study was limited to one community college in East Tennessee. A replication of this study should be expanded to include a larger population of students from additional years of freshmen data from Walters State Community College. Furthermore, this study could be expanded to include academic settings at community colleges in urban settings and 4-year universities.

4. Although this study was quantitative in design, the use of qualitative methods could provide additional information and insight into factors that further contribute to collegiate success.

5. While the collegiate success of students was investigated through the use of college grade point averages and number of college hours completed, no effort was made to determine the difficulty or types of college courses in which students were enrolled.

Thus, expanding this study to include degree type and course difficulty should explain further the differences in collegiate success.

6. In this study, high school performance was reviewed in terms of university path versus technical path. University path students completed algebra II, two foreign languages, and a visual or performing arts class, and technical path students completed through geometry and a technical cluster of courses. Further review of high school coursework including participation in honors or college preparatory classes, Advanced Placement courses, and dual enrollment programs could further explain the differences in collegiate performance between the groups.

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APPENDIX

Permission Letter to President of WSCC

Dr. Wade McCamey, President
Walters State Community College
500 S. Davy Crockett Parkway
Morristown, TN 37813

Dear Dr. McCamey,

      As a doctoral student at East Tennessee State University in the Educational Leadership and Policy Analysis Program I am currently working on the prospectus of my dissertation. I have elected to complete a study on predicting community college success based on high school curriculum, high school grade point averages, and ACT scores. To date, there have been ample studies completed showing the success of students at both the community college and university settings. Yet, recognizing the increasing number of students attempting to enter our colleges and universities, it remains imperative that college administrators and high school faculty realize the importance of preparing students for postsecondary work and choosing the appropriate measures by which to analyze preparedness.   Realizing that Walters State Community College's open door admissions policy allows for variability in academic preparedness and recognizing the significant influence the college has on our community, it is my desire to extract WSCC data to use in this study. Without question, I am confident that this research would prove to be of value to both secondary and postsecondary institutions and support retention and graduation initiatives at WSCC.

      Please consider this correspondence as an official request to obtain WSCC data for my dissertation. Understanding that retrieving data from available records will provide more validity than surveys or questionnaires, I would like to request permission to obtain information available on the Student Information System (SIS) through the office of Planning, Research and Assessment. I will not be receiving personally identifiable information and you may be assured that all information obtained will be managed in accordance with the Family Educational Rights and Privacy Act.

      I would like to request permission to study records associated with students enrolled at WSCC beginning in the fall of 2007 and completing their 1st academic year in spring 2008. Factors that I intend to review include: high school grade point average, high school course curriculum, ACT scores, collegiate GPA, and number of college hours completed.   You will find a draft copy of my proposed research questions attached.

      I appreciate your willingness to assist with the research process and data extraction associated with my anticipated dissertation topic. Please be assured that I will be happy to share the results of my study with you and your faculty and staff at WSCC. If you have any questions or need additional information, you may reach me at (XXX) XXX-XXXX or [email address].

      Once again, I appreciate your support and I look forward to working with you in the future.

Approved By:

                                Sincerely,

_____
Office of Planning, Research, & Assessment

                                Jill Reuschel, Student
_____
                                Dept. of Educational Leadership & Policy Analysis
Office of Student Affairs
                                   East Tennessee State University

_____
Office of the President

VITA

JILL C. REUSCHEL

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                      2001

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                  Coordinator of Admissions-Counselor,
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Professional
Experience:
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           2005 - 2006

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           Hamblen County Board of Education, Morristown, Tennessee;
           2006 - Present