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Undergraduate Student Perceptions of AP and Dual Enrollment in Relation to College Readiness Skills

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Undergraduate Student Perceptions of AP and Dual Enrollment in Relation to College Readiness Skills

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ABSTRACT

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The purpose of this quantitative study was to determine if undergraduate students perceived that their college readiness was impacted by participation in Advanced Placement courses, dual-enrollment courses, or both. Perceptual data were gathered from freshmen and sophomores enrolled at East Tennessee State University using an online survey. The number of participants in this study was 265. Perceptions of the individual program components of both Advanced Placement and dual-enrollment courses were also assessed in relation to college readiness. The results of the study indicated that undergraduate students perceive instructor quality and course rigor of both AP and dual-enrollment as beneficial to their success in college. Participants also indicated that the college readiness skills acquired through program participation were beneficial to their college success to a significant extent in the areas of writing, time management, note-taking, study skills, independent learning, and reading complex text. When comparing results related to AP and dual-enrollment, participants assigned similar ratings to the college readiness skills assessed in all areas except independent learning. Participant responses indicated that they perceived dual-enrollment as more beneficial than AP in the area of independent learning. In response to an open-ended survey item, participants also reported that dual-enrollment courses were more beneficial than AP courses especially in regard to the transfer of course credit and instructor quality.

DEDICATION

I dedicate this work to all of those who have supported me in this journey. To my husband, Te-kai, I know this has not been easy, but thank you for your willingness to step up when I needed to spend extra time on school work. I'm also grateful for your not-so-gentle words of encouragement when I made excuses about why I couldn't do this.

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To my mother, you have always believed in me! You've given so selflessly, so that I could take advantage of the opportunities given to me. I appreciate you!

To my grandmother, Thelma, I aspire to continue your legacy of educating others. I hope this work is a step in that direction.

To the rest of my family and friends, thank you for your kind words of encouragement and support. I dedicate this work to you.

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CHAPTER 1

INTRODUCTION

High schools around the country are expanding the number and scope of early postsecondary opportunities offered to students (Ganzert, 2014). This increased focus comes as states and schools have been challenged to increase the rigor of high school coursework in addition to streamlining the college transition process (Tennessee Department of Education [TDOE], 2017b; U.S. Department of Education, 2017). Secondary school officials have also been tasked with decreasing the number of students who graduate from high school unprepared for college level work. Increasing the rigor of high school coursework through participation in early postsecondary opportunities is one way to assist students in gaining the skills necessary for college success. Postsecondary administrators are also invested in increasing early postsecondary opportunities for students due to the positive impact of program participation on college retention and graduation rates.

Early postsecondary opportunities include Advanced Placement (AP), International Baccalaureate, dual enrollment, dual credit, and articulated credit courses. Each of these programs offers unique advances in student learning (Speroni, 2011; TDOE, 2017b). While the program structure of Advanced Placement and dual-enrollment courses may differ, both learning opportunities are designed to expose students to rigorous coursework. Early postsecondary opportunities introduce students to elevated expectations for academic work while helping them develop the skills necessary for college success (Tennessee Department of Education [TDOE], 2017b). The effects of these programs on college success and persistence have been investigated, but research concerning the perceived benefits of program elements and implicit skills gained through course participation is less prevalent.

Statement of the Problem

The impact of high school students' participation in AP and dual-enrollment courses on college retention and persistence has been previously examined (e.g. Fike & Fike, 2008; Karp, Calcagno, Hughes, Jeong, & Bailey, 2007; Morgan & Klaric, 2007; Speroni, 2011; Swanson, 2008; Wyatt, Patterson, & Di Giacomo, 2015). Research on high school students' perceptions of program participation have also been examined (e.g. Burns & Lewis, 2000; Cooney, McKillip, & Smith , 2013; Hallett & Venegas, 2011; Kanny, 2015; Ozmun, 2013). However, relatively few studies have been conducted about the perceptions of matriculated students concerning their participation in these programs and the effects on college readiness. Given the limited number of perceptual studies, attaining additional insight into the perceived benefits of participation in AP and dual-enrollment programs can add to the extant research base and understanding of the impact of these programs on college readiness.

Research Questions

The following research questions were used to guide this study:

RQ1: Do undergraduate students perceive academic rigor in AP courses as beneficial for success in college to a significant extent?

RQ2: Do undergraduate students perceive instructor quality in AP courses as beneficial for success in college to a significant extent?

RQ3: Do undergraduate students perceive that participation in AP courses prepared them academically for college coursework to a significant extent?

RQ4: Do undergraduate students perceive academic rigor in dual-enrollment courses as beneficial for success in college to a significant extent?

RQ5: Do undergraduate students perceive instructor quality in dual-enrollment courses as beneficial for success in college to a significant extent?

RQ6: Do undergraduate students perceive that participation in dual-enrollment courses prepared them academically for college coursework to a significant extent?

RQ7: Is there a significant difference in student perceptions of preparedness in writing, time management, note-taking, study skills, independent learning, and reading complex text between students who took AP courses and students who participated in dual enrollment?

RQ8: How, and to what extent, do undergraduate students perceive one early postsecondary opportunity as more beneficial than the other?

Significance of the Study

High schools are under increased pressure to increase rigor within student programs of study. A growing number of states have mandated that high school students have access to early postsecondary opportunities which include AP and dual-enrollment programs (Zinth, 2016b). As more students participate in these opportunities, school officials and counselors must be apprised of student perceptions of these programs in relation to college readiness. What elements of AP and dual-enrollment programs prepare students for postsecondary success? The only way to answer this question is to collect the perceptions of students who have enrolled in college about course quality and the skills acquired as a result of their participation. Venezia and Jaeger (2013) contended that “it is difficult to isolate individual strategies that are more or less effective" (p. 129) due to reform efforts to increase college readiness skills in primary and secondary schools. This study was designed to isolate individual program components of AP and dual-enrollment programs and provide the perceived implications of each to extend the research base concerning early postsecondary opportunities.

Limitations and Delimitations

Student perceptions were examined in this study. The truthfulness of participants in their responses was assumed. In addition, it was assumed that early postsecondary opportunities impact college readiness. It was also assumed that the program components and cognitive skills examined impact a student's ability to succeed in college.

This study was limited by the definition of college readiness and the appropriateness of the study methodology. Another limitation lies in how well the instrument measures the construct of college readiness. Students who participate in Advanced Placement and dual-enrollment programs are, typically, high-achieving students. These students may not be representative of the larger population due to identified barriers to program access such as high school size and location, secondary course offerings, grade-point average, and teacher recommendations. Only freshman and sophomore responses were collected in this study, so results cannot be generalized to other populations.

Definitions of Terms

Key terms are defined to assist the reader in understanding terminology and concepts in the study. The following terms are defined by use in this study.

Academic Rigor: A construct used to examine course quality by evaluating student perceptions of assessments, quizzes, and overall level of challenge.

Advanced Placement (AP): A program managed by the College Board. Thirty-seven courses are available in English, math and computer science, science, history and social science, world language, and art. Students are enrolled in high school courses which mimic introductory college coursework. Students have the opportunity to take the corresponding AP exam. Colleges may award college credit or advanced placement for a passing exam

score (College Board, 2017; Cooney et al., 2013; Handwerk, Tognatta, Coley, & Gitomer, 2008; Patterson, Packman, & Kobrin, 2011; Speroni, 2011; Venezia & Jaeger, 2013).

College Readiness- The skills, attitudes, and beliefs students possess to allow them to succeed in college coursework without having to participate in remedial college coursework (Conley, 2007; National Forum on Education Statistics, 2015).

Dual Enrollment- Courses which provide high school students with the opportunity to earn college credit while in high school by participating in the actual college course. Students take courses on or off campus with a high school teacher or college professor. College credit may be awarded for successful completion of the course as determined by the enrolling postsecondary institution. Course grades are documented on the student's high school and college transcripts (Karp et al., 2007; Marken, Gray, & Lewis, 2013; Speroni, 2011; Struhl & Vargas, 2012).

Early Postsecondary Opportunity- Opportunities which aid in college and career readiness by allowing students to earn college credit while still in high school. Programs include Articulation, Advanced Placement, College Level Examination Program, Dual Credit, Dual Enrollment, International Baccalaureate, and Industry Certification (Tennessee Department of Education, 2017a).

Instructor Quality- A component of instructor effectiveness which includes teacher content knowledge, instructor accessibility, classroom discussions, and course lectures (Gall, Knight, Carlson, & Sullivan, 2003; Lake, 2001).

Overview of the Study

Undergraduate student perceptions of Advanced Placement and dual-enrollment programs were examined in relation to college readiness. Chapter 1 contains an introduction, statement of the problem, research questions, significance of the study, limitations and delimitations, definition of terms, and study overview. Chapter 2 contains a literature review assessing AP and dual-enrollment programs, college readiness, and implicit skills obtained through program participation. Chapter 3 contains the study methodology, research questions and null hypotheses, sampling information, and data collection methods. The results of the study are detailed in Chapter 4, while a discussion of the results and implications for practice appear in Chapter 5.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Advanced Placement (AP) and dual enrollment program participation rates have increased over the years (College Board, 2014; Schneider, 2009; Venezia & Jaegar, 2013). These early postsecondary learning opportunities provide students with experiences that may help prepare them for the rigors of college coursework. Students may perceive the skills learned as a result of program participation as beneficial for postsecondary success. While many studies have examined the effects of AP and dual-enrollment programs on college retention and persistence, few delve into the specific program components which students deem important for college success. This chapter contains a review of the literature on the history of AP and dual-enrollment programs, program participation and access, benefits of program participation, student perceptions of program participation, and college readiness.

Advanced Placement Program History

The Cold and Korean Wars alerted many Americans to the need for an improved system of education (Rothschild, 1999). Scientists and engineers were needed to help fight communism. Researchers looked for ways to grow and develop talented individuals. This search led educators to examine ways to expedite the college process for advanced learners.

Two studies were performed which led to the inception of the Advanced Placement Program (The College Board, 2003). After completion of the first study, which was conducted by the Fund for the Advancement of Education, the researchers recommended that schools try to align their curricula with those of postsecondary institutions to avoid duplication of unnecessary coursework at the college level. The Committee on Advanced Standing performed the second study and developed stringent secondary course descriptions, standards, and assessments for

which colleges could award credit. Seven schools participated in piloting these advanced courses (Rothschild, 1999). The first standardized examinations for the courses were administered in 10 subjects in 1954. By this time, the program had expanded to 27 schools. The College Board was chosen to oversee this process in 1955 and named the program, College Board Advanced Placement Program (The College Board, 2003).

The program developed over the next few decades to include teacher training and course expansion (Rothschild, 1999). Many high schools expanded their honors courses to include AP coursework during the 1970s and 1980s as college enrollment rates increased (Scheider, 2009). AP programs became standard in terms of college preparation and admissions' criteria for selective universities.

After the program became more established, the College Board made concerted efforts to expand program offerings to low-income and minority students (The College Board, 2003). Program expansion created a dilemma between ensuring equal program access for all students and providing an opportunity for the distinction of high-achieving students (Schneider, 2009). Programs were also developed to assist students in cultivating the academic skills necessary for success in advanced coursework.

The Advanced Placement Program has grown to include 37 courses in math and computer science, English, science, history and social science, world language, and art (College Board, 2017). AP courses are comprised of rigorous curriculum similar to first-year introductory college courses (Cooney et al., 2013; Patterson et al., 2011; Speroni, 2011; Venezia & Jaeger, 2013). AP classes are designed to cultivate the critical thinking skills needed for success in college-level coursework. The courses are standards-based courses which are designed by committees of professors. AP teachers also contribute to course construction and program

implementation. A comprehensive, end-of course examination is used to assess student performance (Handwerk et al., 2008). Exams are scored on a scale of 1 to 5 with most colleges offering credit to students who score a 3 or higher on a particular exam (Cooney et al., 2013; Moore et al., 2010; Speroni, 2011).

The exam score scale was designed to communicate a student's expected performance in the corresponding introductory course. The scale is as follows: 1= no recommendation; 2= possibly qualified; 3= qualified; 4= well qualified; and 5=extremely well qualified (Chajewski, 2011; Patterson et al., 2011). Students who experience success on the AP exam may earn credit for the college course or be exempt from the introductory college course (Chajewski, 2011; Paek et al., 2010; Warne, 2017).

AP exams are scored through the AP Reading process (College Board, 2014). The exam is scored against a set of standards developed by secondary and postsecondary educators across the United States. Students, colleges, and universities gain confidence from the objective scoring process. This standardization not only defines course content, but it also provides consistency in course implementation nationwide.

The College Board obtains reliability data for all AP exams scores (Ewing, Huff & Kaliski, 2010). Studies are conducted to estimate the reliability for scores on test items. A group scoring process also occurs to make sure that rubrics are consistently applied during the scoring process. The reliability of exam scores has proven to be stable across the years.

AP courses are taught on high school campuses by school faculty. Training is available and sometimes required depending on the course (Speroni, 2011). Teachers can attend AP Institutes in which they develop lessons with other professionals in their disciplines (Paek et al., 2010). In an effort to maintain course quality and compliance with college-level course criteria,

AP teachers must submit their syllabi to the College Board for approval through the AP Course Audit process. Postsecondary evaluators ensure that submitted syllabi show evidence of meeting prescribed curricular and resource requirements (College Board, 2014).

AP Course Participation and Access

The AP program began to fast track the attainment of a college degree for advanced learners. The program was designed for the elite, and program participants were recruited for their intellect and potential. Rothschild (1999) reported that during the 1980s, AP students typically came from wealthy families with college-educated parents. In 1988, minority program participation increased 140% over participation in the early 1980s. By the end of the century, the profile of an AP student was not easily identified. In 2014, the College Board (2014) reported that the expansion of the AP program resulted from the belief that "all students who are academically prepared—no matter their location, background, or socioeconomic status—deserve the opportunity to access the rigor and benefits of AP" (p. 5).

Hallett and Venegas (2011) stated that AP courses have increased in popularity for several reasons. The AP program has a reputation of academic elitism, as students who enrolled in the program were thought to be the best and brightest. Students and families also saw program enrollment as a potential cost-saving measure that could decrease tuition costs and time to college degree completion. Many postsecondary institutions also assumed that students who passed the AP exam had the knowledge and skills for academic success.

The number of AP testers doubled from 2003 to 2013 (College Board, 2014). The number of low-income students quadrupled during this time period. While such rapid growth can lead to programs with a diluted curriculum, the number of students scoring at least a 3 on the

exam almost doubled during this time period. The College Board (2014) reported that one in five high school students earned at least a 3 on one Advanced Placement exam.

In the 2003-2004 school year, 58% of high school programs in the United included at least some type of AP program (Handwerk et al., 2008). The researchers divided these schools into two categories: “High and Low AP Schools” (p. 3). Schools identified as "High AP" offered at least course in English, science and math. All other schools were labeled as "Low AP" schools for their lack of AP intensity. The number and type of AP courses offered to students may differ according to the budget and mission of the sponsoring school.

In a 2008 study, Handwerk et al. examined data from all public high schools in the United States. The researchers found that in the 2003-2004 year, only 5% of high school students who attended schools with AP programs participated in the courses. This is a small number of students in comparison to the number of students enrolled in AP courses today. Only 0.4% of low-income students participated in the AP programs available at their high school. Students were more likely to participate in AP courses and to take the corresponding exam if they attended large, affluent, public high schools.

Barnard-Brak, Garnett, and Burley (2011) conducted a study of factors that influence AP program enrollment. As the percentage of minority and economically disadvantaged students increased in the high school, the number of AP courses available to them decreased. The researchers also found that larger schools were able to offer more AP courses to students. The increase in the availability of courses in larger schools was counterbalanced by a student’s minority and low-socioeconomic status. There is an undisputable disparity in the number of low-income students who participate in the AP program (Barnard-Brak et al., 2011; Handwerk et al., 2008).

Advanced Placement is often used to extend the learning of high-performing students. Many schools use a student's high school grade-point average or letter grade in a similar course to determine program eligibility (Sadler, 2010b; College Board, 2014). Flores and Gomez (2011) stated that the selection process for AP course participation may preclude students who perform well in regular academic coursework. Paek et al. (2010) also reported that students' enrollment in AP Biology was selective. Most schools also had polices which provide guidelines for exam participation. Fewer than half of participating schools required students to take the AP exam upon course enrollment.

Hallett and Venegas (2011) interviewed low-income minority students in California. When minority students were given the opportunity to enroll in AP courses, most took advantage of the invitation. However, those students experienced lower rates of exam success as compared to their majority peers. These findings are consistent with current enrollment trends. In 2013, African Americans were the most underrepresented in terms of program participation and exam success (College Board, 2014). Barnard-Brak et al. (2011) found that students from more affluent schools were more likely to take the AP exam and earn a passing score. Shaw, Marini, and Mattern (2013) found that Asian-Americans had the highest rates of exam success while African-Americans had the lowest rates of success.

Benefits of AP Program Participation

Academic skills. Milewski and Gillie (2002) reported that AP courses provide students with the opportunity to gain study skills and critical thinking skills necessary for academic success. Paek et al. (2010) reported that more than two-thirds of AP teachers indicated that students study independently for more than four hours per week. The teachers emphasized that students are responsible for their own learning and exam preparation.

In an investigation of AP student experiences, Cooney et al. (2014) reported that survey respondents gained test-taking skills, writing skills, grit, time-management skills, and debate skills. Students also reported gaining confidence in their ability to succeed in college. Students who did not experience exam success reported similar benefits with the exception of test-taking skills. AP success was defined by students who score at least a 3 on one AP exam. Flores and Gomez (2011) reported that students who participate in AP programs gain writing and problem-solving skills which aid in later college success. In a systematic review of literature, Park, Caine, and Wimmer (2014) reported that students gain academic skills such as time-management and study skills from their participation in AP coursework.

In a survey of AP teacher practices, Paek et al. (2010) reported that lecture was the most common course-delivery method. Teachers also indicated that students were required to explain their thinking and justify their position. Students were most frequently assessed using multiple choice tests. Sadler (2010) found that AP students spent more time engaged in collaborative learning and teaching each other. AP students reported spending more time preparing for standardized tests than students in honors and regular courses. AP students also spend more time engaged in reading complex texts and doing homework.

Students in schools with large populations of low-income or minority students may benefit from having teachers who participate in AP training. Many teachers in these schools report that most of their professional development is acquired from AP Summer Institutes and participating in the AP scoring process (Schneider, 2009). Teachers have the opportunity to increase their subject-area knowledge, share resources, and learn new teaching techniques.

Grade point average. The College Board has sponsored a great deal of research about the benefits of AP program participation on college success (Cooney et al., 2013; Handwerk et

al., 2008; Patterson et al., 2011). Patterson et al. (2011) examined the effects of taking AP exams on students' first-year, postsecondary grade point averages. The researchers found that better performance on AP exams was related to better performance in first-year college coursework in the respective discipline. Students scoring a 3 or higher on the AP exam significantly outperformed their peers who did not take an exam; however, students did not outperform their peers who did not take an AP exam in art, music, and computer science. In mathematics, English, history and world language, students who scored at least a 2 on the AP exam significantly outperformed their non-AP examinee peers in terms of their grades in the corresponding college courses.

Scott, Tolson, and Lee (2010) examined the academic performance of former AP participants at a Texas university. Students who were awarded AP credit had higher first semester college grade point averages than students who did not participate in AP. AP participants from historically underrepresented groups had lower grade point averages than their majority counterparts; however, the AP program participants from underrepresented groups had higher grade point averages than students from underrepresented groups who did not participate in AP.

Morgan and Klaric (2007) found that students who earned AP credit had higher grades in the subsequent course than those who took the comparable introductory course at the college or university. These results indicate that students who took the AP course in high school were better prepared than their peers who did not take the AP course. Sadler (2010a) also found that students who participated in advanced coursework had higher grades in college. Students who passed the AP exam had the highest grades in college coursework. Shaw et al. (2013) found that the

average of a student's AP exam scores had the strongest relationship with the first year grade-point average.

College admissions and graduation. Hallett and Venegas (2011) reported that admissions counselors view AP course participation as an indicator of academic success. Students also perceive program participation as beneficial for the college admissions process (Park et al., 2014). College admissions representatives use AP program participation to evaluate students' academic preparation and high school quality (Klopfenstein & Thomas, 2010; Shaw, Marini, & Mattern, 2013). Admissions representatives are more interested in program participation than the score students earn on the exam (Shaw et al., 2013). At selective colleges and universities, students may be penalized if they do not participate in AP courses available in their high school.

Many colleges add weight to a student's high school grade-point average for AP participation (Klopfenstein & Thomas, 2010; Sadler, 2010a). Many state policies also call for the addition of points to students' grades for AP program participation (Klopfenstein & Thomas, 2010). These policies often refer to course participation without requiring students to take the exam. The weighting of grades increases a student's grade point average and class rank. Some postsecondary institutions have automatic acceptance policies for students who receive the highest rank in their class (Klopfenstein & Thomas, 2010; Sadler, 2010a).

Chajewski (2011) found that the percentage of students, who participated in AP courses and the corresponding exam and enrolled in a four-year institution, exceeded the national average of postsecondary enrollment by about 18%. Students, who participated in the AP course but did not take the exam, enrolled in four-year postsecondary institutions at almost half the rate of those who participated in the exam. Even though black students enrolled at a rate less than

their majority peers, those who participated in the AP program had higher four-year enrollment rates than nonparticipating minorities.

Students who took two or three AP courses had higher four-year postsecondary enrollment rates than their nonparticipating peers (Chajewski, 2011). Dougherty, Mellor, and Jian (2006) found that students who participated in AP courses and took the exam were 47% more likely to enroll in college than their non-participating peers. Students who took the AP course, but did not take the AP exam were 27% less likely to enroll in college than those who took the exam. Low-income students with exam success tended to benefit the most as the graduation rate for this group increased from 7% to 47%.

In addition to higher enrollment rates, secondary students who participate in AP coursework have higher four-year college graduation rates than their nonparticipating peers (Morgan & Klaric, 2007). Dougherty et al. (2006) found a significant relationship between passing the AP exam and graduating from college for all groups except for African-Americans. However, African-American students, who took the AP exam but did not pass, had higher college graduation rates than any other group. The benefit for this group may come from the exposure to more rigorous curriculum and high expectations associated with AP course participation.

Financial benefits. AP students can save money by earning high enough scores to avoid taking introductory courses in college (Paek et al. 2010). Duffy (2010) reported that an AP student earning credit for 10 courses could have a potential savings of $25,000 on tuition at a prestigious university. Flores and Gomez (2011) stated that successfully passing AP exams reduces tuition and the number of semesters students are enrolled in college. Because many

states offer financial assistance and waivers for AP exam participation, low-income students may experience the benefits of AP program participation at no cost (DOE, 2017).

Student Perceptions of Advanced Placement

Researchers would be remiss to discount student perceptions of AP program enrollment by only focusing on the observable differences in secondary grade-point averages and rates of college retention and persistence. Cooney et al. (2013) investigated student perceptions of the benefits of taking AP courses at a Southwestern university. Seventy-nine percent of students surveyed indicated that AP courses were challenging. Most students also indicated that they put a lot of effort into their AP coursework. The majority of students indicated that their AP coursework was somewhat higher quality than other high school coursework. The researchers discovered three themes in student responses associated with AP classes: AP coursework had a greater depth of content, AP teachers had high expectations for students, and the AP classroom environment was made more positive by including more motivated students. When asked about AP teacher qualities, the majority of students agreed that teachers were passionate about the content, while 86% indicated that teachers had high expectations for students.

