

A DUAL ENROLLMENT PARTNERSHIP BETWEEN COMMUNITY COLLEGES AND
HIGH SCHOOLS: A CASE STUDY

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this qualitative, instrumental, multiple case study is to answer the question – how does the dual enrollment partnership between the county public school system and the community college prepare students to be college and career ready? The twenty participants in this study are administrators, professors, academic counselors, business partners, and dual-enrollment alumni from two community colleges in Maryland. The data collection methods include one-on-one interviews with the participants, focus groups, and document analysis. Open coding of verbatim transcriptions was used to develop themes. The results of the study illustrate that the dual enrollment partnership helps students to be college and career ready through a curriculum sequence of courses which support a specific field of interest and through hands-on experience in the workforce. Although the course content was the same, professors observed a difference in attitude among students who took their college courses in their high school with those who took the same classes on a college campus. Students who took college courses while still in high school learned to manage their time and adjust to the expectations of college. Future research might consider if students who participated in dual enrollment are able to transfer their credits to a four-year degree, continued with the same field of study in college, or are employed in a field related to their degree.

Keywords: college access, dual enrollment, early college, career pathways, underserved students

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Dedication

To my parents, Frank and Dorothy Terranova, who passed away as I began my research, I know you are looking down from heaven and smiling.

To my children, Christina Elizabeth, Shannon Quinn, Frank John Lawrence, and Patrick Sean, you are my joy and my treasure. As you continue on your life journey, always remember that a dream delayed is not a dream denied.

God's blessings always.

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I thank you, God, my heavenly father, for blessing me along this journey - I was never alone.

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God’s blessings always.

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List of Abbreviations

Advanced Placement (AP)

College and Career Readiness and College Completion Act of 2013 (CCRCCA)

College Level Examination Program (CLEP)

Concurrent Enrollment (CE)

Dual Enrollment (DE)

Early College Access (ECA)

Early College High School Initiative (ECHSI)

Governor's Workforce Investment Board (GWIB)

Local Education Agency (LEA)

Science, Technology, Engineering, and Mechanics (STEM)

Socio-economic Status (SES)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this qualitative, instrumental, multiple case study is to explore the partnership between a county public school system and a community college that seeks to prepare students to be college and career ready through dual enrollment programs that offer career pathways to post-secondary education in Maryland. This study explores how administrators, counselors, instructors, a college, and the community cooperate to provide dual enrollment opportunities and career pathways for students to help them to achieve their post-secondary goals (Cross, 2017; Epstein, Galindo, & Sheldon, 2011). This qualitative study addresses a gap in the literature by considering the process of providing targeted dual enrollment opportunities for students through the lens of organizational learning theory and ecological systems theory.

Dual enrollment programs have been in place in Maryland for over a decade: rather than only offering high school students the opportunity to take courses that will fulfill general education requirements, a sequence of courses that can provide a pathway to a career has been instituted in at least one Maryland county. For dual enrollment programs to be successful, the cooperation of a variety of stakeholders is required. As part of the career and college ready initiative, these dual enrollment programs seek to attract students from low SES families, (socio-economic status), racial minorities, non-native speakers of English, and first-generation college students so they have an opportunity to earn college credit in high school and can transition to post-secondary education. This chapter provides background information on the impetus for cooperation between the community colleges and high schools, the interest of the researcher in this topic, the problem and purpose of the study, why it is essential for this study to be completed, the questions the researcher will seek to answer, and a list of definitions of the

specific terms used in the report.

Background

Initiatives by the Governor of Maryland to create jobs in, and attract jobs to, Maryland will require a workforce with post-secondary education (Office of Governor Larry Hogan, 2017). In order for students to be successful in the 21st century economy they will need post-secondary credentials and the Maryland State Department of Education, in conjunction with the Maryland Commission on Higher Education and the Governor's Office, has established a variety of initiatives that will afford students the opportunity to earn college credits at little or no cost to prepare them for the demands of the 21st century workplace (Hennenberger, Cohen, Shipe, & Shaw, 2016). Because participation in dual-enrollment courses is not mandatory, this study will explain how two school systems partnered with local community colleges to provide dual enrollment opportunities to students. The study will explore the challenges and successes of providing students a pathway to post-secondary education and a career.

Historical Context

Since 2000, approximately 20% of students have entered college unprepared for the academic rigor expected of them (Bettinger & Long, 2009; Shaw, 2014). The burden of remediation has fallen mostly upon community colleges that offer no-credit courses, predominantly in English and mathematics. Successful completion of these remedial classes is required before students may enroll in for-credit classes necessary to obtain a post-secondary degree. Remediation, however, could have the effect of discouraging students from furthering their education due to the increased time and cost (Bettinger & Long, 2009).

During the first term of the Obama administration (2009 – 2013), the Department of Education actively began to promote college and career readiness for all high school programs (An & Taylor, 2015). Many states responded to the call for increased readiness by expanding

their dual enrollment programs, which allows students to obtain credit toward high school graduation for college courses taken in-person or online. By 2012, 47 states had some form of dual-enrollment options available to high school students (An & Taylor, 2015). Dual-enrollment was not a new phenomenon in education because it dates back to the 1980s when local school districts reached agreements with community colleges on awarding both high school credit on a high school transcript and college credit, on a college transcript (Taylor, Borden, & Park, 2015).

In Maryland, the Governor's P-20 Leadership Council created task forces in Career and Technology Education (Career and Technology Education Task Force, 2009), College Success (P-20 College Success Task Force, 2010), and STEM (Governor's STEM Task Force, 2009) to improve the quality of education and make students college and career ready. Several years later, legislation was passed in the Maryland Senate that not only codified college and career readiness but mandated cooperation between the public-school system and community colleges through the establishment of Pathways to Degrees. Access grants were also made available to dual-enrollment students (Senate Bill 740, 2013) through the College and Career and College Completion Act (2013).

Maryland has a variety of dual-credit options for public, private, and home-schooled high school students that are available through articulation agreements with the community colleges throughout the state. In addition, community colleges in Maryland have an open enrollment policy for anyone 16 years and older, and under 16 years if a student qualifies for gifted and talented programs. The goal of the programs is to fulfill the vision of preparing a workforce for the 21st century not only for the best and brightest students, who have access to Advanced Placement courses and are expected to continue with post-secondary education, but to those who are facing obstacles. These obstacles include not speaking English as a first language, being a racial minority, coming from low SES households, or being the first in the family to seek a

college degree (Maryland Community Colleges, n.d.)

Social Context

The adjusted graduation rate for high school students has been steadily increasing since Academic Year (AY) 2010-2011 (McFarland et al., 2017). At the end of the 2014-2015 school year, the overall on-time graduation rate for high school seniors in the United States was 83% - in Maryland, it was 87% (McFarland et al., 2017). This overall number conceals a disparity in on-time graduation rate among different ethnic groups - blacks, 78%, Hispanics, 77%, and whites – 92% (McFarland et al., 2017). Despite this increase, minority enrollment in post-secondary education has not kept pace with the increased graduation rate with only 35% of Blacks and 37% of Hispanics enrolled in post-secondary education in 2015 (Musu-Gillette, de Brey, McFarland, Hussar, & Sonnenberg, 2017).

Maryland is a state of great economic contrast with one county in the top 10 wealthiest counties in the United States and an average household income of \$109,000 (