Study participants a reported improved skills and increased confidence in terms of college preparedness (Cooney et al., 2013). Participants also acknowledged the quality of the instructor in the benefits they described. Seventy percent of students reported gaining test-taking skills through AP course participation. Sixty-seven percent of students reported learning time-management skills, grit, and analyzing others' points of view (Cooney et al., 2013).

In a 2010 study, students were surveyed about teacher characteristics in regular, honors, and AP courses (Sadler, 2010b). Students identified AP teachers has having higher teaching

ability and content knowledge than those in other courses. These results may indicate that AP instructors have more training and teaching experience. Milewski and Gillie (2002) examined characteristics of AP teachers and found that AP teachers typically have at least a master's degree in the discipline they teach, were more experienced, and were motivated to participate in training opportunities. AP teachers of color were severely underrepresented in the study. Paek et al. (2010) surveyed AP Biology teachers and found that teachers were usually veteran teachers with advanced degrees and certifications.

In a 2011 study of AP participation in urban schools, students reported both positive and negative experiences in AP Programs (Hallett & Venegas, 2011). Study participants indicated that many teachers were nice but did not have high expectations for student performance. Participants identified several areas of concern about teacher preparation, course construction, and scheduling issues. Students reported that AP teachers in their schools did not have appropriate credentials or attend available trainings. Participants also reported a lack of alignment between preparation and the AP exam. Students also conveyed a lack of advisement from teachers and counselors. Many schools offered courses online or on a modified schedule, which left students feeling unprepared for the culminating exam.

Concerns about Advanced Placement

Because AP students are often highly motivated and high achievers, attributing academic success to program participation is difficult (Saddler & Sonnert, 2010). Extensive research exists about the academic benefits of Advanced Placement, but most of the studies have been commissioned by the College Board. Warne (2017) warned of a potential conflict of interest in these studies. Little independent research is available (Scott et al., 2010; Warne, 2017).

Rothschild (1999) stated that several problems emerged as the AP program expanded. Students who were expected to perform poorly were encouraged to skip the exam in order to raise school and teacher exam-averages. Students also chose to withhold their exam scores from postsecondary institutions, so that they could retake the corresponding course in college for a better grade.

While AP programming has experienced tremendous growth, many students who meet program prerequisites do not participate in AP coursework. The College Board (2014) reported that in the class of 2013, nearly 300,000 students had the potential to succeed in the AP program but opted not to participate. Student participation may have been limited by the course offerings at their high school.

Some critics are concerned about the quality of AP course work due to the breadth of course content and focus on test preparation (Hallett & Venegas, 2011; Sadler, 2010b; Schneider, 2009). Teachers may not be able to delve into the course content as they rush to cover all the required standards. Paek et al. (2010) stated that 43% of AP instructors report providing surface-level coverage of the material potentially covered on AP exams. Lacy (2010) reported that students miss out on the rigor, process, and critical thinking associated with AP coursework in pursuit of a passing score.

Handwerk et al. (2008) recommended that school leaders "identify teacher quality issues" (p. 24) to provide students with access to appropriate instruction. If AP course quality is compromised students may be at a disadvantage for AP exam preparation and success in later college coursework (Hallett & Venegas, 2011). Benefits of AP enrollment may depend on the requisite knowledge of students, teacher preparation, school resources, and district expectations.

Sadler (2010b) reported that AP has lowered its standards to increase passing rates and maintain the positive public perception of the program. Critics of AP are concerned that many students participate in the AP program to add the distinctive title to their transcripts, but they do not experience the level of rigor necessary for college success (Hallett & Venagas, 2011). Many AP programs focus on test preparation and forgo the development of reasoning and logic skills required for academic success in college (Schneider, 2009).

Handwerk et al. (2008) conducted a study which examined several factors including the number of high school students enrolled in high school AP courses and AP exam participation. The researchers coupled program participation with sitting for the AP exam and found that the number of students who fully participate by taking the exam is small. Of the students who opt to take the exam, most do not earn credit or placement for their efforts. Only 2.4% of AP students were eligible to receive college credit by earning a 3 or better on the exam.

Problems with credit transfer may occur even with full program participation. Hallett and Venegas (2011) found that many schools have increased their requirements for college placement. Whereas 3 was considered a passing score in previous years, many selective schools have raised their placement score to 4 or higher (Schneider, 2009).

Dual Enrollment

The definition of dual enrollment is extremely broad due to varying program objectives and structures (Burns & Lewis, 2000). Dual-enrollment programs are programs in which high school students, typically juniors and seniors, are permitted to enroll in college courses (Marken et al., 2013; Struhl & Vargas, 2012). Students are simultaneously enrolled in both institutions, thus they are dually enrolled. This simultaneous enrollment is referred to dual enrollment, joint enrollment, concurrent enrollment or dual credit (Wyatt et al., 2015; Zinth, 2016a). Unlike other

early postsecondary opportunities, such as Advanced Placement, dual enrollment students are enrolled in the actual college course with a college syllabus. Achievement in dual-enrollment courses is measured by the student's final grade in the course, not by a standardized assessment score (Karp et al., 2007; Speroni, 2011). Students receive credit for the high school course, college course, or both. A college transcript provides documentation of a student's performance in the dual-enrollment course (Cassidy, Keating, & Young, 2010; Marken et al., 2010).

Dual-enrollment programs were initially developed to meet the needs of secondary and postsecondary officials as they sought ways to assist students transitioning from high school (Berger et al., 2013). These programs were originally structured to extend the learning of high-performing students (Marken et al., 2010; Speroni, 2011). Some program models also focused on developing students' vocational readiness skills to support workplace success (Burns & Lewis, 2000; Klopfenstein & Lively, 2012). Even with varying program designs, the primary goal of dual-enrollment programs is to ensure high school students earn a postsecondary credential (Berger et al., 2013).

Current dual enrollment policies address the need to increase the rigor of high school course work while also bridging the gap between secondary and postsecondary sectors (Cassidy et al., 2010; Karp et al., 2007). These programs have changed over the past few decades as government policies have been added to oversee program structure and implementation (Zinth, 2016b). Much of the recent work with dual enrollment has focused on better preparing students for the academic, social, and financial challenges that occur after high school graduation (Hofmann, 2012).

In relation to Career and Technical education, dual enrollment helps to increase the rigor of the CTE curriculum and provide more alignment in career pathways. Many CTE educators

are encouraging dual-enrollment participation as opposed to articulated coursework to provide high-level and technical experiences (Karp et al., 2007) for students. This is evidenced by the passage of Public Law 109-270 or the Carl D. Perkins Career and Technical Education Act of 2006 which called for increased secondary and postsecondary alignment to enhance success in the workplace.

Dual-enrollment courses are structured in a variety of ways. In some programs, high school students attend classes on college campuses with other matriculated students (Burns & Lewis; 2000; Khazem & Khazem, 2014). Many postsecondary partners allow high school instructors to serve as adjunct professors and teach on site in the high school (Hofmann, 2012; Karp et al., 2007; Marken et al., 2013; Venezia & Jaeger, 2013); this configuration provides the widest access to dual-enrollment coursework. The Tennessee Department of Education (2017b) defines dual enrollment as an "opportunity that is taught either at the postsecondary institution or at the high school by postsecondary faculty or credentialed adjunct faculty" (p. 13).

Cassidy et al. (2010) described three different dual enrollment structures. In singleton dual-enrollment courses, students enroll themselves in one or more regular college courses. Students who participate in these courses have usually completed most of the courses required for graduation. Comprehensive dual-enrollment programs usually occur during the junior or senior year in high school and are comprised of several courses. The courses in a comprehensive program comprise most of a student's course load. Enhanced comprehensive dual-enrollment programs mimic comprehensive programs with the addition of academic advising and counseling support. Early colleges are considered enhanced comprehensive dual-enrollment programs. Students in early college programs have the option of enrolling in enough dual-enrollment courses to earn an associate's degree while in high school (Berger et al., 2013).

Some dual-enrollment programs are structured to address the needs of struggling learners or those academically underprepared for college coursework by providing contextualized learning support. In these dual-enrollment programs, students may take a course to develop basic skills in reading, writing, or math (Rutschow & Schneider, 2011). Dual-enrollment programs, which function as interventions, help students gain the academic skills necessary for college success and bypass the need for developmental education.

Dual-Enrollment Participation and Access

Access to dual enrollment has increased over the last 20 years (Ganzert, 2014). Dual enrollment was once seen as an opportunity to introduce high achieving high school students to higher education (Klopfenstein & Lively, 2012). At the program's inception, dual-enrollment courses were offered in more affluent schools with high postsecondary going rates (Venezia & Jaeger, 2013). However, dual-enrollment programs are gaining traction in schools with high-need student populations. Dual-enrollment program goals have expanded to include increasing access to at-risk student populations (Hofmann, 2012; Marken et al., 2013). Career and technical dual-enrollment course enrollment rates have also increased (Venezia & Jaegar, 2013). Ganzert (2014) described the Huskins Bill program in North Carolina which focuses on vocational skills. Dual-enrollment courses are offered to a cohort of high school students in a school or district. Students receive instruction from a qualified high school teacher or community college adjunct faculty member. Students can earn transferable college credit or credit for specific vocational elements.

Dual-enrollment program eligibility may be regulated by state policies or governed by the host postsecondary institution (Zinth, 2016b; Zinth, 2016c). Dual-enrollment program access is often regulated by the conferring state. State policies have been created which make it easier for

students to access dual-enrollment coursework at the community college level (Ganzert, 2014). The implementation of such policies has increased the number and diversity of students participating in dual-enrollment programs.

State-level dual enrollment policies provide guidelines for dual-enrollment participation (Zinth, 2016b). When policies require mandatory program participation, high schools in the state must permit all students who meet eligibility criteria to participate in dual-enrollment courses. Postsecondary institutions must admit eligible students on a space-available basis. Statewide voluntary participation courses allow postsecondary institutions and high schools or districts to deny course participation and enrollment. There are currently 10 states which require all high schools and eligible public postsecondary institutions to provide dual enrollment opportunities to secondary students. Twenty-eight states have voluntary dual-enrollment participation policies (Zinth, 2016b).

One-fourth of state policies allow the postsecondary institution and partnering high school or district to determine the method of delivery. (Zinth, 2016c). Almost half of the states offer at least one program which allows students to participate in dual-enrollment courses on the high school or college campus. Policies in three states require students to attend classes on postsecondary campuses. Thirty-five states have programs which provide online dual enrollment opportunities to high school students. Policies in 14 states do not specify where dual-enrollment courses may be offered. In these states, determinations are jointly made by the high school or district and partnering postsecondary institution.

Dual enrollment has become a strategy used to increase college readiness and success for students from historically disadvantaged backgrounds (Kanny, 2015; Klopfenstein, 2012). Klopfenstein (2012) reported that dual-enrollment programs were more likely to occur in rural

areas and with low-income students. Dual enrollment provides access to a broader range of course offerings for students who live in rural areas (Crouse & Allen, 2014). The dual-enrollment courses add depth and variety to the curriculum offered to participating students. The courses are often more rigorous than the courses taught in secondary schools in smaller communities. A broad range of course offerings are available as community colleges and universities can potentially offer any of the courses in their catalog to eligible students (Speroni, 2011). Program agreements are developed between the postsecondary institution and the high school, which specify course offerings for students (Klopfenstein & Lively, 2012).

Benefits of Dual-Enrollment Programs

Academic benefits. One of the best ways to prepare high school students for the rigor of college coursework is to allow them to participate in dual-enrollment programs (Struhl & Vargas, 2012). Participation in dual-enrollment courses increases the rigor of academic coursework for high school students while also increasing high school retention rates (Ganzert, 2014). Many dual enrollment students have higher high school grade point averages as a result of dual-enrollment participation (Crouse & Allen, 2014; Kanny, 2015). In an Iowa study, dual enrollment students outperformed traditional students in terms of their composite ACT scores and high school grade point averages. Crouse and Allen (2014) reported that these results suggest elevated levels of academic preparation for students who participate in dual-enrollment programs. Ganzert (2014) conducted a study to explore the connection between participating in dual-enrollment coursework and later college success. The results showed that students who participated in both academic and vocational dual-enrollment coursework had higher first-year grade point averages.

Crouse and Allen (2014) found that dual enrollment students outperformed traditionally enrolled students in several courses. These results suggest that taking community college courses in high school is just as effective as taking courses after high school graduation. Dual-enrollment participation may also lead to higher grade-point averages after college matriculation. Karp et al. (2007) found that dual-enrollment participants had higher postsecondary grade point averages than their nonparticipating peers. Allen and Dadgar (2012) also found that dual-enrollment participation had positive effects on college grade point average.

In an investigation of cognitive college readiness skills in dual enrollment students, Martin (2013) compared the effects of program participation on students enrolled in three North Carolina dual-enrollment programs. Students enrolled in the Huskins program were public high school students who took dual-enrollment courses comprised of mostly dual enrollment students. Non-Huskins students took courses with traditionally enrolled students. Students enrolled in the Early College High School Program participated in courses on the sponsoring college campus. These programs were relatively small containing fewer than 100 students. Students enrolled in the Huskins program had higher academic success than the other groups based on student grades.

College enrollment and persistence. In addition to the short term benefits students receive from dual-enrollment participation, dual enrollees also experience long term benefits such as increased rates of postsecondary enrollment, persistence, and degree completion (An, 2013; Crouse & Allen, 2014; Kanny; 2015; Swanson, 2010)). In a study of one of the country's most established dual enrollment systems, Karp (2007) examined the effects of dual enrollment on Florida students. Florida has a statewide dual-enrollment program in which all high school students who meet the enrollment criteria, typically a 3.0 grade point average and qualifying test scores, are offered a chance to participate in dual-enrollment courses. Karp and Hughes (2008)

examined the impact of dual-enrollment participation on college matriculation and persistence. Students who participated in dual enrollment were more likely to earn a high school diploma than their nonparticipating peers and more likely to enroll in a four-year institution.

Martin (2013) did not find any significant differences in the college acceptance rates among students who participated in three different dual-enrollment programs. Students enrolled in non-Huskins dual-enrollment programs were more likely to be accepted into two-year open admissions colleges. 95.1% of participants in all three programs were accepted into a college or university.

Struhl and Vargas (2012) found that students enrolled in Texas high schools had higher rates of postsecondary enrollment and persistence than those who did not participate. Students who completed at least one dual-enrollment course were more likely to enroll in a two or four-year college and persist through the second academic year. Dual-enrollment participants were also more likely to earn a postsecondary credential within six years.

Swanson (2008) compared college transcripts of students who participated in dual enrollment with transcripts of college students with similar grade point averages who did not participate in advanced coursework. Students who participated in dual enrollment were more likely to enter and persist in college coursework. Dual-enrollment participants were 12% more likely to enter college within seven months of high school graduation and were 16% to 20% more likely to earn bachelor's degree.

Grubb, Scott, and Good (2017) assessed the college completion rates of dual-enrollment participants at a community college in Tennessee. The researchers found that students who participated in dual-enrollment coursework were 2.5 times more likely to graduate in two years than students who did not participate in dual enrollment. Thirty percent of dual-enrollment

students completed college in two years while 45% of dual-enrollment participants graduated in three years compared to 36% of their nonparticipating peers.

Course type and number. Karp et al. (2007) examined data collected from the City of New York's (CUNY) dual-enrollment program, College Now. Participants in the College Now program were more likely to earn a bachelor's degree and had slightly higher grade-point averages than their nonparticipating peers. The researchers also performed an analysis to account for participation intensity, or the number of dual-enrollment courses completed. The examination of the CUNY system did not provide evidence of increased postsecondary enrollment rates for all dual enrollment students, but researchers did find that students who participated in two or more dual-enrollment courses were 3.5% more likely to pursue full time enrollment.

An (2013) found that the number of dual enrollment credits is important when examining the effects on college degree attainment. Students who earned three college credits, or the equivalent of one course, were just as likely to earn a degree as those who did not participate in any dual-enrollment coursework. Students who earned at least six college credits were 12 percentmore likely to earn a bachelor’s degree than nonparticipants. Students earning more than six college credits were no more likely to earn a degree. The results of the study suggest that taking only one dual-enrollment course does not significantly impact a student's ability to earn a college degree. Ganzert (2014) also found that the students who enrolled in one or two dual-enrollment courses had higher grade-point averages than students who did not have any early college access. However, the increase in GPA was not as dramatic for students enrolled in three to five classes.

The type of dual-enrollment course in which students enroll may also impact the level of benefit for students (Struhl & Vargas, 2012). Students who enrolled in English language arts courses tended to benefit more than students enrolled in vocational, language, or physical education dual-enrollment courses. Students who enrolled in mathematics dual-enrollment courses were no more likely to enroll, persist, or obtain a degree. However, students who enrolled in two or more English or math courses also had higher access and persistence rates.

Students from underrepresented groups. One benefit of dual-enrollment coursework is that access has increased in regard to race and ethnicity, socioeconomic status, and prior academic achievement (Kanny, 2015). An (2013) analyzed data from the National Education Longitudinal Study and found that low income students who participated in dual-enrollment programs were more likely to earn a college degree than other low income students who did not participate in dual enrollment. Struhl and Vargas (2012) also noted that economically disadvantaged students tended to benefit the most in terms of college enrollment. Low income students were 2.4 times more likely to enroll in college after completing at least one dual-enrollment course. In addition to low-income students, An (2013) found that first-generation college students were more likely to benefit from dual-enrollment participation than students with college-educated parents. These results indicate that while dual-enrollment programs are designed to prepare all students for the rigor of college-level work, students from low socioeconomic backgrounds may benefit the most.

Non-cognitive benefits. Swanson (2010) stated that dual-enrollment participation changes attitudes and behaviors of high school students. These changes impact students' academic integration and socialization within the postsecondary setting. In a study conducted by Ozmun (2013), dual enrollment students did not report having high levels of college and

academic self-efficacy prior to enrolling in dual-enrollment courses. Students did report high levels of motivation prior to enrollment. The results implied "that the ingredients for college success may lie within the dual-credit programs themselves" (p. 69). Crouse and Allen (2014) also reported that students may develop increased levels of self-efficacy by believing they possess the skills necessary to transition to college.

An and Taylor (2015) examined both cognitive and non-cognitive college readiness factors in students who participated in dual-enrollment programs, those who participated in credit by examination programs, like AP, and those who did not participate in any accelerated learning programs. Conley's (2007; 2014) model of college readiness was used to examine differences in the three groups. Students who earned dual enrollment credit were found to be more college ready than students who did not participate in any early postsecondary opportunity in the areas of key cognitive strategies, key content knowledge, and key learning skills and techniques. The results suggested that dual enrollment students are more motivated, have better study skills, and increased content knowledge and academic skills.

To determine if significant group differences existed in non-cognitive college readiness factors of dual-enrollment participants in three dual-enrollment programs, Martin (2013) administered a college success scale to program participants. Significant differences were found in terms of students' commitment to education, self- and resource management skills, and career planning skills. Students in traditional dual-enrollment courses had higher scores than the other two groups in all three study areas. All three dual enrollment groups had higher career planning scores than students who did not participate in dual-enrollment coursework.

Transition. Students who participate in on-campus dual-enrollment programs not only benefit from experiencing rigorous coursework in an authentic way, but they also gain

experience with college processes and nuances (Ganzert, 2014; Khazem & Khazem, 2014; Klopfenstein & Lively, 2013). For example, students may experience participating in larger classes with schedules varying from the traditional high school model. Attendance policies and homework requirements in college coursework may differ from the structured expectations of high school teachers. Marken et al. (2010) reported that participating in on-campus dual-enrollment programs allows students to familiarize themselves with the college campus, buildings, and personnel. Klopfenstein and Lively (2013) stated that students must also acclimate to an environment with "limited opportunities to display subject matter proficiency" (p. 62).

Financial benefits. Dual-enrollment programs can help save students both time and money as well as reduce the amount of time it takes to earn a degree. Students can reduce the amount of time required to earn a degree. Allen and Dadgar (2012) found that dual-enrollment courses helped students to attain more credits in high school and after college matriculation. Students save money as many dual-enrollment programs offer some form of financial assistance. Tuition rates are often waived or reduced, offering high school students inexpensive ways to take college courses while in high school (An, 2013).

In a nationwide study of dual enrollment practices, Marken (2013) reported that over half of schools surveyed, reported offering dual-enrollment coursework at a reduced rate for all program participants. Seventy-seven percent of postsecondary institutions reported that the college or university as the primary source for paying tuition for dual-enrollment courses. High Schools and districts were responsible for student fees 44% of the time, and the state paid tuition 38% of the time.

In Tennessee, high school students may receive tuition assistance for dual-enrollment courses at postsecondary institutions through the Dual Enrollment Grant (TDOE, 2017a). While

requirements previously required students to have a 3.0 grade point average or 21 ACT score to access funds, the enrollment criteria have changed to match the admissions requirements of the sponsoring college or university. This change in language allows students to enroll in postsecondary training programs as well as traditional dual-enrollment coursework. Eligible students receive up to $500 for each of their first two dual-enrollment courses at two and four-year colleges or universities which more than likely covers the tuition for the course. Students enrolling in a dual-enrollment course in a postsecondary training program at a Tennessee College of Applied Technology center may receive up to $100 per clock hour.

Private organizations also provide funding for dual enrollment opportunities. The Bill & Melinda Gates Foundation, the Carnegie Corporation of New York, WK Kellogg Foundation, and the Woodruff Foundation and Ford Foundation provided over $124 million dollars to the early college network (Bill & Melinda Gates Foundation, 2004). The early college network provides minority and low income students in participating schools with the opportunity to take dual-enrollment courses tuition free. Berger et al. (2013) reported that 61% of early college participants earned at least one college credit prior to high school graduation and that, on average, program participants earned at least one semester's worth of college credit. Early college programs are structured so that students have the option to earn an associate's degree while in high school which significantly decreases the cost of earning a bachelor's degree.

Student Perceptions of Dual Enrollment

Kanny (2015) conducted a small scale, qualitative study at an independent charter school in Los Angeles, California with high school students who participated in on-campus dual-enrollment courses at a local community college. The researcher found that students viewed their dual enrollment experiences as "simultaneously beneficial and detrimental" (p. 61). Six

themes emerged from the data. Three themes developed around the benefits of dual-enrollment participation: exposure, learning the hidden curriculum, and independence and freedom. Study participants responded positively about the opportunity to participate in a college course and interact with rigorous content. Some of the participants reported that they had not previously encountered this level of rigor in their high school coursework. Participants also reported "becoming aware of the more implicit skills and practices that are not only expected of college students but also lead to academic success in college" (p. 62).

One college readiness skill acquired through dual-enrollment participation is learning how to positively interact with college faculty members (Kanny, 2015). Participants' responses also indicated that students were more aware of their own learning and their learning styles. The final theme associated with the benefits of dual-enrollment participation was the independence students experienced in the college setting as opposed to the more structured high school environment. While this freedom did provide independence, participants also reported the negative impact of independence on their grades. Even though the increased freedom presented a challenge for students, students tended to view the experience as beneficial and important to their postsecondary success. Students included the limited support systems available at both institutional levels along with negative interactions with college students and faculty members as detrimental to their dual enrollment experiences. Some study participants also noted the problem in the transfer of credit for their dual-enrollment participation.

Burns and Lewis (2000) examined student perceptions of taking dual-enrollment courses on or off campus. Students tended to have better experiences when dual-enrollment courses were taken on the college campus; however, all students reported that participating in dual-enrollment courses, whether on or off campus, was a valuable experience. Students taking on campus dual-

enrollment courses reported feeling a greater sense of responsibility for their work and taking the class more seriously. All study participants valued their experiences enough to pursue further dual-enrollment course enrollment.

Concerns about Dual Enrollment

Critics of dual-enrollment programs question the course standards and individual student competency levels (Ganzert, 2014). There are also concerns about credit transfer, course rigor, and funding at both the student and institutional level (Swanson, 2010). Because dual-enrollment courses are not subject to the same level of regulation as secondary courses, some researchers are concerned about the quality of instruction and the level of course rigor. Concerns about course quality have arisen due to the lack of a standardized curriculum and grading system across institutions (Speroni, 2011; Wyatt et al., 2015).

The concern about course quality applies to dual-enrollment courses taught by high school staff more so than programs staffed by college professors or adjuncts (Crouse & Allen, 2014). The legitimacy of off-campus programs has been questioned in relation to faculty credentials and selection (Ganzert, 2014). Dual enrollment instructors, who may be high school teachers, college adjuncts or full time college professors, must meet the certification requirements of the institution which are based on accreditation standards (Speroni, 2011; TDOE, 2017b). Using high school teachers as adjuncts may decrease course rigor and lessen the authenticity of the college experience. Speroni (2011) found that students did not benefit from taking on campus dual-enrollment courses in terms of grade point average, college enrollment, or persistence.

Karp (2012) performed classroom observations of dual-enrollment courses and labeled courses in terms of alignment with traditional college courses. Authentic dual-enrollment courses

"reflected the content and pedagogical structures of high-quality, equivalent courses offered on the college campus" (p. 25). Students in these courses were required to work independently, take responsibility for their learning, and engage in classroom discussions. Students had new classroom experiences that allowed them to practice how to behave in the college classroom and interact with college personnel. Inauthentic dual-enrollment courses did not require interaction with peers or instructors. Students were also given notes and assisted with tasks typically assigned to traditionally enrolled students.

Some dual enrollment students may experience difficulty in the transfer of credits earned through dual-enrollment participation (Burns & Lewis, 2000; Kanny, 2015). Assigning high school credit for course completion is rarely a problem because high schools establish agreements with the sponsoring postsecondary institution. Students may experience difficulty when trying to transfer credit to an institution outside of the program agreement (Burns & Lewis, 2000). Due to course quality concerns, many postsecondary institutions only award elective credit for courses completed in high school. While students still receive credit, they must retake the course after college enrollment. The transfer of course credits will vary greatly as these decisions are made by individual colleges or universities (Burns & Lewis, 2000).

Research has shown that participation in dual-enrollment programs provides increased access for underrepresented groups and economically disadvantaged students (Kanny, 2015; Struhl & Vargas, 2012). However, Crouse and Allen (2014) found that students from ethnically diverse backgrounds enrolled in dual-enrollment programs at rates less than their majority peers. More concerted efforts are needed to include minority students in dual-enrollment programs.

Funding for dual-enrollment programs is dependent upon state policies and local funding initiatives. There are currently five states which assume the primary financial responsibility for

dual-enrollment coursework. Thirteen states along with the District of Columbia have funding policies which are dependent upon the agreement between the school or district and partnering postsecondary institution. Parents and students bear the financial burden of dual-enrollment courses in nine US states (Zinth, 2016d). Marken et al. (2013) reported that students and parents incurred out of pocket costs for dual enrollment at 45% of U.S. colleges and universities. Over half of colleges also reported that families were responsible for fees and textbooks associated with dual-enrollment coursework. Students who live in areas without financial assistance may have difficulty participating in dual-enrollment programs.

Comparison of AP and Dual Enrollment

Program Endorsement and Accountability

Early postsecondary opportunities offer several benefits to students. Many high schools offer both AP and dual enrollment options for students. Schools and districts are held accountable for their early postsecondary opportunity enrollment rates under the Every Student Succeeds Act [ESSA] (DOE, 2017). Districts and states are required to publish EPSO enrollment rates on the state report card (DOE, 2017).

In an effort to increase access to more rigorous coursework and standards, the United States Department of Education [DOE] (2002) explicitly endorsed the use of AP programs and exam administration in the No Child Left Behind Legislation of 2001 (Sec. 1702). The legislation encouraged increased enrollment in advanced placement programs and course offerings for low-income and disadvantaged students. Schools and districts were encouraged to pay the partial or complete Advanced Placement exam fee for low-income students in an attempt to encourage the possibility of postsecondary credit accrual (DOE, 2002, Sec. 1702).

The Every Student Succeeds Act (ESSA) which amended the Elementary Education and Secondary Education Act of 1965 (DOE, 2017) uses more inclusive language in reference to early postsecondary opportunities. Early postsecondary opportunities are referred to as accelerated learning programs including AP, dual enrollment, and concurrent enrollment. States are charged with increasing not only the enrollment in but the successful completion of early postsecondary opportunities. Funding for AP exams also changed due to ESSA (College Board, 2017). While states can still use Title IV, Block A (DOE, 2017) funds to assist with AP exam fees, funds may also be used to advance opportunities for low-income students in other areas of early postsecondary learning such as dual enrollment. The shift in funding may allow more students to participate in a variety of early postsecondary opportunities.

In a study analyzing data from students in the 2000-2002 public high school graduation cohorts in Florida Speroni (2011) found that program participation in both AP and dual-enrollment programs was dependent on the school district. Districts predominantly endorsed either AP or dual-enrollment courses. Even when students had the option of enrolling in both programs in their high school, students tended to take the course preferred by the district. While the reason for this disparity is unknown, it appears that districts may limit the choices of students by endorsing one program over another.

Different states or districts may also showcase their endorsement of one program over another through the assignment of weights to grades. In Florida, AP courses are assigned more weight than dual-enrollment courses (Speroni, 2011). In Tennessee, five percentage points are added to semester grades for AP courses while four percentage points are added to semester grades for dual-enrollment courses (Tennessee State Board of Education, 2017).

One explanation for the promotion of AP programs may be that dual-enrollment programs lack standardization, because they vary by institution. Sadler (2010) reported that dual-enrollment course quality is questioned because course grades provide the only indicator of academic success. Postsecondary personnel may prefer AP program participation due to the standardized curriculum (An, 2013). However, dual enrollment may provide students with a more realistic postsecondary experience with increased opportunity to earn college credit.

Educational Outcomes for Program Participants

In a study of dual enrollment students in Texas, Klopfenstein (2012) reported that dual enrollment students tended to have lower high school grade point averages and SAT scores than their AP counterparts. Speroni (2011) found that AP students had slightly higher college grade point averages. Students who participated in both AP and dual-enrollment programs tended to have higher grade-point averages than those who participated in only one accelerated learning option.

Participation in early postsecondary opportunities may impact college enrollment. In an examination of Florida graduates, Speroni (2011) found that dual enrollment students were more likely to enroll in college than AP students, but they were less likely to enroll in four-year universities. Even though enrollment rates for AP and enrollment participants varied, four-year degree attainment rates were not significantly different (Speroni, 2011). An (2013) compared college completion rates of dual-enrollment participants with those who participated in AP courses. There was not a significant difference between the effect of AP and dual enrollment on the attainment of a college degree.

Wyatt et al. (2015) found that college enrollment and persistence may be impacted by a student's score on the AP exam or the sponsoring dual enrollment institution. AP students who

scored at least a 3 on one AP exam outperformed students who participated in dual enrollment at two or four-year institutions. Students who scored less than a 3 on at least one AP exam performed as well as or better than students who participated in dual enrollment at a community college. Students who participated in a dual-enrollment course at a four-year institution had higher rates of enrollment at four-year colleges and universities, graduation, and college grades than students who scored lower than 3 on the AP exams. Students who experienced success on the AP exam had high college enrollment, grades, persistence, and graduation. These results indicate that students who score a 3 or higher on at least one AP exam have higher rates of college success.

Both AP and dual-enrollment courses positively impact educational outcomes for learners of all ability levels (Speroni, 2011). Duffy (2010) did not find a significant difference between college persistence rates and grade-point averages of AP and dual enrollment students. However, both groups outperformed their peers who did not participate in an advanced learning opportunity. In a 2015 study, Wachowiak found that undergraduate students who participated in either AP or dual-enrollment courses indicated that the following early postsecondary program components prepared them for college coursework: "intensive writing, independent learning, reliance on tests over homework, complex reading assignments, and student self-reliance for actual learning" (p. 90). Study participants did not identify one program as more beneficial than the other. Instead, participants indicated that the programs were equal in the extent of college preparedness.

Cooney et al. (2013) surveyed AP students about their experiences. Of the survey respondents, 43% of students reported also taking dual-enrollment classes during their high school tenure. Almost half of student respondents reported that their AP courses were higher

quality than their dual-enrollment courses, while one-third of participants indicated the quality of AP and dual- enrollment courses were the same.

Klopfenstein and Lively (2012) compared AP and dual-enrollment programs and suggested that the programs are best used in conjunction with one another. Many times students and school officials see the programs as competitors as if one will serve students better than the other. Enrollment in either program should be considered based on the needs of the individual student.

College Readiness

There is an emergent need for a more skilled, educated workforce. By 2020, 65% of jobs will require a college education or postsecondary training (Carnevale, Smith, & Strohl, 2013). This figure has increased by six percentage points from 2010 and 23 points from 1973. In addition, the percentage of students who graduate from a postsecondary program has declined over the last few years. In 2010, the United States ranked second in the number of students earning a postsecondary credential (Wyatt, Wiley, Camara, & Proestler, 2011). In 2016, the United States ranked tenth among the 36 countries surveyed (Organisation for Economic Cooperation and Development [OECD], 2016). In Tennessee, only 23% of students in the 2008 high school cohort earned a postsecondary credential (TDOE, 2017c). Based on this evidence, preparing students for college-level coursework will also result in a more skilled, educated workforce.

Communities and individuals benefit when students are prepared for college (Moore et al., 2010). Students who do not complete college may have lower incomes and are less able to contribute to the local economy. In Tennessee, students who graduated from high school but did not enroll in a postsecondary training program only earned $10,880 in the year following

graduation (TDOE, 2017c). Over the course of their lifetime, students who graduate with at least a baccalaureate degree will earn $800,000 more than those who do not (TDOE, 2017c). For this reason, national and state initiatives have been employed to increase the rigor of high school coursework and encourage postsecondary enrollment and completion (Adelman, 2006; An, 2013; Conley, 2014; TDOE, 2017c; U.S. Department of Education, 2010).

College Readiness Defined

Defining elements of college readiness is imperative for understanding its impact on academic success. College readiness has long been defined by student grades and performance on standardized college entrance exams (Camara, O'Connor, Mattern & Hanson, 2015; Conley, 2007; Conley, 2014; Proctor, Prevatt, Adams, Reaser, & Petscher, 2006). The National Forum on Education Statistics (2015) defined the college ready student as one who has acquired the knowledge, skills, and disposition to succeed in non-remedial college coursework. Conley (2007) operationally defined college readiness in terms of the preparation necessary for students to succeed in credit-bearing, non-remedial coursework at a college or university. Conley (2007) asserted that college-ready students must have skills, knowledge, and understanding to be successful.

Carnevale et al. (2013) reported college ready competencies in terms of students' knowledge, skills, and abilities. The knowledge domain serves as the foundation for students to grow their skills and abilities. The skills domain encompasses processing of content, problem solving, and learning strategies. Abilities consist of personal attributes aiding in student career success (Conley et al., 2013). A growing body of research echoes this comprehensive approach to college readiness and acknowledges that students must have academic skills coupled with

non-cognitive, psychosocial factors to be prepared for college coursework (Camara et al., 2015; Carnevale, 2013; Conley, 2007; Conley, 2014; Lombardi, Seburn, & Conley, 2011).

Academic Skills and Content Knowledge

Researching college readiness or lack thereof is not a new phenomenon. Byrd and MacDonald (2005) attributed college underpreparedness to the lack readiness in terms of academics, financial prowess, and social skills. To address this issue, College and Career Readiness Standards were created to assist graduating seniors in preparing for college and the workforce (Camara et al., 2015; Conley, 2014; Lombardi et al., 2011). Lombardi et al. (2011) proposed that cognitive strategies, content knowledge, contextual skills and awareness, and academic behaviors are fundamental components of college readiness. Cognitive strategies are comprised of behaviors that are used across disciplines to help students "learn, understand, retain, use, and apply content" (Lombardi et al., 2011, p. 2). Content knowledge includes skills in reading and writing which are essential to understanding the curriculum.

In addition to academic skills, students' secondary academic programs must prepare them for the increased expectations of instructors in postsecondary institutions. In a longitudinal study, Adelman (2006) analyzed high school transcripts of United States' students enrolled in 8th grade in 1992 and followed them through the year 2000. The researcher determined that the intensity and quality of a student's high school curriculum was the strongest predictor of four-year college completion. The benefits of rigorous secondary curricula were also highlighted in a 2016 study conducted by the Tennessee Department of Education. Students in focus groups who reported feeling unprepared for college attributed a portion of their wariness to the lack of rigorous course content and offerings (TDOE, 2017).

When measuring the rigor of high school coursework, one must consider a student's level of success in the core content areas. Students must reach certain levels of academic proficiency to access college-level work. Camara et al. (2015) stated that proficiency in the academic areas of English language arts, mathematics, and science assists students in developing skills necessary for college and career success. A wealth of evidence indicating that students must have the appropriate literacy skills to experience college success was also included in ACT's (Camara et al., 2015) holistic research report.

Academic proficiency is especially important in reading and writing. Conley (2007) reported that writing and research are the two academic skills necessary for success in college. Of the two skills, "writing may be by far the single academic skill most closely associated with college success"(Conley, 2007, p. 5). Fike and Fike (2008) indicated that reading was an important college readiness skill, in that students who lack college-level reading strategies and comprehension skills cannot access textbooks used in postsecondary classrooms.

Byrd and MacDonald (2005) performed a qualitative study with nontraditional students about their perspectives on college readiness. In terms of necessary academic skills, participants reported that reading skills were vital to their postsecondary success. However, more students reported feeling underprepared for the academic demands of college in this domain. This lack of preparedness was echoed in a 2017 report on college readiness where ACT (2017) reported that 60% of high school graduates in Tennessee were below proficient in their understanding of complex texts. Byrd and MacDonald (2005) also discussed writing skills, but participants expressed confidence with this skill. Participants attributed their heightened confidence levels to their exposure to challenging secondary coursework.

The importance of rigorous high school coursework was also evident in a study conducted by Wachowiak (2015). Undergraduate students were surveyed about their secondary school experiences. Students who participated in either AP or dual-enrollment courses indicated that the following early postsecondary program components prepared them for college coursework: "intensive writing, independent learning, reliance on tests over homework, complex reading assignments, and student self-reliance for actual learning" (p. 90).

Cognitive Strategies

A large portion of the academic behaviors which lead to college success fall into the category of cognitive strategies or study skills. Conley (2007) reported that key cognitive strategies were just as important as specific content knowledge in relation to college success. Crede and Kuncel (2008) conveyed that study skills include a student's knowledge and use of appropriate study strategies and methods. The researchers ascertained that study habits, skill, and attitude measures impact students' academic performance more than any other non-cognitive measure. After test scores and high school grades, the researchers regarded study skills as the third pillar of academic success. The results acquired from testing study skill and attitude constructs were similar to those from standardized tests and grades in relation to academic performance.

Proctor et al. (2006) stated that students with effective study skills have the ability to acquire, record, organize, synthesize, remember, and use information. To examine the impact of study skills on academic performance, Proctor et al. administered a study strategies inventory to three groups of students: undergraduate students who struggled academically due to a diagnosed learning disability, those who had poor academic performance, and their higher achieving peers.

The researchers found that students who struggled academically had identified weaknesses in areas such as attention, concentration, test-taking strategies, and selecting main ideas.

Camara et al. (2015) also emphasized the importance of cognitive strategies in the cross-cutting capabilities domain of ACT's College Readiness Framework. The researchers stressed the importance of separating cognitive strategies from academic skills when examining college readiness. Cross-cutting capabilities, or cognitive strategies, include critical thinking skills, cooperative learning, and study strategies. The researchers stated that collaborative skills are especially important as they increase comprehension and other critical thinking skills.

Robbins et al. (2004) ascertained that study skills not only include the organizational skills to complete schoolwork but also the skills needed to prepare for tests. Study skills areas include "time-management, preparing for and taking examinations, using information resources, taking class notes, and communicating with teachers and advisors" (p. 264). The researchers suggested that study skills in secondary coursework may be indicative of a student's performance in a postsecondary classroom. Robbins et al. also recommended combining effective study strategies with other social factors to increase positive academic performance in postsecondary classrooms.

Non-cognitive College Readiness Factors

A growing body of research has emerged about the influence of non-cognitive factors on academic performance (e.g. Camara et al., 2015; Komarraju, Ramsey, & Rinella, 2012; Kyollonen, Lipnevich, Burrus, & Roberts, 2014; O' Conner & Paunonen, 2007) and persistence (e.g. Camara et al., 2015; Komarraju et al., 2012; Robbins, Lauver, Davis, Langley, & Carlstrom, 2004). O'Connor and Paunonen (2007) found that facets of personality can impact academic performance more than cognitive ability. In university age students, O'Connor and Paunonen

reported that the relationship between academic success and cognitive ability is weaker than expected.

Academic discipline and effort. College professors have elevated expectations for the independent work of students and their engagement (Conley, 2007). Students must be motivated to persist through challenging tasks and to take charge of their learning. For many students, this transition is difficult. Involvement in secondary courses with increased expectations may help to ease the burden during this demanding time.

Byrd and MacDonald (2005) reported that self-regulating behaviors aid in the college transition process due to the increased level of individual responsibility assigned to college students. Camara et al. (2015) included self-regulation, motivation, and engagement in the behavioral skills domain of ACT's College Readiness Framework. The researchers also acknowledged the predictive nature of these elements in regard to academic achievement.

Komarraju et al. (2012) found that academic discipline or effort significantly predicted college GPA over students' ACT scores and high school grades. The researchers reported that academic discipline may be heavily influenced by prior educational experiences. Positive, challenging experiences in high school may encourage students to develop self-efficacy skills which enable them to persist when presented with challenging college coursework (Ozmun, 2013).

Conscientiousness. Kyollonen et al. (2014) examined the relationship between the non-cognitve constructions of personality and motivation and college readiness. The researchers discussed conscientiousness as an especially important predictor of academic performance. Kyollonen et al. stated that the impact of conscientiousness on academic performance begins in elementary school and continues throughout a student's educational career. Self-discipline and

persistence are elements of conscientiousness necessary for academic success. Research conducted by Kommarraju et al. (2012) and O'Conner and Paulonen (2007) corroborated the use of conscientiousness as an academic performance indicator. Komarraju et al. (2012) found that conscientiousness has proven to be a "robust predictor of academic performance" (p. 104). The ACT College Readiness Framework (Camara et al., 2015) also acknowledged the importance of conscientiousness in the "Sustained Effort" (p. 31) subcategory of behavioral college readiness skills. Camara et al. described conscientiousness as a consistent predictor of college and career success.

Self-Awareness skills. Academically successful college students must have the motivation to persist when given challenging material, have good self- regulation skills to stay on task, and take ownership for their learning. Academic behaviors such as self-monitoring, time-management, note-taking, study skills, self- advocacy, collaboration and goal setting are an essential component of college readiness. Lombardi et al. (2011) stated that these academic behaviors are the least commonly assessed area of the four fundamental components of college readiness.

In a study conducted by Byrd and MacDonald (2005) several themes emerged from student responses including academic skills, time-management, goal-focus, and self-advocacy. All study participants noted time-management as important for academic success in college. In relation to time-management, participants indicated that more time was needed for balancing the demands of work, family, and school. Self- advocacy skills were also highlighted in participant responses especially in regards to navigating the college campus and procedures. Participant responses indicated that time-management, self-advocacy, and focus on goals were more important than academic skills for college readiness.

In another study, Kim and Ra (2015) interviewed undergraduate students about factors leading to their college success. The researchers only included high performing students in the study. The top three skills reported by students as leading to their academic success in college were: 1) self-regulation and time-management 2) note-taking and 3) goal orientations.

Kyollonen et al. (2014) also acknowledged the importance of time-management, test anxiety, communication, and teamwork skills. The authors reported that time-management has been found to significantly predict grades and levels of engagement in students at two- and four-year colleges. Participants in a study conducted by Komarraju et al. (2012) also highlighted the importance of time-management skills in relation to college success. Study habits, attendance, and participation in group discussions were also noted as factors impacting academic performance.

CHAPTER 3

METHODOLOGY

The purpose of this study was to determine if undergraduate student perceptions of college readiness were impacted by participation in Advanced Placement courses, dual-enrollment courses, or both. A non-experimental, quantitative study was performed to examine student perceptions of program participation. In order to gather perceptual data about the implications of participation in AP or dual-enrollment coursework, surveying undergraduate students was necessary. Survey research is often used to gather opinions or beliefs (McMillan & Schumacher, 2014). A survey research design was employed using a questionnaire with five-point Likert items.

Research Questions and the Corresponding Null Hypotheses

The following research questions were addressed through testing the corresponding null hypotheses:

RQ1: Do undergraduate students perceive academic rigor in AP courses as beneficial for success in college to a significant extent?

H_o1: Undergraduate students do not perceive academic rigor in AP courses as beneficial for success in college to a significant extent.

RQ2: Do undergraduate students perceive instructor quality in AP courses as beneficial for success in college to a significant extent?

H_o2: Undergraduate students do not perceive instructor quality in AP courses as beneficial for success in college to a significant extent.

RQ3: Do undergraduate students perceive that participation in AP courses prepared them academically for college coursework to a significant extent?

H_o3_1: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of writing to a significant extent.

H_o3_2: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of time management to a significant extent.

H_o3_3: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of note-taking to a significant extent.

H_o3_4: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of study skills to a significant extent.

H_o3_5: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of independent learning to a significant extent.

H_o3_6: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of reading complex text to a significant extent.

RQ4: Do undergraduate students perceive academic rigor in dual-enrollment courses as beneficial for success in college to a significant extent?

H_o4: Undergraduate students do not perceive academic rigor in dual-enrollment courses as beneficial for success in college to a significant extent.

RQ5: Do undergraduate students perceive instructor quality in dual-enrollment courses as beneficial for success in college to a significant extent?

H_o5: Undergraduate students do not perceive instructor quality in dual-enrollment courses as beneficial for success in college to a significant extent.

RQ6: Do undergraduate students perceive that participation in dual-enrollment courses prepared them academically for college coursework to a significant extent?

H_o6_1: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of writing to a significant extent.

H_o6_2: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of time management to a significant extent.

H_o6_3: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of note-taking to a significant extent.

H_o6_4: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of study skills to a significant extent.

H_o6_5: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of independent learning to a significant extent.

H_o6_6: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of reading complex text to a significant extent.

RQ7: Is there a significant difference in student perceptions of preparedness in writing, time management, note-taking, study skills, independent learning, and reading complex text between students who took AP courses and students who participated in dual enrollment?

H_o7_1: There are no significant differences in student perceptions of preparedness in writing between students who took AP courses and students who participated in dual enrollment.

H_o7_2: There are no significant differences in student perceptions of preparedness in time management between students who took AP courses and students who participated in dual enrollment.

H_o7_3: There are no significant differences in student perceptions of preparedness note-taking between students who took AP courses and students who participated in dual enrollment.

H_o7_4: There are no significant differences in student perceptions of preparedness in study skills between students who took AP courses and students who participated in dual enrollment.

H_o7_5: There are no significant differences in student perceptions of preparedness in independent learning between students who took AP courses and students who participated in dual enrollment.

H_o7_6: There are no significant differences in student perceptions of preparedness in reading complex text between students who took AP courses and students who participated in dual enrollment.

RQ8: How, and to what extent, do undergraduate students perceive one early postsecondary opportunity as more beneficial than the other?

Sample

The population for this study included freshmen and sophomores enrolled at East Tennessee State University in the summer of 2018. The survey sample was derived from students who agreed to participate in the survey and who self-identified as having participated in Advanced Placement, dual enrollment, or both. The major characteristics of the survey sample were:

1. Students were 18 years of age or older;

2. Undergraduate students who held freshman or sophomore class standing;
3. Students who were previously enrolled in Advanced Placement courses, dual-enrollment courses, or both.

Instrumentation

The survey was developed by the researcher. A review of literature provided a basis for item selection. Information about respondents' classification, major, and grade point average was collected using items 1 through 3 on the survey. Survey items pertaining to AP and dual-enrollment program components were selected by researching elements of college readiness and developing items which evaluate course quality, instructor quality, and college readiness skills.

Rather than conducting a pilot test, a group of past AP and dual enrollment participants reviewed the survey for readability, spelling, and grammar. A group of experienced researchers and content experts reviewed the instrument to provide a critical evaluation of survey items and construction.

In order to assess the research questions, the investigator performed research to develop items pertaining to course rigor, instructor quality, and college readiness skills. Lake (2001) stated that active learning best prepares students for success in college classrooms. Classroom discussions are often used as active learning techniques to assist students in developing critical thinking skills. Lecture is also a technique also used in postsecondary classrooms. Lake (2001) examined student perceptions of instructor effectiveness and found that students in lecture-based courses reported higher levels of instructor effectiveness. When examining instructor quality, it is important to include both elements. Gall, Knight, Carlson, and Sullivan (2003) determined that instructor accessibility also contributes to student learning and affects student perceptions of effectiveness. In this study, instructor quality was examined by assessing student perceptions of

instructor accessibility, classroom discussions, and course lectures. Student responses about tests and quizzes, assignments, and overall course rigor were used to assess academic rigor.

The factors of college readiness examined in this study were chosen in response to the growing body of research which acknowledges that students must have academic skills coupled with non-cognitive skills to be prepared for college coursework (Camara et al., 2015; Carnevale, 2013; Conley, 2007; Conley, 2014; Lombardi et al., 2011). Non-cognitive factors of college readiness were assessed by examining perceptions of time-management, independent work, and note-taking. Study skills, which are cognitive strategies, were also examined. The academic content-knowledge domain of college readiness was assessed by examining the areas of reading complex text and writing in Advanced Placement and dual-enrollment programs.

Information about study participants' class standing, grade point average, and major was collected using survey items 2-4. Survey items 7 and 8 addressed program components of AP programs, while items 11 and 12 examined dual-enrollment components. Responses were assessed using a five-point Likert scale in which participants identified components as "Not Helpful" to "Extremely Helpful." Two open-ended items were included on the questionnaire to allow participants to elaborate on program experiences and implications for college readiness.

Data Collection

After receiving approval from the researcher's dissertation committee and the East Tennessee State University Institutional Research Board (IRB), the researcher administered the survey to participants by electronic means using the university's listserv. An email was sent to ETSU students requesting their participation in the survey. A link directed students to the SurveyMonkey platform and the survey itself. Students were informed of the nature of the research before the survey was administered, and they were not offered compensation for their

participation. A two-week window was allowed for student responses. The data collected from survey participants was maintained on a password-protected computer to protect the confidentiality of participants. In order to provide anonymity to participants, names and email addresses were not collected.

Data Analysis

The independent variable was program participation in either Advanced Placement, dual enrollment, or both AP and dual enrollment. The dependent variables were course rigor, instructor quality, writing, time-management, note-taking, study skills, independent learning, and reading complex text. A series of single sample *t* tests was used to analyze the data gathered from the survey which address Research Questions 1 through 6. Independent *t* tests were performed to address Research Question 7 which examined differences in student perceptions of preparedness in students who participated in both AP and dual-enrollment programs. All data were examined at the .05 significance level. Open-ended, qualitative items were coded and organized into themes; means and frequencies were calculated and reported.

Chapter Summary

The quantitative approach used in this study allowed for the examination and comparison of AP and dual enrollment student perceptions of program components and the implicit skills gained through participation. Surveying matriculated students instead of those in high school allowed for the examination of the skills students have deemed useful for college success instead of the skills students believe will aid in future success. The data collected was used to determine if undergraduate students perceived that previous participation in either AP or dual-enrollment courses prepared them for college to a significant extent. Course elements of academic rigor and instructor quality were examined specifically. Student perceptions of college readiness in the

areas of writing, time management, note-taking, study skills, independent learning, and reading complex texts were also examined.

CHAPTER 4

FINDINGS

The purpose of this study was to determine if undergraduate student perceptions of college readiness were impacted by participation in Advanced Placement courses, dual-enrollment courses, or both. The researcher gathered data about the individual program components of AP and dual-enrollment programs and the perceived implications of each in relation to college readiness. Participants in this study included freshmen and sophomores at East Tennessee State University.

Data were retrieved from the distribution of a survey using an online platform. Out of 332 participants, 94 students were freshmen and 174 were sophomores. Sixty-four students did not respond to the question about class standing. Figure 1 contains information about the college majors of participants. Most respondents reported having a GPA within the 3.7- 4.0 range (Figure 2). Tables 1 and 2 also contain information about the number of AP and dual enrollment courses in which respondents participated.

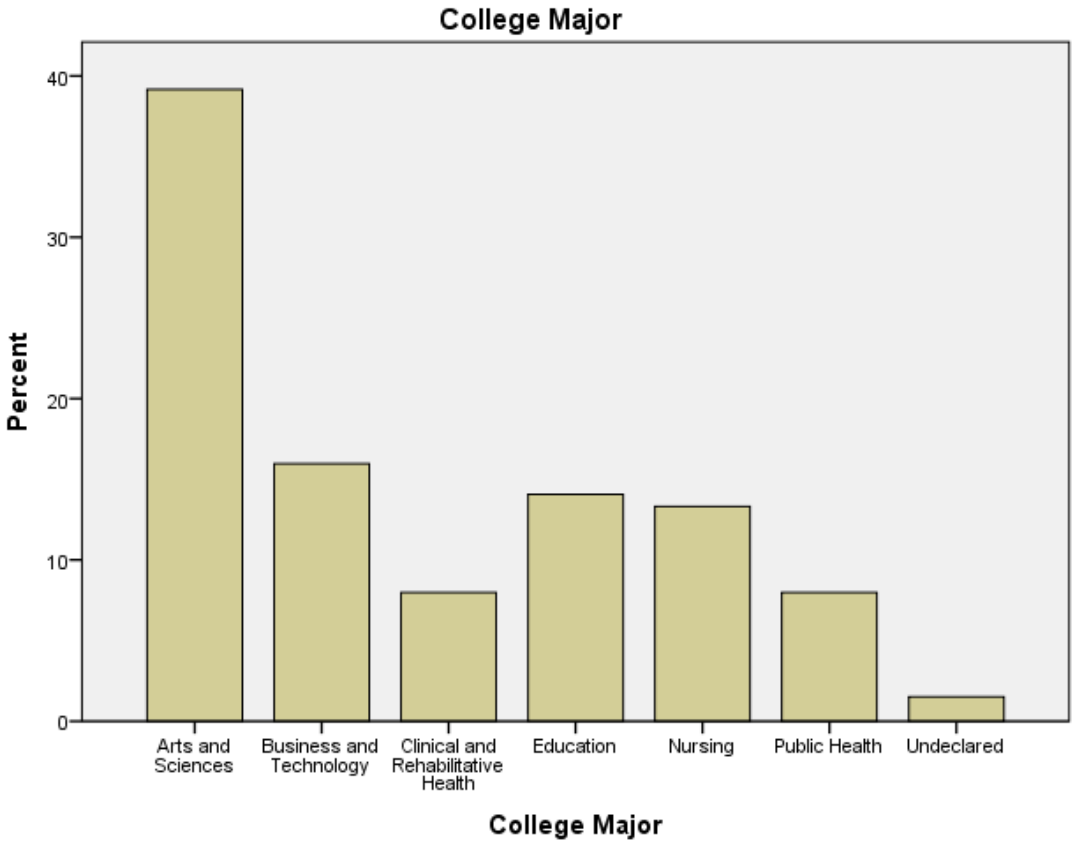

Figure 1. Percentage of participants by college major

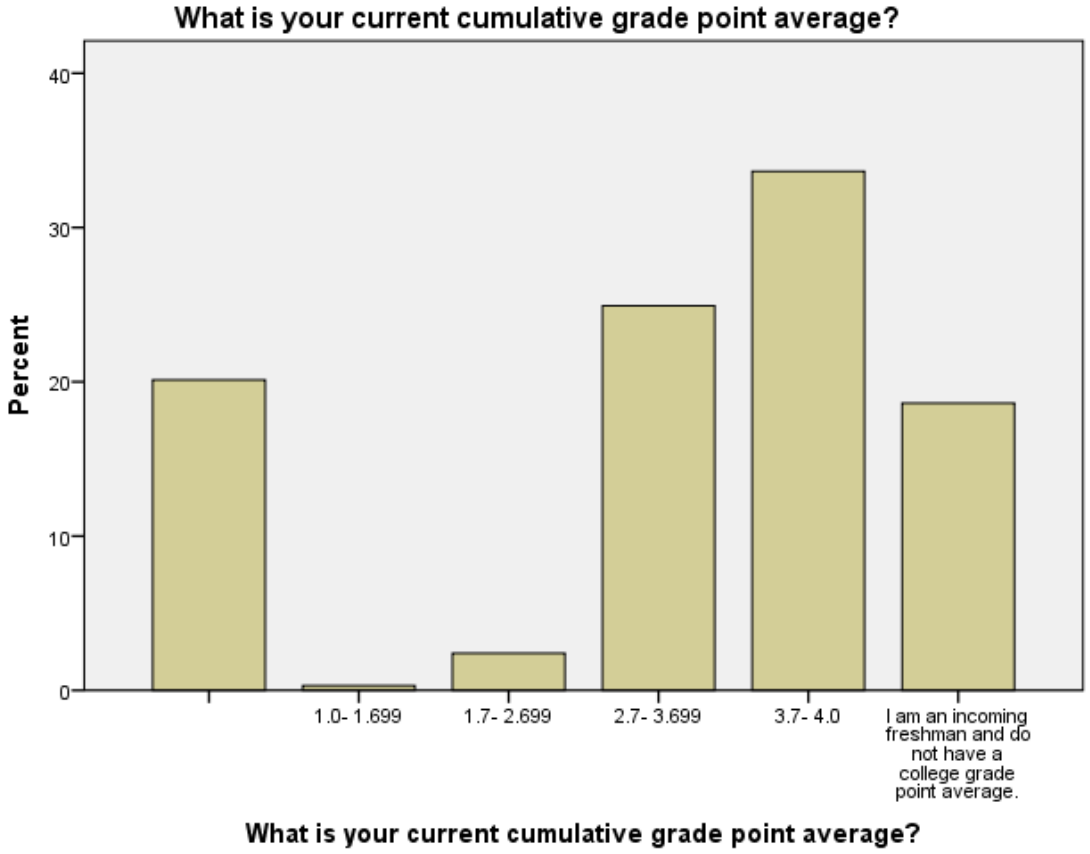

Figure 2. Percentage of survey respondents by grade point average

Table 1

AP Courses Taken by Participants

Number of AP Courses	Number of Participants	%
1	41	25.35
2-3	64	35.36
4-5	43	23.76
5 or more	33	18.23
Total	181	100

Table 2

Dual-Enrollment Courses Taken by Participants

Number of DE Courses	Number of Participants	%
1	25	14.79
2-3	62	36.69
4-5	45	26.63
5 or more	37	21.89
Total	169	100

Eight research questions were developed to guide this study. One-sample and independent-samples *t*-tests were used for the research questions and corresponding null hypotheses. The data and analyses are shown here.

Research Question 1

RQ1: Do undergraduate students perceive academic rigor in AP courses as beneficial for success in college to a significant extent?

H_o1: Undergraduate students do not perceive academic rigor in AP courses as beneficial for success in college to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean academic rigor score obtained from undergraduate students who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. An overall measure for academic rigor was computed by averaging the respondents' scores on items related to assignments, tests, and overall course rigor. The sample mean of 3.87 (SD = 1.09) was significantly higher than 3, $t(175) = 8.087$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .50 to .83. The effect size d of .61 indicated a

medium effect. The results suggested that undergraduate students who participated in Advanced Placement courses in high school perceived the academic rigor of AP classes as beneficial to their success in college. Figure 3 shows the distribution of the average score of participant responses related to academic rigor in Advanced Placement courses.

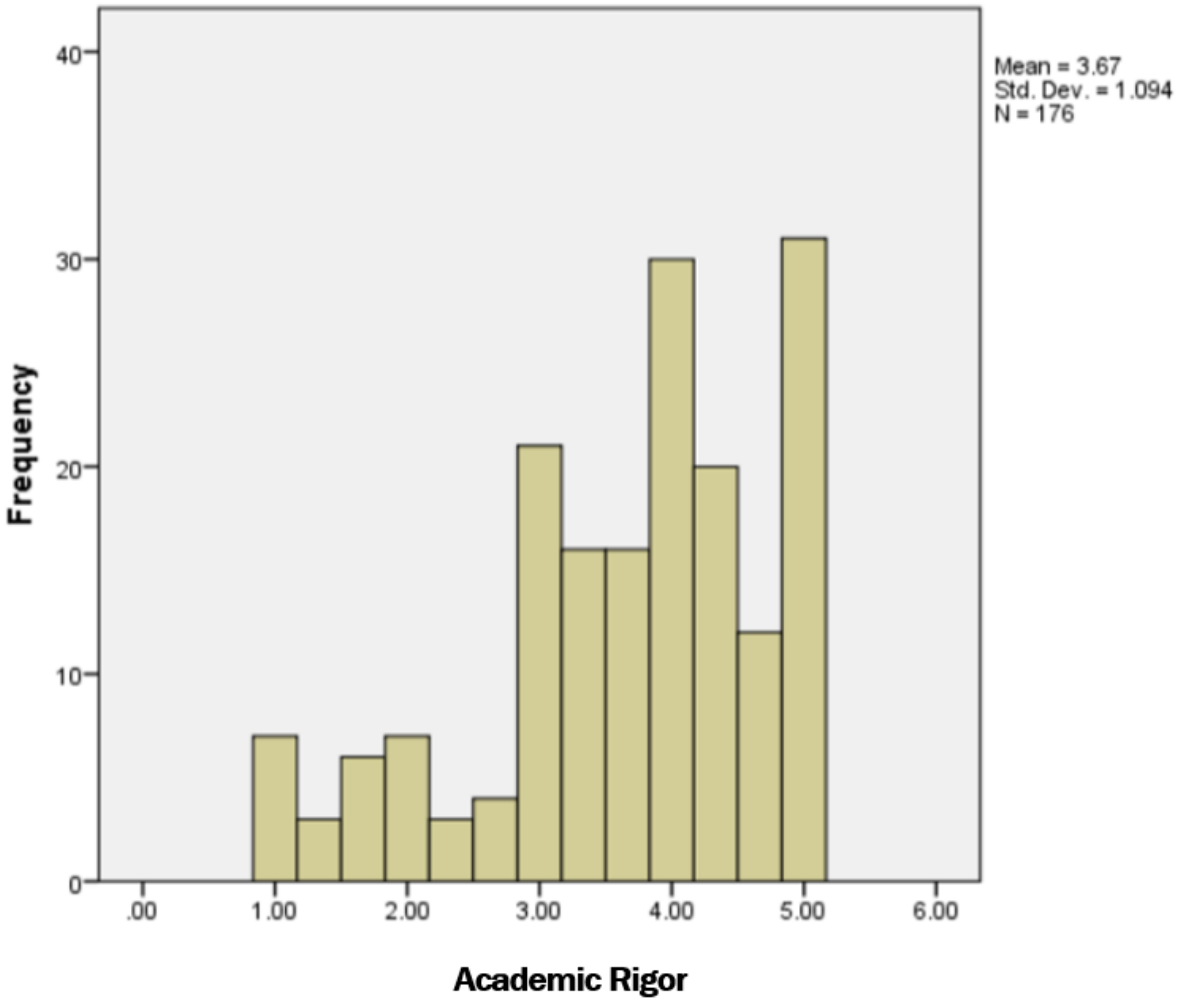

Figure 3. Undergraduate student perceptions of academic rigor in Advanced Placement courses

Research Question 2

RQ2: Do undergraduate students perceive instructor quality in AP courses as beneficial for success in college to a significant extent?

H_o2: Undergraduate students do not perceive instructor quality in AP courses as beneficial for success in college to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean perceived instructor quality score obtained from undergraduate students who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. An overall measure for AP instructor quality was computed by averaging the respondents' scores on items related to the accessibility of the instructor, classroom discussions, and lecture. The sample mean of 3.65 (SD=1.05) was significantly higher than 3, $t(175) = 46.29$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from 3.50 to 3.81. The effect size d of 3.48 indicated a large effect. The results suggested that undergraduate students who participated in Advanced Placement courses in high school perceived the AP instructor quality as beneficial to their success in college. Figure 4 shows the distribution of the average score of participant responses related to the quality of the instructor of Advanced Placement courses.

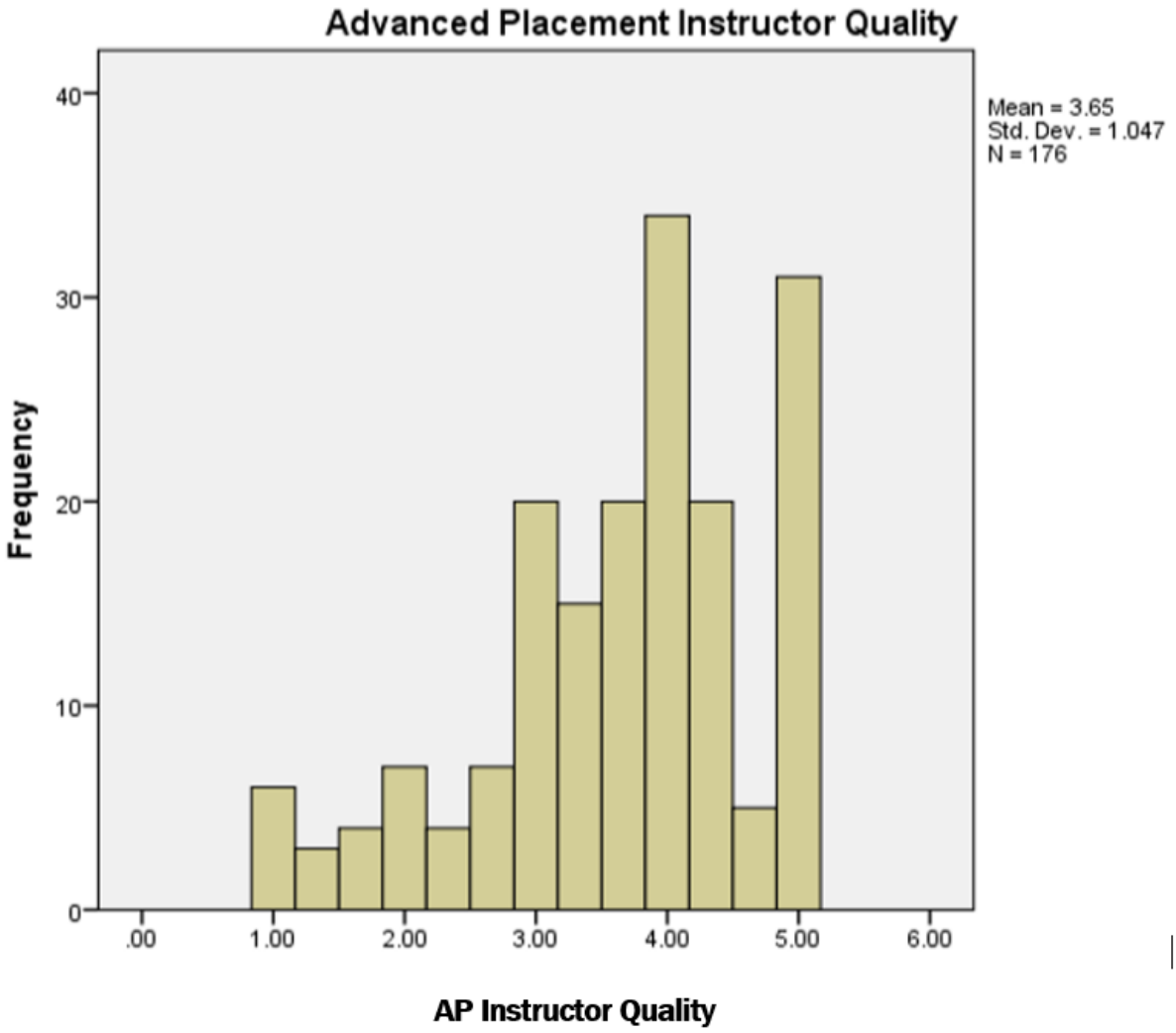

Figure 4. Undergraduate student perceptions of instructor quality in Advanced Placement courses

Research Question 3

RQ3: Do undergraduate students perceive that participation in AP courses prepared them academically for college coursework to a significant extent?

H_o3_1: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of writing to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean writing score of undergraduate students, who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. The sample mean of 3.84 (*SD*=1.17) was significantly higher than 3, $t(173) = 9.57$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .67 to 1.02. The effect size *d* of .73 indicated a medium to large effect. The results suggested that undergraduate students perceived the writing skills gained from AP course participation as beneficial to their academic success in college. Figure 5 shows the distribution of the average score of participant responses related to writing in Advanced Placement courses.

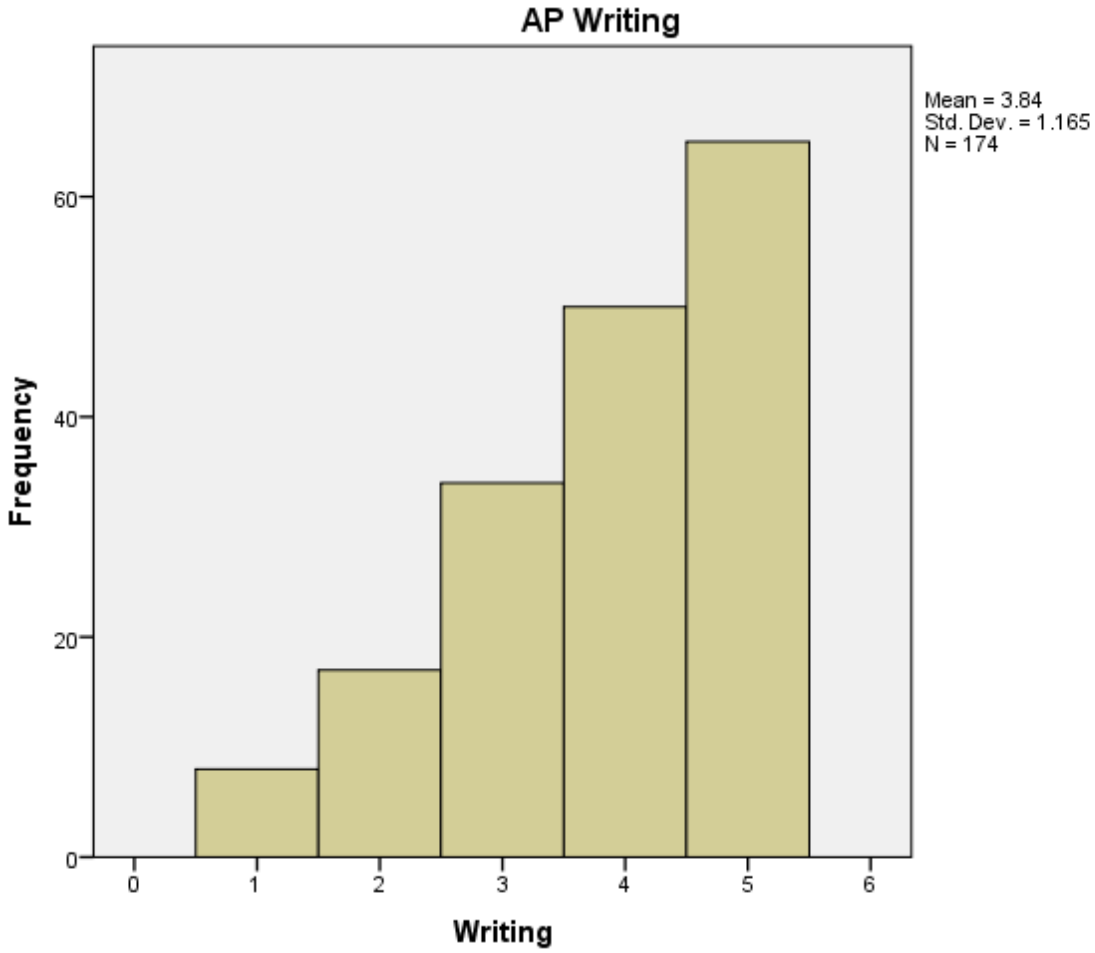

Figure 5. Undergraduate student perceptions of writing skills gained through Advanced Placement program participation

H_o3_2: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of time management to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean time-management score of undergraduate students who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. The sample mean of 3.77 (*SD*=1.22) was significantly higher than 3, $t(173) = 8.34$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .59 to .95. The effect size *d* of .63 indicated a medium effect. The results suggested that undergraduate students perceived

the time-management skills gained from AP course participation as beneficial to their academic success in college. Figure 6 shows the distribution of the average score of participant responses related to time-management in Advanced Placement courses.

Figure 6. Undergraduate student perceptions of time-management skills gained through Advanced Placement program participation

H_o3_3: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of note-taking to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean note-taking score of undergraduate students, who previously participated in Advanced Placement courses

significantly higher than the midpoint score of 3. The sample mean of 3.78 (*SD*=1.16) was significantly higher than 3, $t(173) = 8.91$ $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means was .61 to .95. The effect size *d* of .68 indicated a medium effect. The results suggested that undergraduate students perceived the note-taking skills gained from AP course participation as beneficial to their academic success in college. Figure 7 shows the distribution of the average score of participant responses related to note-taking skills gained through AP program participation.

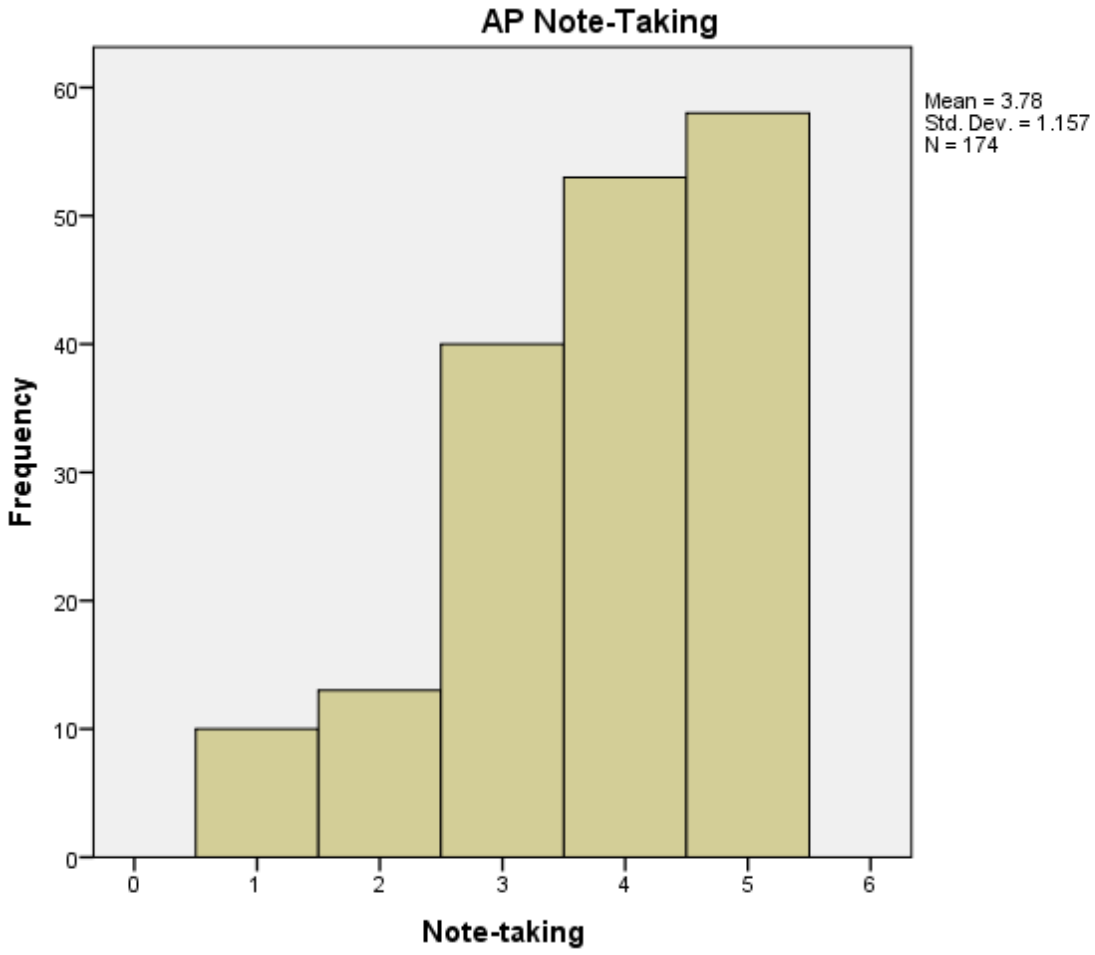

Figure 7. The undergraduate student perceptions of note-taking gained through Advanced Placement program participation

$H_0 3_4$: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of study skills to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean study skills score of undergraduate students who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. The sample mean of 3.62 (*SD*=1.25) was significantly higher than 3, $t(173) = 6.54$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .43 to .81. The effect size *d* of .50 indicated a medium effect. The results suggested that undergraduate students perceived the study skills gained from AP course participation as beneficial to their academic success in college. Figure 8 shows the distribution of the average score of participant responses related to study skills gained through AP program participation.

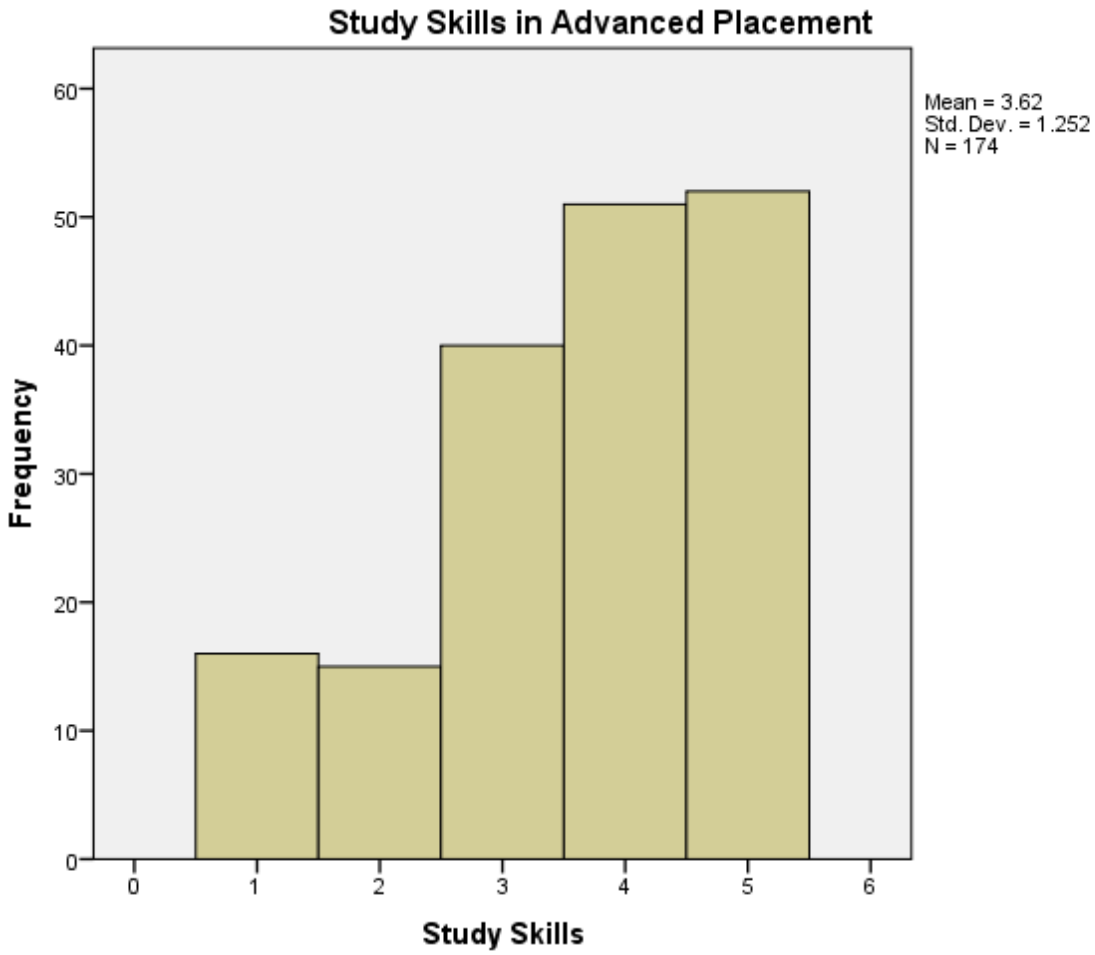

Figure 8. Undergraduate student perceptions of study skills gained through Advanced Placement program participation

H_o3_5: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of independent learning to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean independent learning skills score of undergraduate students who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. The sample mean of 3.76 (*SD*=1.16) was significantly higher than 3, $t(173) = 8.61$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .58 to .93. The effect size *d* of .65 indicated a medium effect. The results suggested that undergraduate students perceived

the independent learning skills gained from AP course participation as beneficial to their academic success in college. Figure 9 shows the distribution of the average score of participant responses related to the perceived benefits of working independently in AP courses.

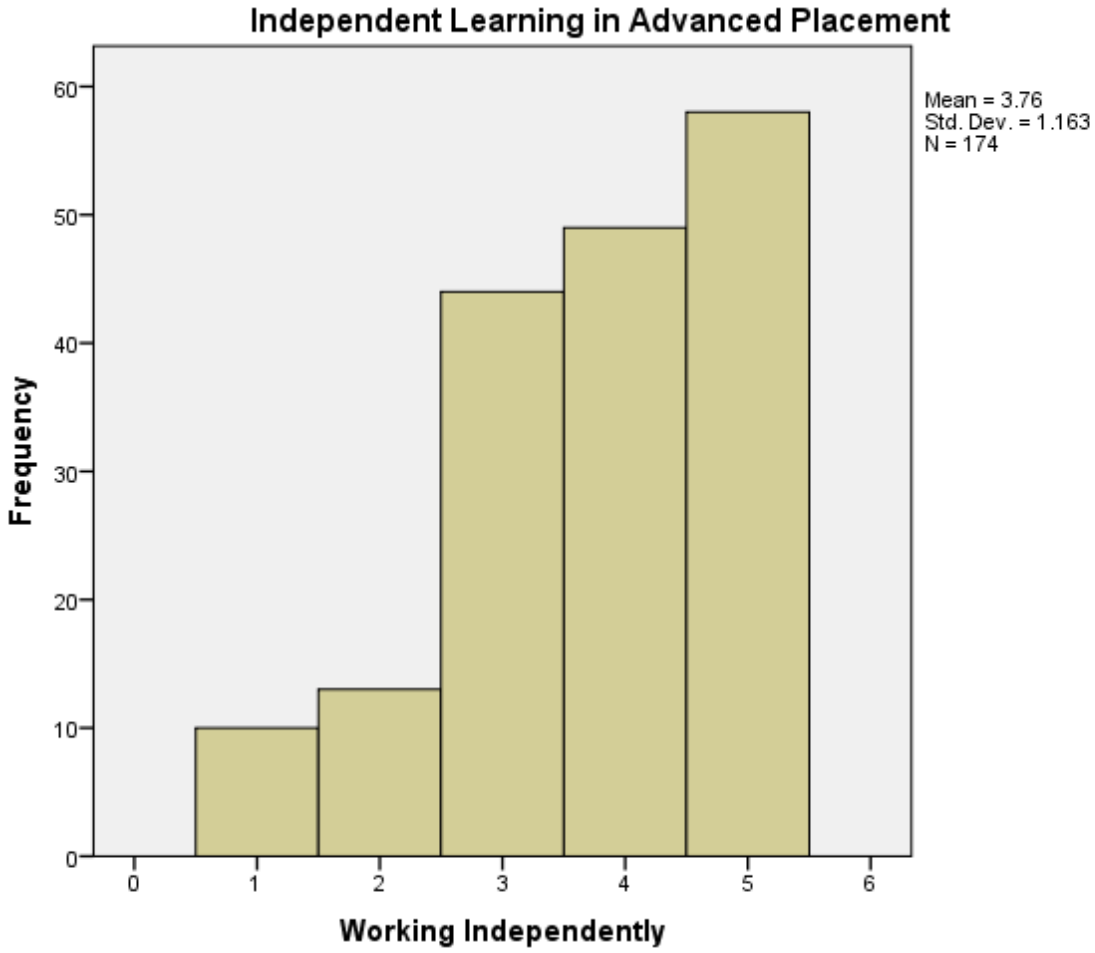

Figure 9. Undergraduate student perceptions of independent learning skills gained through Advanced Placement program participation

H_o3_6: Undergraduate students do not perceive that participation in AP courses prepared them academically in the area of reading complex text to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean reading complex text score of undergraduate students who previously participated in Advanced Placement courses was significantly higher than the midpoint score of 3. The sample mean of 3.88 (*SD*=1.14) was

significantly different from the test value 3, $t(173) = 10.14$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .71 to 1.05. The effect size *d* of .78 indicated a medium to large effect. The results suggested that undergraduate students perceived the exposure to complex text in AP courses as beneficial to their academic success in college. Figure 10 shows the distribution of the average score of participant responses related to reading complex text in AP coursework.

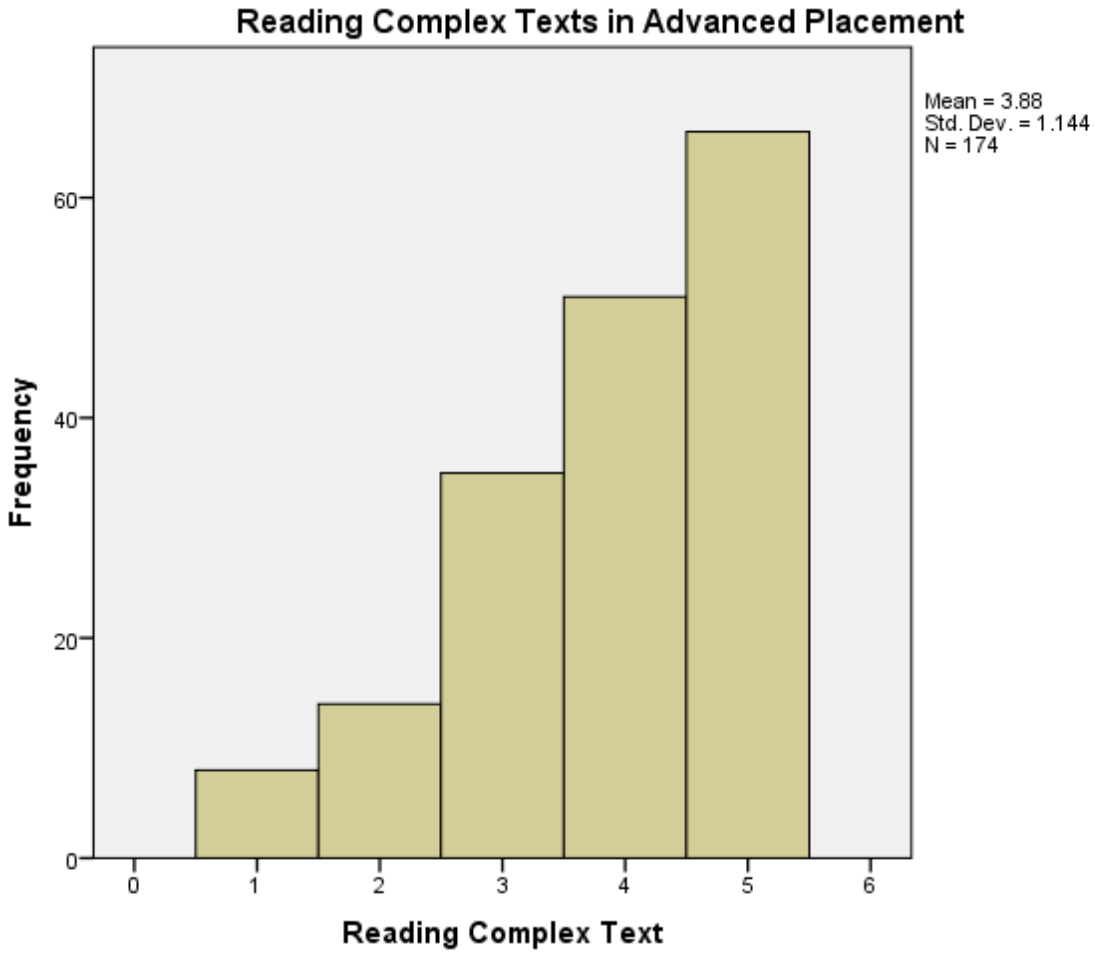

Figure 10. Undergraduate student perceptions of reading complex text in Advanced Placement coursework

Research Question 4

RQ4: Do undergraduate students perceive academic rigor in dual-enrollment courses as beneficial for success in college to a significant extent?

H_o4: Undergraduate students do not perceive academic rigor in dual-enrollment courses as beneficial for success in college to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean academic rigor score obtained from undergraduate students, who previously participated in dual-enrollment courses was significantly higher than the midpoint score of 3. An overall measure for academic rigor was computed by averaging the respondents' scores on items related to assignments, tests, and overall course rigor. The sample mean of 3.76 (*SD*=.996) was significantly higher than 3, $t(166) = 9.844$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .61 to .91. The effect size *d* of .78 indicated a medium to large effect. The results suggested that undergraduate students who participated in dual-enrollment courses during high school perceived the academic rigor of dual-enrollment classes as beneficial to their success in college. Figure 11 shows the distribution of the average score of participant responses related to academic rigor in dual-enrollment courses.

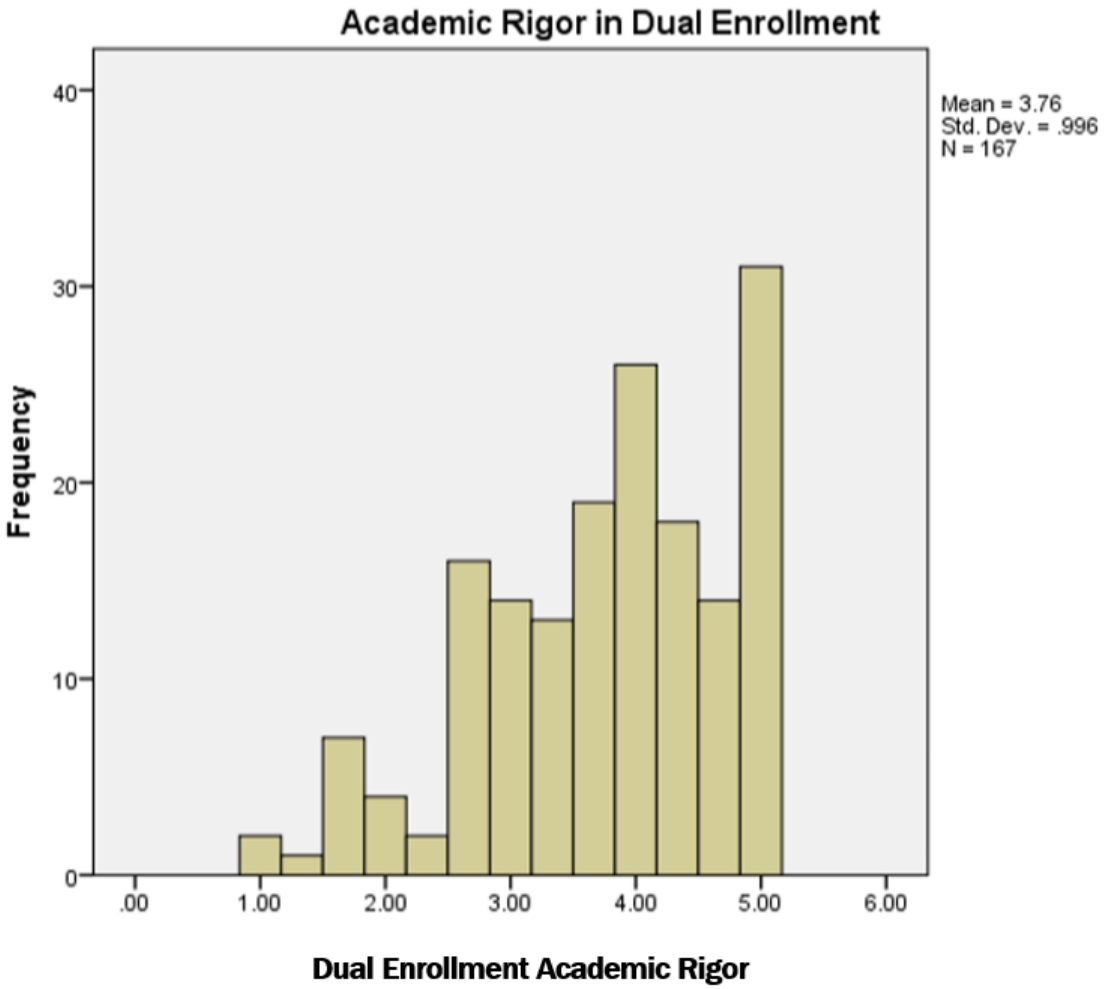

Figure 11. Undergraduate student perceptions of academic rigor in dual-enrollment courses

Research Question 5

RQ5: Do undergraduate students perceive instructor quality in dual-enrollment courses as beneficial for success in college to a significant extent?

H_o5: Undergraduate students do not perceive instructor quality in dual-enrollment courses as beneficial for success in college to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean perceived instructor quality score obtained from undergraduate students who previously participated in dual-enrollment courses was significantly higher than the midpoint score of 3. An overall measure for dual-

enrollment instructor quality was computed by averaging the respondents' scores on items related to the accessibility of the instructor, classroom discussions and lecture. The sample mean of 3.66 (*SD*=1.04) was significantly higher than 3, $t(166) = 8.236$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .51 to .83. The effect size *d* of .64 indicated a medium effect. The results suggested that undergraduate students who participated in dual-enrollment courses during high school perceived the dual-enrollment instructor quality as beneficial to their success in college. Figure 12 shows the distribution of the average score of participant responses related to the quality of the instructor in dual-enrollment courses.

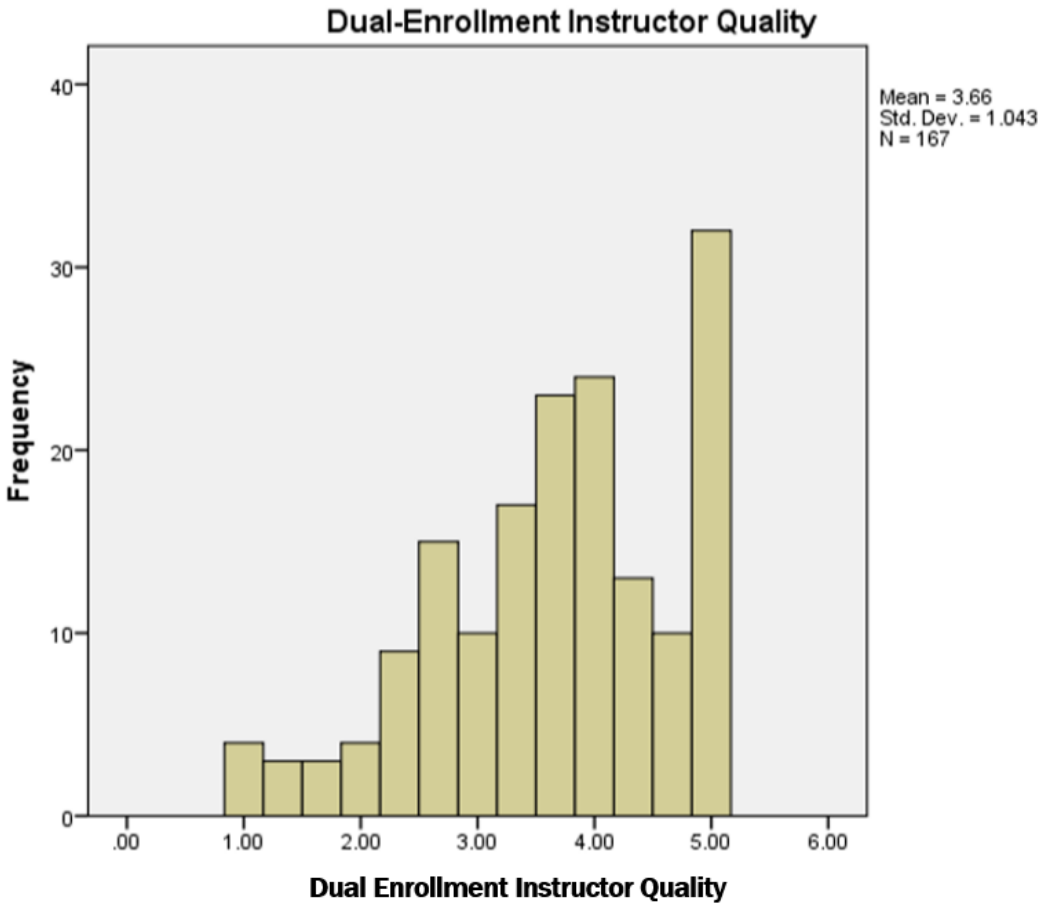

Figure 12. Undergraduate student perceptions of instructor quality in dual-enrollment courses

Research Question 6

RQ6: Do undergraduate students perceive that participation in dual-enrollment courses prepared them academically for college coursework to a significant extent?

H_o6_1: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of writing to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean writing score of undergraduate students who previously participated in dual-enrollment courses was significantly higher than midpoint score of 3. The sample mean of 3.80 (*SD*=1.18) was significantly higher than 3, $t(165) = 8.73$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .62 to 98. The effect size *d* of .68 indicated a medium to large effect. The results suggested that undergraduate students perceived the writing skills gained from dual-enrollment participation as beneficial to their academic success in college. Figure 13 shows the distribution of the average score of participant responses related to writing in dual-enrollment courses.

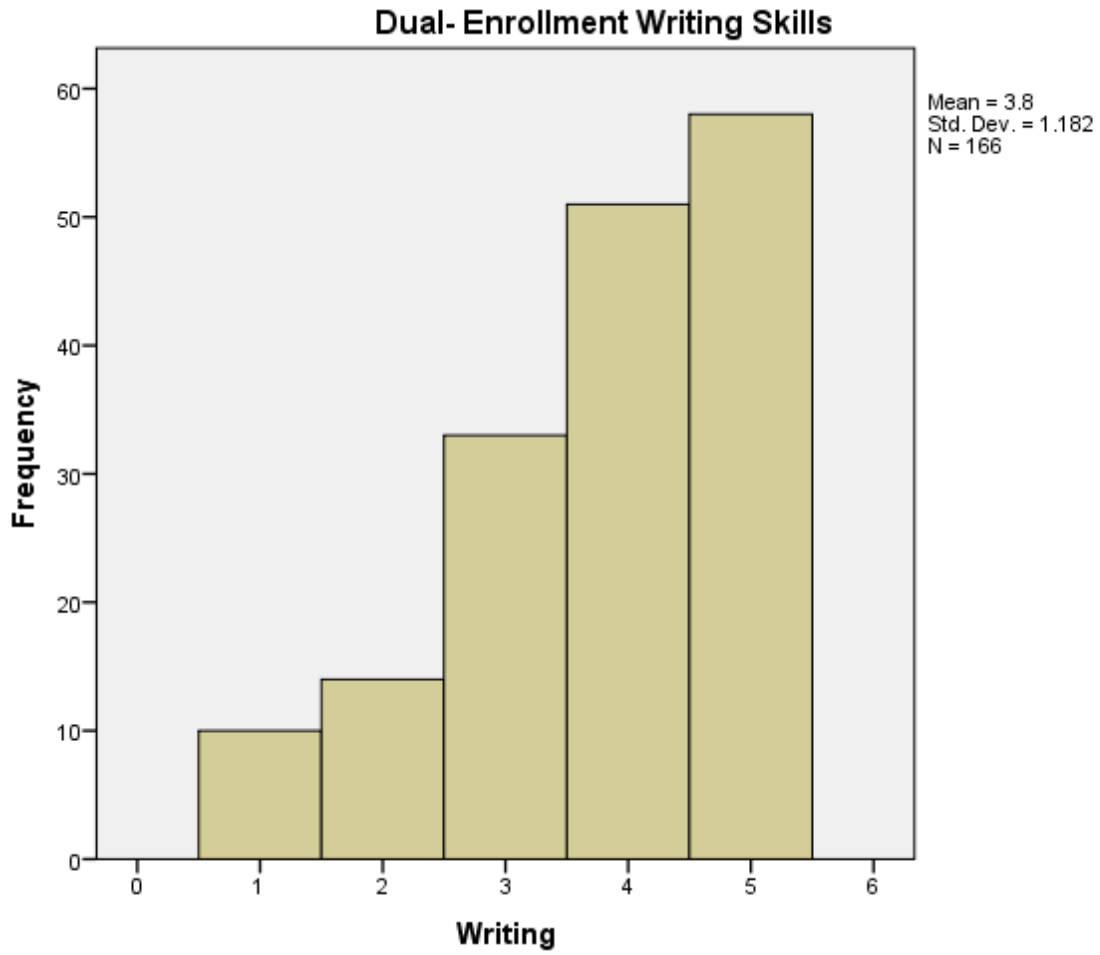

Figure 13. Undergraduate student perceptions of writing skills gained through dual-enrollment program participation

H_o6_2: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of time management to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean time-management score of undergraduate students who previously participated in dual-enrollment courses was significantly higher than the midpoint score of 3. The sample mean of 3.98 (*SD*= 1.14) was significantly higher than 3, $t(165) = 10.99$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .80 to 1.15. The effect size *d* of .85

indicated a large effect. The results suggested that undergraduate students perceived the time-management skills gained from dual-enrollment course participation as beneficial to their academic success in college. Figure 14 shows the distribution of the average score of participant responses related to time-management in dual-enrollment courses.

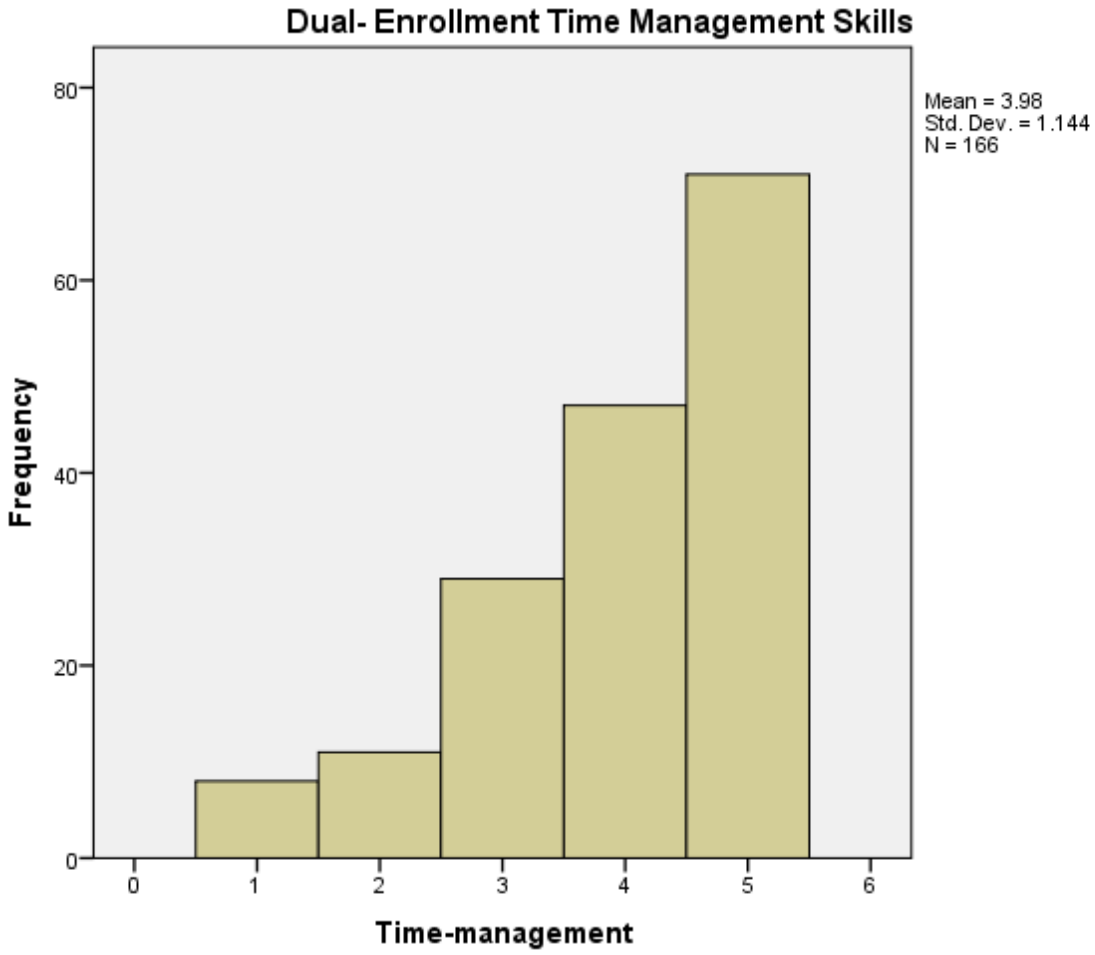

Figure 14. Undergraduate student perceptions of time-management skills gained through dual-enrollment program participation

H_o6_3: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of note-taking to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean note-taking score of undergraduate students who previously participated in dual-enrollment courses was significantly higher than the midpoint score of 3. The sample mean of 3.59 (*SD*= 1.28) was significantly higher than 3, $t(165) = 5.97$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means was .40 to .79. The effect size *d* of .64 indicated a medium effect. The results suggested that undergraduate students perceived the note-taking skills gained from dual-enrollment participation as beneficial to their academic success in college. Figure 15 shows the distribution of the average score of participant responses related to note-taking skills gained through dual-enrollment program participation.

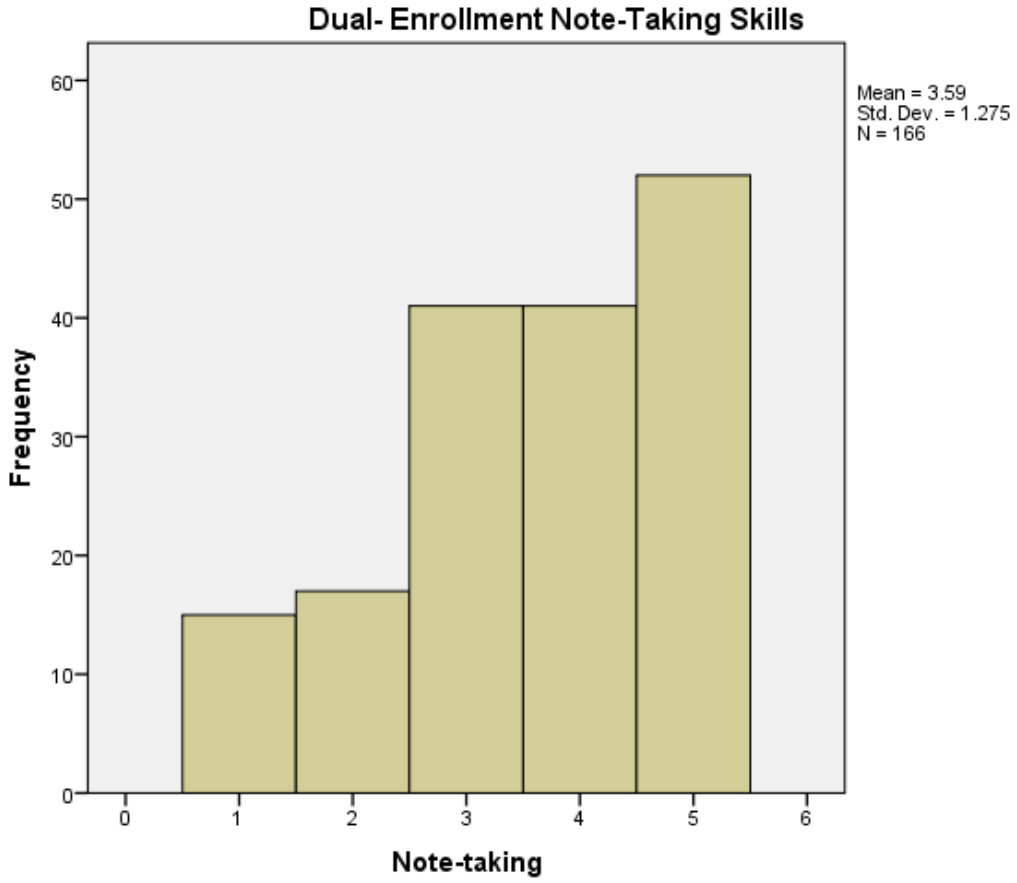

Figure 15. Undergraduate student perceptions of note-taking gained through dual-enrollment program participation

$H_0 6_4$: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of study skills to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean study skills score of undergraduate students who previously participated in dual-enrollment courses was significantly differed from the midpoint score of 3. The sample mean of 3.67(*SD*=1.25) was significantly higher than 3, $t(165) = 6.973$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .48 to .87. The effect size *d* of .54 indicated a medium effect. The results suggested that undergraduate students perceived the study skills gained from dual-enrollment course participation as beneficial to their academic success in college. Figure 16 shows the distribution of the average score of participant responses related to study skills gained through dual-enrollment program participation.

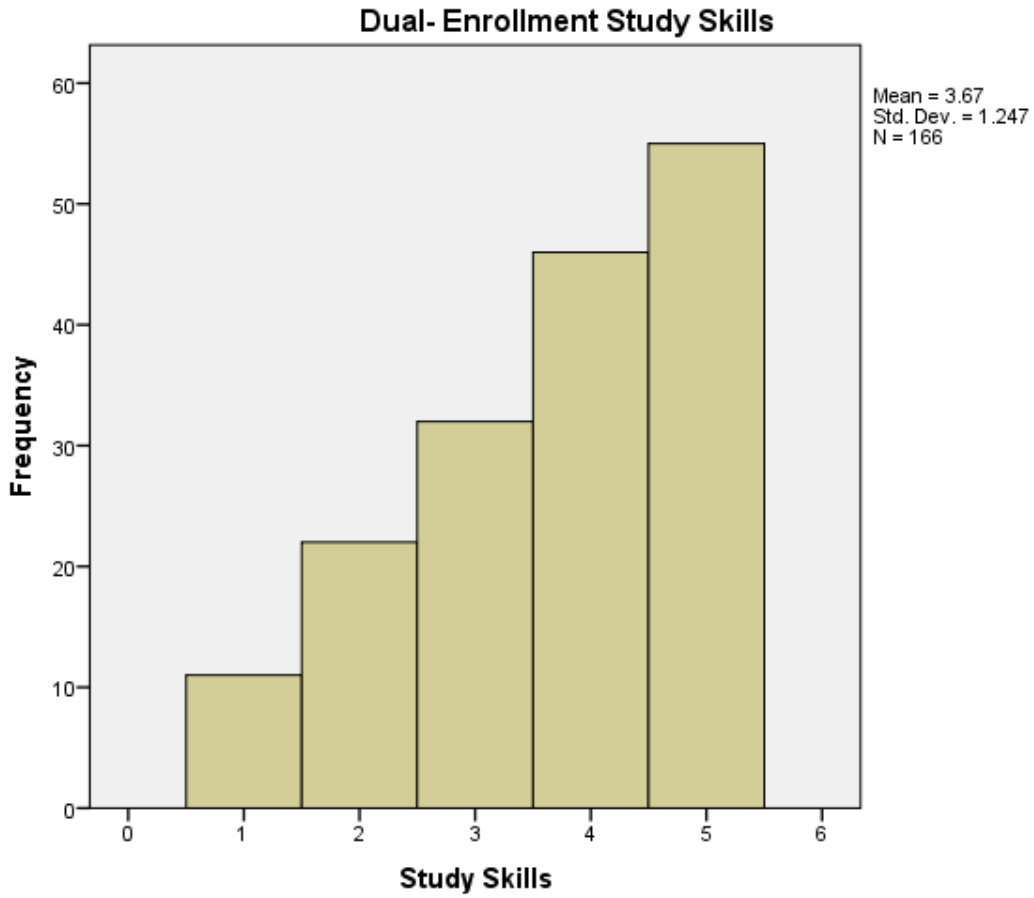

Figure 16. Undergraduate student perceptions of study skills gained through dual-enrollment program participation

$H_0 6_5$: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of independent learning to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean independent learning skills score of undergraduate students who previously participated in dual-enrollment courses was significantly higher than the midpoint score of 3. The sample mean of 4.02 (*SD*= 1.027) was significantly higher than 3, $t(165) = 12.85$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .87 to 1.18. The effect size

d of .998 indicated a large effect. The results suggested that undergraduate students perceived the independent learning skills gained from dual-enrollment course participation as beneficial to their academic success in college. Figure 17 shows the distribution of the average score of participant responses related to the perceived benefits of working independently in dual-enrollment courses.

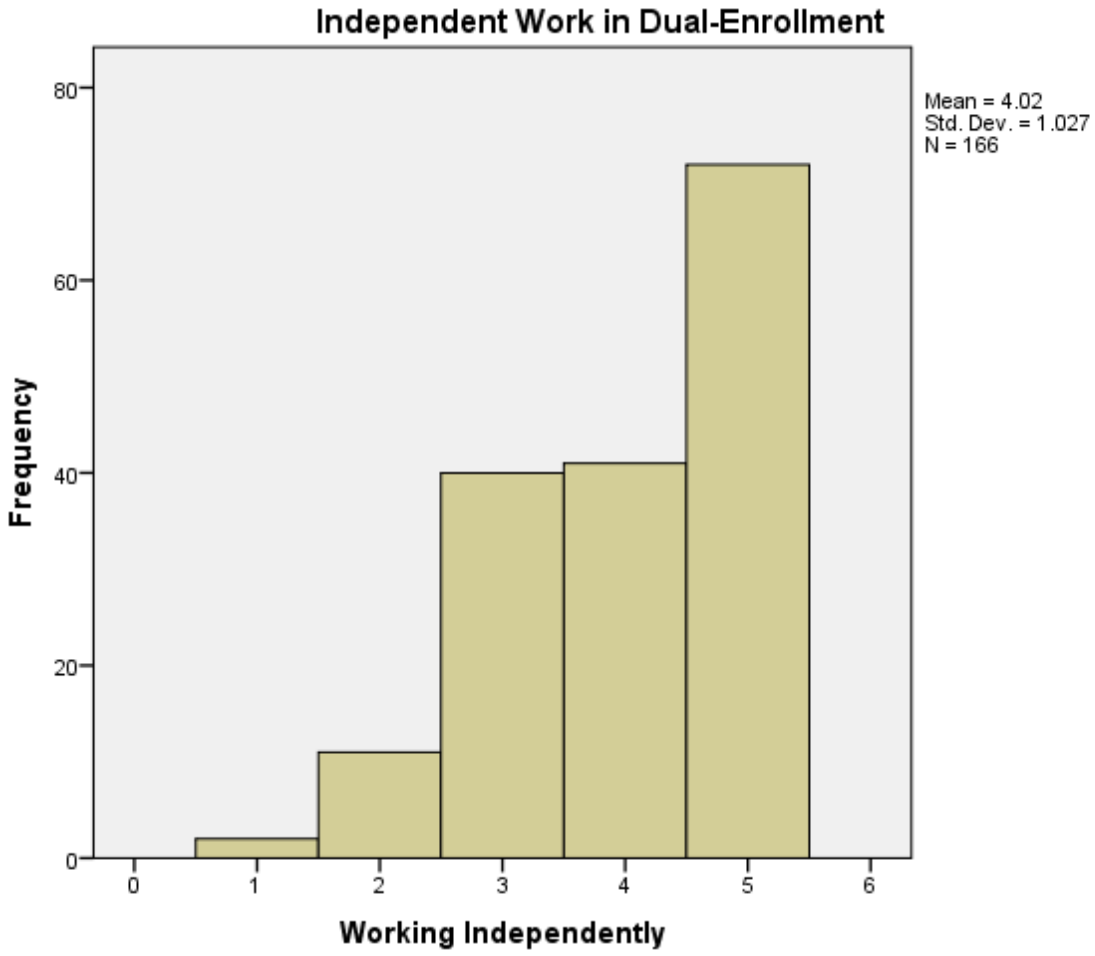

Figure 17. Undergraduate student perceptions of independent learning skills gained through dual-enrollment program participation

$H_0 6_6$: Undergraduate students do not perceive that participation in dual-enrollment courses prepared them academically in the area of reading complex text to a significant extent.

A one-sample *t*-test was used to evaluate whether the mean reading complex text score of undergraduate students who previously participated in dual-enrollment courses was significantly higher than the midpoint score of 3. The sample mean of 3.66 (*SD*= 1.189) was significantly higher than 3, $t(165) = 7.11$, $p < .001$. Therefore, the null hypothesis was rejected. The 95% confidence interval for the difference in means ranged from .47 to .84. The effect size *d* of .55 indicated a medium effect. The results suggested that undergraduate students perceived the exposure to complex text in dual-enrollment courses as beneficial to their academic success in college. Figure 18 shows the distribution of the average score of participant responses related to reading complex text in dual-enrollment coursework.

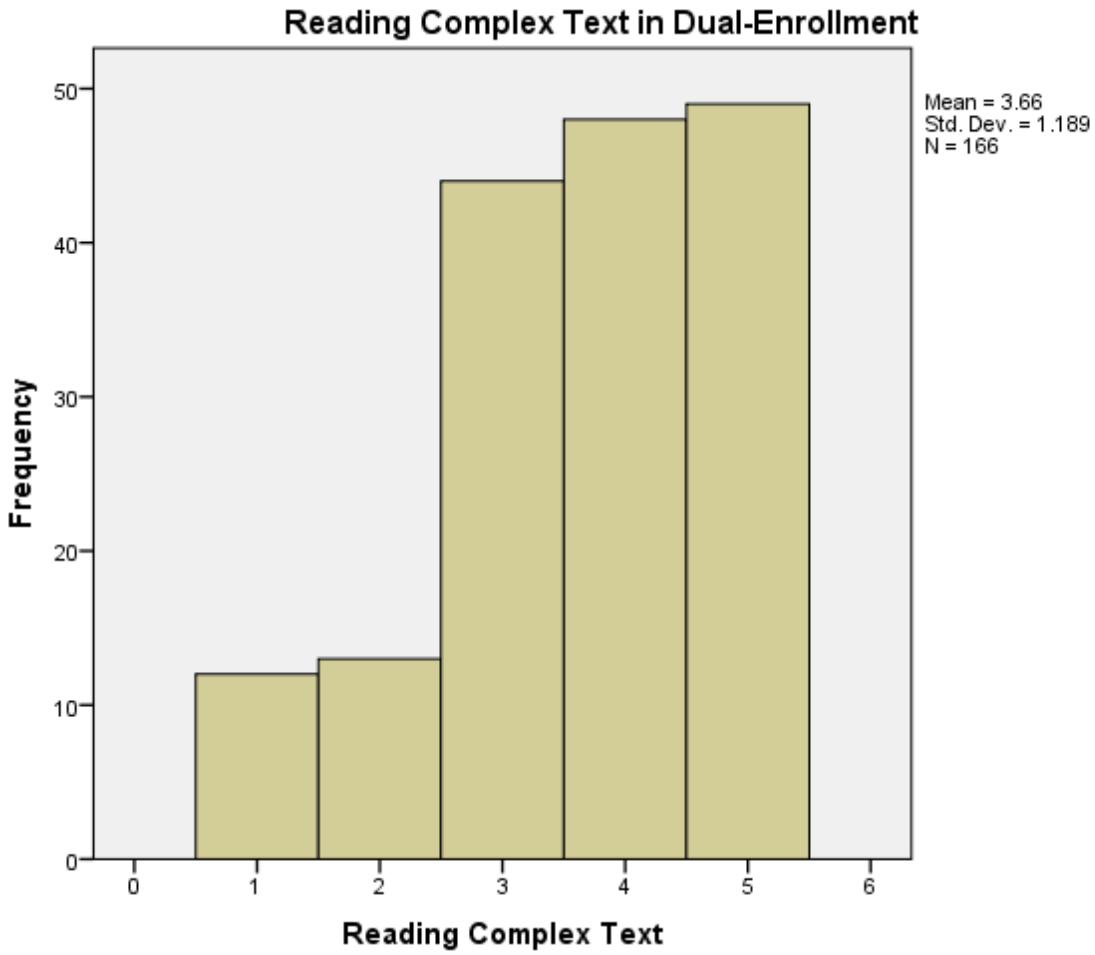

Figure 18. Undergraduate student perceptions of reading complex text in dual-enrollment coursework

Research Question 7

RQ7: Is there a significant difference in student perceptions of preparedness in writing, time management, note-taking, study skills, independent learning, and reading complex text between students who took AP courses and students who participated in dual enrollment?

$H_0 7_1$: There are no significant differences in student perceptions of preparedness in writing between students who took AP courses and students who participated in dual enrollment.

An independent samples *t* test was conducted to evaluate the hypothesis that perceptions of preparedness in writing differed significantly between students who participated in AP and students who participated dual-enrollment courses in high school. The test showed no significant difference between the mean score of the two groups, $t(338) = .34$, $p = .73$, *ns*. Therefore, the null hypothesis was retained. Students who participated in AP courses (M=3.84, SD=1.17) and those who participated in dual enrollment (M= 3.80, SD= 1.18) tended to rate their perceptions of academic preparedness in the area of writing similarly. The 95% confidence interval for the difference in means ranged from -.29 to .21. The effect size *d* of .03 indicated a small effect size. The distribution of participant responses appear in Table 3.

Table 3

Student Perceptions of Writing (n= percentage of participant responses)

Course Type	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
AP	4.60	9.77	19.54	28.74	37.36
Dual Enrollment	6.02	8.43	19.88	30.72	34.94

$H_0 7_2$: There are no significant differences in student perceptions of preparedness in time management between students who took AP courses and students who participated in dual enrollment.

An independent samples *t* test was conducted to evaluate the hypothesis that perceptions of preparedness in time management differed significantly between students who participated in AP and students who participated dual-enrollment courses in high school. The test showed no significant difference between the mean score of the two groups, $t(338) = 1.60$, $p = .11$, *ns*. Therefore, the null hypothesis was retained. Students who participated in AP courses (M= 3.77, SD= 1.22) and those who participated in dual enrollment (M= 3.98, SD= 1.14) tended to rate

their perceptions of academic preparedness in the area of writing similarly. The 95% confidence interval for the difference in means ranged from -.05 to .46. The effect size *d* of .18 indicated a large effect size. The distribution of participant responses appears in Table 4.

Table 4

Student Perceptions of Time Management (n= percentage of participant responses)

Course Type	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
AP	4.82	6.63	17.47	28.31	42.77
Dual Enrollment	6.32	10.34	18.97	28.74	35.63

H_o7_3: There are no significant differences in student perceptions of preparedness note-taking between students who took AP courses and students who participated in dual enrollment.

An independent samples *t* test was conducted to evaluate the hypothesis that perceptions of preparedness in note-taking differed significantly between students who participated in AP and students who participated dual-enrollment courses in high school. The test showed no significant difference between the mean score of the two groups, $t(338) = 1.45$, $p = .052$, *ns*. Therefore, the null hypothesis was retained. Students who participated in AP courses (M=3.78, SD=1.16) and those who participated in dual enrollment (M=3.59, SD=1.27) tended to rate their perceptions of academic preparedness in the area of writing similarly. The 95% confidence interval for the difference in means ranged from -.45 to .68. The effect size *d* of .12 indicated a large effect size. The distribution of participant responses appears in Table 5.

Table 5

Student Perceptions of Note-Taking (n= percentage of participant responses)

Course Type	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
AP	5.75	7.47	22.99	30.46	33.33
Dual Enrollment	9.04	10.24	24.70	24.70	31.33

$H_0 7_4$: There are no significant differences in student perceptions of preparedness in study skills between students who took AP courses and students who participated in dual enrollment.

An independent samples *t* test was conducted to evaluate the hypothesis that perceptions of preparedness in study skills differed significantly between students who participated in AP and students who participated dual-enrollment courses in high school. The test showed no significant difference between the mean score of the two groups, $t(338) = 3.99$, $p = .69$, *ns*. Therefore, the null hypothesis was retained. Students who participated in AP courses ($M= 3.62$, $SD= 1.25$) and those who participated in dual enrollment ($M= 3.67$, $SD= 1.25$) tended to rate their perceptions of academic preparedness in the area of writing similarly. The 95% confidence interval for the difference in means ranged from -.21 to .32. The effect size *d* of .04 indicated a medium effect size. The distribution of participant responses appears in Table 6.

Table 6

Student Perceptions of Study Skills (n= percentage of participant responses)

Course Type	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
AP	9.20	8.62	22.99	29.31	29.89
Dual Enrollment	6.63	13.25	19.28	27.71	33.13

H_o7_5: There are no significant differences in student perceptions of preparedness in independent learning between students who took AP courses and students who participated in dual enrollment.

An independent samples *t* test was conducted to evaluate the hypothesis that perceptions of preparedness in independent learning differed significantly between students who participated in AP and students who participated dual-enrollment courses in high school. The test showed a significant difference between the mean score of the two groups, $t(338) = 2.23$, $p = .03$. Therefore, the null hypothesis was rejected. Students who participated in AP courses (M=3.76, SD=1.16) tended to rate the independent learning skills gained through program participation lower than those who participated in dual enrollment (M=4.02, SD=1.03). The 95% confidence interval for the difference in means ranged from -.031 to .499. The effect size *d* of .24 indicated a large effect size. The distribution of participant responses appears in Table 7.

Table 7

Student Perceptions of Independent Learning (n= percentage of participant responses)

Course Type	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
AP	5.75	7.47	25.29	28.26	33.33
Dual Enrollment	1.20	6.63	24.10	24.70	43.37

H_o7_6: There are no significant differences in student perceptions of preparedness in reading complex text between students who took AP courses and students who participated in dual enrollment.

An independent samples *t* test was conducted to evaluate the hypothesis that perceptions of preparedness in reading complex text differed significantly between students who participated in AP and students who participated dual-enrollment courses in high school. The test showed no significant difference between the mean score of the two groups, $t(338) = 1.76$, $p = .08$, *ns*. Therefore, the null hypothesis was retained. Students who participated in AP courses (M=3.88, SD=1.14) and those who participated in dual enrollment (M=3.66, SD=1.19) tended to rate their perceptions of academic preparedness in the area of writing similarly. The 95% confidence interval for the difference in means ranged from -.47 to .03. The effect size *d* of .19 indicated a large effect size. The distribution of participant responses appears in Table 8.

Table 8

Student Perceptions of Reading Complex Text (n= percentage of participant responses)

Course Type	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
AP	4.60	8.05	20.11	29.31	37.93
Dual Enrollment	7.23	7.83	26.51	28.92	29.52

Research Question 8

RQ8: How, and to what extent, do undergraduate students perceive one early postsecondary opportunity as more beneficial than the other?

Ninety-four participants responded to the open-ended survey item which asked participants to provide feedback about why they believed either AP or dual-enrollment courses were more beneficial to their college success. Sixty-three participants reported that dual enrollment courses were more beneficial to their success in college. The most common theme which emerged from participant responses pertained to the perceived benefit of dual-enrollment courses in relation to taking an actual college course with a college professor. One participant

reported that dual enrollment courses allow students to "get a feel for what college classrooms would be like, how they [professors] taught, what they [professors] actually expected, how they [professors] differed big time from high school teachers, and how their [professors'] expectations were higher but also relaxed." Another participant reported "the dual-enrollment courses I took were taught by adjuncts and actual professors who have taught college courses before. The AP courses I took were simply high-school teachers deemed qualified to teach at a college level." The guarantee of college credit also emerged as a benefit of dual-enrollment participation. One participant responded that "It was an actual college course on a college campus, so I had a much better idea of what I would be getting when I started college full time. The coursework wasn't near as rigorous as AP, and it was guaranteed college credit, which helped me more than AP."

Several students expressed discontent with the expense of the AP test and the prospect of earning credit in AP compared to dual enrollment. For example, one participant stated, "I believe dual enrollment is more helpful, because you don't have to rely on a single test to get college credit. Dual enrollment is taking the actual class to get credit, whereas AP is taking a more difficult version of the class and getting credit based on essays" while another reported "I was guaranteed the college credit [in dual enrollment] as long as I made at least a B in the class, whereas I was required to make a 3 on an AP test. The specific AP test I took was $91 and I scored a 1, which resulted in no college credit after working very hard to complete the course."

Thirty-one participants reported that AP courses were more beneficial than dual-enrollment courses. The most common benefit reported was the academic rigor of the Advanced Placement course. One respondent stated that AP courses were more effective "because they were harder courses and involved more effort." Another participant reported that "AP programs

were better because of the rigor and what was taught. Dual Enrollment did very little to help me prepare for college because it was very easy." Many students reported that AP teachers had higher expectations for students. For example, one participant stated "AP had a more in-depth discussion on every subject, and it had a higher standard than even current college courses" while another stated that the benefit of AP courses was "due to the fact that only the top percentage of students take AP courses so the teachers can teach on a higher level, whereas dual enrollment was more open to everyone." One participant stated that AP "formed more of an upper level environment that college promotes."

Chapter Summary

The data obtained from the freshmen and sophomores at East Tennessee State University were analyzed and presented in this chapter. Participant scores of academic rigor and instructor quality in both AP and dual-enrollment courses were significantly higher than the midpoint of 3 which indicated that students perceive these elements as beneficial to their academic success in college. Participant responses also indicated that students who participated in either AP or dual-enrollment courses perceived the college readiness skills gained through program participation as beneficial to their academic success in college. When comparing student perceptions about college readiness skills gained through participation in AP and dual enrollment, students rated dual-enrollment coursework higher than AP in the area of independent learning. Responses from students who participated in AP and dual enrollment were not significantly different in the areas of writing, time management, note-taking, study skills, and reading complex text. In comparison to Advanced Placement program participation, undergraduate students tended to rate dual enrollment experiences as more beneficial to their academic success in terms of independent work.

CHAPTER 5

DISCUSSION, RECOMMENDATIONS, AND SUMMARY

This chapter contains a summary of the findings, conclusions, and recommendations for future research. Perceptual data were gathered from freshmen and sophomores enrolled at East Tennessee State University about the college readiness skills gained through program participation. Perceptions of the individual program components of both Advanced Placement and dual-enrollment courses were also assessed in relation to college readiness.

Discussion

The statistical analysis reported in the study was based on eight research questions presented in chapters 1 and 3. Research questions 1, 2, 4, and 5 were developed to assess the perceived benefits of academic rigor and instructor quality in Advanced Placement and dual-enrollment coursework in relation to college readiness. The number of participants in this study was 265. One hundred seventy-three study respondents participated in AP courses in high school and 165 respondents participated in dual enrollment courses. One hundred twenty-three respondents participated in both Advanced Placement and dual enrollment.

In this study, instructor quality was examined by assessing student perceptions of instructor accessibility, classroom discussions, and course lectures. Student responses about tests and quizzes, assignments, and overall course rigor were used to assess academic rigor. Participants indicated that the academic rigor and instructor quality of both Advanced Placement and dual-enrollment courses were beneficial to their academic success in college.

Undergraduate student perceptions of college readiness skills gained through participation in AP, dual-enrollment, or both were assessed in research questions 3 and 6. The

areas of writing, time management, note-taking, study skills, independent learning, and reading complex text were assessed after a thorough review of literature which identified these skills as essential to students' academic success in college (Byrd & MacDonald, 2005; Camara et al., 2015; Crede & Kuncel, 2008; Conley, 2007; Fike & Fike, 2008; Proctor et al., 2006; Robbins et al., 2004; Wachowiak, 2015). The results of this study supported prior research as study participants perceived the assessed college readiness skills gained through participation in AP or dual-enrollment courses as beneficial to their success in college.

Research 7 was designed to examine the differences in student perceptions of those who participated in AP and dual-enrollment. There were no significant differences in participant responses in the areas of writing, time management, note-taking, study skills, and reading complex text when comparing responses of those who participated in AP or dual-enrollment. However, study participants rated dual-enrollment courses significantly higher than AP courses in the area of independent learning. Independent learning is a crucial component of early post-secondary opportunity enrollment as college professors expect that students will complete assigned tasks independently (Conley, 2007).

While many participants commented that their dual-enrollment experiences better prepared them for college, their reasoning seemed to lie in the title assigned to the courses and instructors. Dual-enrollment program participants perceived their experiences as higher quality than AP due to the label assigned as an actual college class. Participant perceptions of instructor quality were also associated with the title of college professor. While the assignment of value to dual-enrollment instructor and course quality warrants further investigation, participant responses supported existing research regarding the benefits of learning about college processes

and post-secondary course demands while in high school (Ganzert, 2014; Khazem & Khazem, 2014; Klopfenstein & Lively, 2013).

While study respondents identified dual-enrollment courses as higher quality in the open-ended question, no study respondents specifically listed academic rigor as a benefit of dual-enrollment course participation. However, many participants responded that AP coursework was more rigorous than dual-enrollment coursework. Furthermore, some respondents stated that AP coursework was more rigorous than college coursework. Research performed by Cooney et al. (2013) also found that students perceived AP courses as higher quality. The responses of study participants may extend this sentiment of elevated expectations and rigor in AP classrooms.

The assignment of credit also emerged as a theme in participant responses. Dual-enrollment participants viewed the accrual of college credit as beneficial to their college success. Respondents also indicated that while AP coursework prepared them academically for college, many found the credit assignment process to detract from the course experience. Study participants also expressed discontent with one exam determining secondary credit accrual. This sentiment echoed previous research criticizing the transfer of credit in AP courses (Hallett &Venegas, 2011; Schneider, 2009).

Recommendations for Practice

Post-secondary education programs are essential in training students for high-wage jobs. In order to streamline the post-secondary transition for high school students, high school programs must teach the college readiness skills necessary for college success. The following implications for practice emerged as a result of the current study:

1. States and districts should expand funding opportunities for both dual enrollment and AP programs. Participants in the current study who enrolled in either dual-enrollment or AP programs reported gaining skills necessary for success in college.

2. High school counselors and administrators should educate both students and parents about the transferability of credit and credit assignment process in both AP and dual-enrollment courses.

3. AP instructors should place an emphasis on exam success. While many study participants reported gaining important academic skills through Advanced Placement programs, some were discontent with lack of earned college credit. These findings further support the work of Cooney et al. (2013) who reported that students who did not experience exam success perceived the experience as beneficial, and Handwerk et al. (2008) who stated that most students do not earn college credit or placement as a result of AP participation.

4. AP course instructors should increase opportunities for high school students to practice independent learning skills. The results of this study showed that students perceived dual enrollment programs as more beneficial to their academic success in the area of independent learning. Conley (2007) also asserted the importance of independent learning in relation to college readiness.

Recommendations for Future Research

Based on the results of the current study and the literature reviewed, research is still needed to provide additional information about college readiness skills gained through

participation in AP and dual-enrollment coursework. The recommendations for future research include the following:

1. A qualitative study should be conducted in order to further investigate the perceptions of students about specific readiness skills identified in this study. Using interviews of undergraduate students would provide additional information about the benefits of early post-secondary opportunities in relation to college readiness.
2. Future studies should include information about the course success of study participants. Students who did not experience AP exam success and those with exam success often have different perceptions of the skills gained through course participation (Cooney et al., 2013). Students who participated in dual enrollment coursework may also have divergent perceptions based on the transferability of credit.
3. Future studies should include information about the socioeconomic status of participants along with information about the size and geographic location of the high school.
4. Researchers need to further examine the characteristics of instructor quality.
5. Future studies should examine differences in perceptions of undergraduate students who participated in dual-enrollment on their high school campus versus those who enrolled in courses on a college campus.
6. Researchers should investigate the grade point averages of high school students who enroll in AP and dual-enrollment coursework to determine if students who are more likely to experience exam success should enroll in AP while others in dual-enrollment. Furthermore, researchers could assess whether or not this phenomenon is related to specific content areas.

7. This study should be replicated in another geographic location to determine whether results retrieved were unique to Northeast Tennessee.

Summary

The purpose of this quantitative study was to determine if undergraduate student perceptions of college readiness were impacted by participation in Advanced Placement courses, dual-enrollment courses, or both. Perceptual data were gathered from freshmen and sophomores enrolled at East Tennessee State University about the college readiness skills gained through program participation using an online survey. The results of the study indicated that undergraduate students perceive instructor quality and course rigor of both AP and dual-enrollment as beneficial to their success in college. Participants also indicated that the college readiness skills acquired through program participation were beneficial to their college success to a significant extent in the areas of writing, time management, note-taking, study skills, independent learning, and reading complex text. When comparing results related to AP and dual-enrollment, participants assigned similar ratings to the college readiness skills assessed in all areas except independent learning. Participant responses indicated that they perceived dual-enrollment as more beneficial than AP in the area of independent learning. In response to an open-ended survey item, participants also reported that dual-enrollment courses were more beneficial than AP courses especially in regard to the transfer of course credit and instructor quality.

Several implications for practice were derived from this study including the advisement of high school students about the transferability and accrual of credit resulting from program participation. The results obtained from the open-ended survey item also highlighted the

importance of exam preparation and participation in AP coursework. The results also suggested that an increased focus on independent learning skills may improve AP program experiences.

While the results of this study support previous research, several recommendations for future research were presented. The characteristics of instructor quality could be further defined. For example, a qualitative study could also expound upon student perceptions of the college readiness skills assessed in this study. In addition, performing similar research in another area may provide more information about student perceptions of college readiness skills acquired through participation in AP or dual-enrollment programs.

REFERENCES

ACT. *The condition of college & career readiness 2017*: Tennessee key findings. Iowa City, IA: ACT Research. Retrieved January 19, 2018 from https://www.act.org/content/dam/act/unsecured/documents/cccr2017/Tennessee-CCCR-2017-Final.pdf

Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college.* US Department of Education. Retrieved September 15, 2017 from https://files.eric.ed.gov/fulltext/ED490195.pdf

An, B. (2013). The Impact of Dual Enrollment on College Degree Attainment Do Low-SES Students Benefit? *Educational Evaluation and Policy Analysis, 35*(1), 75. doi:10.3102/0162373712461933

An, B. P., & Taylor, J. L. (2015). *Are dual enrollment students college ready? Evidence from the Wabash National Study of Liberal Arts Education*. Education Policy Analysis Archives, 23(58). http://dx.doi.org/10.14507/epaa.v23.1781

Allen, D., & Dadgar, M. (2012). Does dual enrollment increase students' success in college? Evidence from a quasi-experimental analysis of dual enrollment in New York City. *New Directions for Higher Education, 2012*(158), 11-19. doi:http://dx.doi.org/10.1002/he.20010

Barnard-Brak, L., McGaha-Garnett, V., & Burley, H. (2011). Advanced Placement course enrollment and school-level characteristics. *NASSP Bulletin*, 95(3), 165-174.

Berger, A., Turk-Bicakci, L., Garet, M., Song, M., Knudson, J., Haxton, C., ... & Keating, K. (2013*). Early college, early success: Early college high school initiative impact study*. Washington, DC: American Institutes for Research. Retrieved February 26, 2018 from https://files.eric.ed.gov/fulltext/ED577243.pdf

Bill & Melinda Gates Foundation. (2004) Strengthening national network of early college high schools [Press Release]. Retrieved February 26, 2018 from https://www.gatesfoundation.org/Media-Center/Press-Releases/2004/12/Strengthening-National-Network-of-Early-College-High-Schools

Burns, H., & Lewis, B. (2000). Dual-enrolled students' perception of the effect of classroom environment on educational experience. *The Qualitative Report, 4*(1), 1-10.

Byrd, K. L., & MacDonald, G. (2005). Defining college readiness from the inside out: First-generation student perspectives. *Community College Review, 33*(1), 22-37. doi:10.1177/009155210503300102

Camara, W., O'Connor, R., Mattern, K., & Hanson, M. A. (2015). *Beyond academics: A holistic framework for enhancing education and workplace success.* ACT Research Report

Series. 2015 (4). ACT, Inc. Retrieved February 19, 2018 from https://www.act.org/content/dam/act/unsecured/documents/ACT_RR2015-4.pdf

Carnevale, A. P., Smith, N., and Strohl, J. (2013). *Recovery: Job Growth and Education Requirements Through 2020.* Washington, DC: Center on Education and the Workforce, Georgetown University. Retrieved January 27, 2018 from: https://cew.georgetown.edu/report/recover-job-growth-and-education-through-2020/.

Cassidy, L., Keating, K., & Young, V. (2010). Dual enrollment: Lessons learned on school-level implementation. Menlo Park, CA: SRI International. Retrieved February 12, 2018 from https://www2.ed.gov/programs/slcp/finaldual.pdf

Chajewski, M., Mattern, K. D., & Shaw, E. J. (2011). Examining the role of advanced placement exam participation in 4-year college enrollment. Educational Measurement: Issues and Practice, 30(4), 16-27.

College Board. (2014). The 10th annual AP report to the nation. Retrieved October 17, 2017 from https://research.collegeboard.org/programs/ap/data/nation/2014

College Board (2017). AP Courses. Retrieved October 17, 2017 from https://apstudent.collegeboard.org/apcourse

Conley, D. T. (2007). *Rethinking college readiness*. Eugene, OR: Educational Policy Improvement Center. Retrieved September 15, 2017 from http://dx-doi-org/10-1002/he-321

Conley, D. T. (2014). New conceptions of college and career ready: A profile approach to admission. *Journal of College Admission*, (223), 12-23.

Cooney, S. M., McKillip, M. E. M., & Smith, K. (2013). *An investigation of college students' perceptions of Advanced Placement courses* (Research Report No. 2013-2). Retrieved September 9, 2017 from https://files.eric.ed.gov/fulltext/ED558110.pdf

Credé, M., & Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting collegiate academic performance. *Perspectives on Psychological Science, 3*(6), 425-453. doi:10.1111/j.1745-6924.2008.00089.x

Crouse, J. J., & Allen, J. (2014). College course grades for dual enrollment students. *Community College Journal of Research & Practice, 38*(6), 494-511. doi: 10.1080/10668926.2011.567168

Duffy, W. (2010). Persistence and performance at a four-year university. The relationship with advanced coursework during high school. In Sadler, P., M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp. 139-157). Cambridge, MA: Harvard Education Press.

Ewing, M., Huff, K., Kaliski (2010). Validating AP exam scores: Current research and practices. In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp. 85-105). Cambridge, MA: Harvard Education Press.

Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review, 36*(2), 68-88. doi:10.1177/0091552108320222

Flores, S., & Gomez, M. O. (2011). Strategies for increasing advanced placement participation for underrepresented students: Barriers, practices, and positive outcomes. *NASSP Bulletin, 95*(1), 65-79. doi:10.1177/0192636511406529

Gall, K., Knight, D. W., Carlson, L. E., & Sullivan, J. F. (2003). Making the grade with students: The case for accessibility. Journal of Engineering Education, 92(4), 337-343.

Ganzert, B. (2014). Dual enrollment credit and college readiness. *Community College Journal of Research and Practice, 38*(9), 783-793. doi:10.1080/10668926.2012.719483

Grubb, J. M., Scott, P. H., & Good, D. W. (2017). The answer is yes: Dual enrollment benefits students at the community college. *Community College Review, 45*(2), 79-98. doi:10.1177/0091552116682590. Retrieved April 11, 2018 from http://journals.sagepub.com/doi/full/10.1177/0091552116682590

Hallett, R. E., & Venegas, K. M. (2011). Is increased access enough? Advanced placement courses, quality, and success in low-income urban schools. *Journal for the Education of the Gifted, 34*(3), 468-487.

Handwerk, P., Tognatta, N., Coley, R. J., & Gitomer, D. H. (2008). Access to success: Patterns of Advanced Placement participation in US high schools. Policy Information Report. *Educational Testing Service*. Retrieved September 5, 2107 from https://www.ets.org/Media/Research/pdf/PIC-ACCESS.pdf

Hofmann, E. (2012). Why dual enrollment? *New Directions for Higher Education, 2012*(158), 1-8.10. doi: 1002/he.20009

Hoffman, N., Vargas, J., & Santos, J. (2009). New directions for dual enrollment: Creating stronger pathways from high school through college. *New Directions for Community Colleges, 2009*(145), 43-58. doi : 10.1002/cc

Karp, M., Calcagno, J., Hughes, K., Jeong, D., & Bailey, T. (2007). *The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states*. St. Paul, MN: University of Minnesota, National Research Center for Career and Technical Education. Retrieved September 15, 2017 from https://files.eric.ed.gov/fulltext/ED498661.pdf

Karp, M. M., & Hughes, K. L. (2008). Study: Dual enrollment can benefit a broad range of students. *Techniques: Connecting Education and Careers (J1), 83*(7), 14-17. (ERIC

Document Reproduction Service No. EJ815413) Retrieved September 15, 2017 from https://files.eric.ed.gov/fulltext/EJ815413.pdf

Kanny, M. A. (2015). Dual enrollment participation from the student perspective. *New Directions for Community Colleges, 2015*(169), 59-70. doi:10.1002/cc.20133

Khazem, J. H., & Khazem, H. A. (2014). The changing policy framework of dual enrollment. *International Journal of Education Research, 9*(1), 105.

Kim, D.I., & Ra, Y.A. (2015). What impacts success in college? Findings from the perceptions of Korean students. *College Student Journal, 49*(1), 161-168.

Klopfenstein, K. & Lively, K. (2012), Dual enrollment in the broader context of college-level high school programs. *New Directions for Higher Education, 2012*, 59–68. doi:10.1002/he.20015

Klopfenstein, K. & Thomas, K. (2010). Advanced Placement: Evaluating the policies of state and colleges. In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp. 167-188). Cambridge, MA: Harvard Education Press.

Kyllonen, P. C., Lipnevich, A. A., Burrus, J., & Roberts, R. D. (2014). Personality, motivation, and college readiness: A prospectus for assessment and development. *ETS Research Report Series, 2014*(1), 1-48. doi:10.1002/ets2.12004.

Komarraju, M., Ramsey, A., & Rinella, V. (2013). Cognitive and non-cognitive predictors of college readiness and performance: Role of academic discipline. *Learning and Individual Differences, 24*, 103-109. https://doi.org/10.1016/j.lindif.2012.12.007

Lacy, T. (2010). Examining AP: Access, rigor, and revenue in the history of the Advanced Placement Program. In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp.17-48). Cambridge, MA: Harvard Education Press.

Lake, D. A. (2001). Student performance and perceptions of a lecture-based course compared with the same course utilizing group discussion. *Physical Therapy, 81*(3), 896-902. https://doi.org/10.1093/ptj/81.3.896

Lombardi, A., Seburn, M., & Conley, D. (2011). Development and initial validation of a measure of academic behaviors associated with college and career readiness. *Journal of Career Assessment, 19*(4), 375-391. doi:10.1177/1069072711409345.

Marken, S., Gray, L., & Lewis, L. (2013). *Dual enrollment programs and courses for high school students at postsecondary institutions: 2010-11*. (NCES 2013-002). U. S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved September 29, 2017 from http://nces.ed.gov/pubsearch.

Martin, T. C. (2013). Cognitive and noncognitive college readiness of participants in three concurrent-enrollment programs. *Community College Journal of Research and Practice, 37*(9), 704-718.

McMillan, J., & Schumacher, S. (2014). *Research in education: Evidence-based inquiry* (7th ed). London, England: Pearson.

Milewski, G. B. & Gillie, J.M. (2002). *What are the characteristics of AP Teachers? An examination of survey results*. New York, NY: College Board. Retrieved February 26, 2018 from https://eric.ed.gov/?id=ED561050

Morgan, R., & Klaric, J. (2007). *AP students in college: An analysis of five-year academic careers* (College Board Research Report No. 2007-4). New York, NY: College Board. Retrieved February 25, 2018 from https://files.eric.ed.gov/fulltext/ED561034.pdf

Moore, G. W., & Slate, J. R. (2008). Who's taking the Advanced Placement courses and how are they doing: A statewide two-year study. *The High School Journal, 92*(1), 56-67.

Moore, G. W., Slate, J. R., Edmonson, S. L., Combs, J. P., Bustamante, R., & Onwuegbuzie, A. J. (2010). High school students and their lack of preparedness for college: A statewide study. *Education and Urban Society, 42*(7), 817-838. doi:10.1177/0013124510379619.

National Forum on Education Statistics. (2015). *Forum guide to college and career ready data*. (NFES 2015-157). U.S. Department of Education, Washington, DC: National Center for Education Statistics. Retrieved January 27, 2018 from https://nces.ed.gov/pubs2015/2015157.pdf

O'Connor, M. C., & Paunonen, S. V. (2007). Big Five personality predictors of postsecondary academic performance. *Personality and Individual Differences, 43*(5), 971-990. doi:10.1016/j.paid.2007.03.0

Organisation for Economic Cooperation and Development (2016). *Population with Tertiary Education*. Retrieved October 21, 2017 from https://data.oecd.org/eduatt/population-with-tertiary-education.htm

Ozmun, C. D. (2013). College and academic self-efficacy as antecedents for high school dual-credit enrollment. *The Community College Enterprise*, *19*(1), 61.

Paek, P.L., Braun, H., Ponte, E., Trapani, C., Powers, D. (2010) AP biology teacher characteristics and practices and their relationship to student AP exam performance. In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp. 63--83). Cambridge, MA: Harvard Education Press.

Park, K., Caine, V., & Wimmer, R. (2014). The experiences of advanced placement and international baccalaureate diploma participants; A systematic review of qualitative

research. *Journal of Advanced Academics, 25*(2), 129-153. doi:10.1177/1932202X14532258

Patterson, B. F., Packman, S., & Kobrin, J. L. (2011). *Advanced Placement exam-taking and performance: Relationships with first-year subject area college grades*. Research Report No. 2011-4. College Board. Retrieved January 19, 2018 from https://files.eric.ed.gov/fulltext/ED561033.pdf

Proctor, B. E., Prevatt, F. F., Adams, K. S., Reaser, A., & Petscher, Y. (2006). Study skills profiles of normal-achieving and academically-struggling college students. *Journal of College Student Development, 47*(1), 37-51.

Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin, 130*(2), 261-288. doi:10.1037/0033-2909.130.2.261

Rothschild, E. (1999). Four decades of the advanced placement program. *The History Teacher, 32*(2), 175-206.

Rutschow, E. & Schneider, E. (2011). Unlocking the gate: What we know about improving developmental education. New York, NY: Manpower Research Demonstration Corporation. doi: http://dx.doi.org/10.2139/ssrn.2019763

Sadler, P. (2010a). Advanced high school coursework and college admissions. In Sadler, P. M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp. 245-261). Cambridge, MA: Harvard Education Press.

Sadler, P. (2010b). Advanced Placement in a changing educational landscape. In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp.3- 16). Cambridge, MA: Harvard Education Press

Sadler, P. (2010c). How are AP courses different? In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp.51-61). Cambridge, MA: Harvard Education Press.

Sadler, P. & and Sonnert, G. (2010). High school Advanced Placement and success in college coursework in the sciences. In Sadler, P.M., Sonnert, G., Tai, R.H., & Klopfenstein, K. (Eds.), *AP: A critical examination of the Advanced Placement Program* (pp. 119-137). Cambridge, MA: Harvard Education Press.

Schneider, J. (2009). Privilege, equity, and the Advanced Placement program: Tug of war. *Journal of Curriculum Studies, 41*(6), 813-831.

Scott, T. P., Tolson, H., & Lee, Y. H. (2010). Assessment of Advanced Placement participation and university academic success in the first semester: Controlling for selected high school academic abilities. *Journal of College Admission, 208*, 26-30.

Shaw, E. J., Marini, J. P., & Mattern, K. D. (2013). Exploring the utility of Advanced Placement participation and performance in college admission decisions. *Educational and Psychological Measurement, 73(*2), 229-253. doi: 10.1177/0013164412454291

Speroni, C. (2011). Determinants of Students' Success: *The Role of Advanced Placement and Dual Enrollment Programs*. An NCPR Working Paper. National Center for Postsecondary Research. Retrieved October 17, 2017 from https://files.eric.ed.gov/fulltext/ED527528.pdf

Struhl, B., & Vargas, J. (2012). *Taking college courses in high school: A strategy guide for college readiness--The college outcomes of dual enrollment in Texas*. Jobs for the Future. Retrieved October 7, 2017 from https://files.eric.ed.gov/fulltext/ED537253.pdf

Swanson, J. (2010). Dual Enrollment: The missing link to college readiness. *Principal Leadership, 10*(7), 42.

Swanson, J. L. (2008*). An analysis of the impact of high school dual enrollment course participation on postsecondary academic success, persistence and degree completion.* (Doctoral Dissertation, The University of Iowa.) Available from ProQuest Dissertations and Theses database. (UMI No. 3323472) Retrieved September 29, 2017 from http://nacep.org/wp-content/uploads/2010/02/Dissertation-2008-Joni-L.-Swanson.pdf

Tennessee Department of Education (2017a). Dual Enrollment Grant. Retrieved February 5, 2018 from https://www.tn.gov/collegepays/money-for-college/tn-education-lottery-programs/dual-enrollment-grant.html

Tennessee Department of Education (2017b). *EPSO Implementation Guide: Achieving equity, access, and success through a portfolio approach to early postsecondary opportunities*. Nashville, TN: Office of Postsecondary Coordination & Alignment. Retrieved February 5, 2018 from https://www.tn.gov/content/dam/tn/education/ccte/eps/EPSO_Implementation_Guide_FINAL.pdf

Tennessee Department of Education. (2017c). *Seamless pathways: Bridging Tennessee's gap between high school and postsecondary*. Nashville, TN: Tennessee Department of Education. Retrieved February 5, 2018 from https://www.tn.gov/content/dam/tn/education/reports/rpt_high_school-seamless_pathways.pdf

The College Board. (2003). A brief history of Advanced Placement. New York, NY: College Entrance Examination Board. Retrieved February 10, 2018 from https://web.archive.org/web/20090205075824/http://www.collegeboard.com/prod_downloads/about/news_info/ap/ap_history_english.pdf

US Department of Education (DOE). (2002). Inside No Child Left Behind. Washington, DC: US Print Office. Retrieved February 10, 2018, from https://www2.ed.gov/policy/elsec/leg/esea02/pg14.html

U.S. Department of Education (DOE). (2010). *A blueprint for reform: The reauthorization of the Elementary and Secondary Education Act*. Retrieved February 10, 2018 from https://www2.ed.gov/policy/elsec/leg/blueprint/blueprint.pdf

US Department of Education (DOE). (2017). *Elementary and Secondary Education Act of 1965*. Washington, DC: US Print Office. Retrieved February 10, 2018 from https://legcounsel.house.gov/Comps/Elementary%20And%20Secondary%20Education%20Act%20Of%201965.pdf

Venezia, A., & Jaeger, L. (2013). Transitions from High School to College. *The Future of Children, 23*(1), 117-136.

Wachowiak, G. M. 2015). *Dual enrollment experiences: Perceptions of readiness for postsecondary education* (Doctoral dissertation, Capella University). Available from ProQuest Dissertations and Theses Dataabase (UMI No. 3732521) Retrieved November 8, 2017 from https://search.proquest.com/openview/d819a4945177ff0190f7a30c98e7596a/1?pq-origsite=gscholar&cbl=18750&diss=y

Warne, R. (2017). Research on the academic benefits of the Advanced Placement Program. *Sage Open, Vol.7* (1). doi: 10.1177/2158244016682996

Wyatt, J. N., Patterson, B.F., & Di Giacomo, F. T. (2015). *A comparison of the college outcomes of AP and dual enrollment students*. (College Board Research Report). NY, New York: The College Board. Retrieved September 15, 2017 from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.939.4159&rep=rep1&type=pdf

Wyatt, J., Wiley, A., Camara, W. J., & Proestler, N. (2011). *The development of an index of academic rigor for college readiness* (College Board Research Report 2011-11). New York, NY: The College Board. Retrieved January 19, 2018 from https://eric.ed.gov/?id=ED561023

Zinth, J.D. (2016a, March 16). Dual enrollment: Definition or title of program. Washington, DC: U.S. Department of Education. Retrieved October 7, 2017 from http://ecs.force.com/mbdata/MBQuestRTL?Rep=DE1502

Zinth, J. D. (2016b, March 16). Dual enrollment: Mandatory or voluntary. Retrieved October 7, 2017 from: http://ecs.force.com/mbdata/MBQuestRTL?Rep=DE15

Zinth, J. D. (2016c, March 16). Dual enrollment: Where courses provided. Washington, DC: U.S. Department of Education. Retrieved October 7, 2017 from: http://ecs.force.com/mbdata/MBQuestRTL?Rep=DE1506

Zinth, J. D. (2016d, March 16). Dual enrollment: Who is primarily responsible for paying tuition? Washington, DC: U.S. Department of Education. Retrieved October 7, 2017 from http://ecs.force.com/mbdata/MBQuestNB2?Rep=DE1504

APPENDIX
Early Post-Secondary Opportunities Survey

1. Dear Participant:

My name is Ashleigh Norris-Shu and I am a doctoral candidate at East Tennessee State University. I am working on my Ed. D. in Educational Leadership. In order to finish my studies, I must complete a research project. The name of my research study is Undergraduate Student Perceptions of AP and Dual Enrollment in Relation to College Readiness.

The purpose of this study is to identify individual program components of AP and dual enrollment programs and their benefits. This could extend the research base concerning early postsecondary opportunities. I would like to give a survey to freshmen and sophomores enrolled at East Tennessee State University using Survey Monkey. It should only take about 10 minutes to finish. You will be asked questions about how components of AP and dual enrollment courses prepared you for college. Since this study deals with your perceptions of AP and dual enrollment programs, there are no foreseeable risks. You may also feel better after you have had the chance to express yourself about your experiences and how they prepared you for college coursework. This study may benefit you or others by improving the advisement process for potential AP and dual enrollment participants along with enhancing program experiences for program participants.

Your confidentiality will be protected as best we can. Since we are using technology no guarantees can be made about the interception of data sent over the Internet by any third parties, just like with emails. We will make every effort to ensure that your name is not linked with your answers. Survey Monkey has security features that will be used: IP addressed will not be collected and SSL (Secure Sockets Layer) encryption will be used. Although your rights and privacy will be protected, the East Tennessee State University (ETSU) Institutional Review Board (IRB) (for non-medical research), researcher, and committee members can view the study records.

Taking part in this study is voluntary. You may decide not to take part in this study. You may exit the online survey form if you want to stop completely. If you quit or decide not to take part, the benefits that you would otherwise get will not be changed.

If you have any research-related questions or problems, you may contact me, Ashleigh Norris-Shu, at zaen4@etsu.edu or my research advisor, Dr. Virginia Foley, at 423-439-7615. Also, you may call the chairperson of the IRB at ETSU at (423) 439-6054 if you have questions about your rights as a research subject. If you have any questions or concerns about the research and want to talk to someone who is not with the research team or if you cannot reach the research team, you may call an IRB Coordinator at 423/439-6055 or 423/439-6002.

Sincerely,

Ashleigh Norris-Shu

Clicking the AGREE button below indicates

- I have read the above information
- I agree to volunteer
- I am at least 18 years old

○ Agree

○ Disagree

2. Please identify your class standing.

- Freshman
- Sophomore
-
-

3. What is your major and/or concentration?

4. What is your current cumulative grade point average?

- ○ 0.0- 0.999
- ○ 1.0- 1.699
- ○ 1.7- 2.699
- ○ 2.7- 3.699
- ○ 3.7- 4.0
- ○ I am an incoming freshman and do not have a college grade point average.

5. Did you participate in Advanced Placement (AP) courses in high school?

- Yes
- No

6. Please indicate the number of Advanced Placements (AP) courses you completed.

- 1
- 2-3
- 4-5
- More than 5

7. Please rate the following components of Advanced Placement course in relation to preparation for college coursework:

	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
Accessibility of Instructor	○	○	○	○	○
Classroom Discussions	○	○	○	○	○
Lecture	○	○	○	○	○
Assignments	○	○	○	○	○
Test/Quizzes/ Essays	○	○	○	○	○
Overall Course Rigor	○	○	○	○	○

8. Please rate the following skills in relation to AP course participation:

	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
Note-taking	○	○	○	○	○
Study Skills	○	○	○	○	○
Working Independently	○	○	○	○	○
Time-management	○	○	○	○	○
Reading Complex Text	○	○	○	○	○
Writing	○	○	○	○	○

9. Did you participate in dual-enrollment courses in high school?

- Yes
- No

10. Please indicate the number of dual-enrollment courses you completed.

- 1
- 2-3
- 4-5
- More than 5

11. Please rate the following components of dual enrollment courses in relation to preparation for college coursework:

	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
Accessibility of Instructor	○	○	○	○	○
Classroom Discussions	○	○	○	○	○
Lecture	○	○	○	○	○
Assignments	○	○	○	○	○
Tests/Quizzes/Essays	○	○	○	○	○
Overall Course Rigor	○	○	○	○	○

12. Please rate the following skills in relation to dual enrollment program participation:

	Not Helpful	Slightly Helpful	Moderately Helpful	Very Helpful	Extremely Helpful
Note-taking	○	○	○	○	○
Study Skills	○	○	○	○	○
Working Independently	○	○	○	○	○
Time-management	○	○	○	○	○
Reading Complex Text	○	○	○	○	○
Writing	○	○	○	○	○

13. If you participated in both dual enrollment and AP courses, do you believe one program better prepared you for college

- Yes
- No
- I did not participate in both AP and dual enrollment courses.

14. Please provide a statement about why one program is more effective than the other in the box below.

15. If you would like to provide further information about how either Advanced Placement or dual-enrollment courses affected your preparedness for college coursework, please enter the information in the box below:

VITA

ASHLEIGH E. NORRIS-SHU

Education:	Ed.D. in Educational Leadership, East Tennessee State University, Johnson City, Tennessee, December 2018
	M.A. in School Counseling, East Tennessee State University, Johnson City, Tennessee, August 2006
	B.A. in Applied Psychology, Carson-Newman College, Jefferson City, Tennessee, May 2004
Professional Experience:	Assistant Principal, Tennessee High School; Bristol, TN, August 2018- Present
	Program Assistant, Tennessee High School; Bristol, TN, 2016-2018
	Professional School Counselor, Tennessee High School; Bristol, TN, 2008-2016
	Transition Counselor, Tennessee High School; Bristol, TN, January 2007 – January 2008
	Career Counselor, Tennessee High School Alternative School; Bristol, TN, 2006-2007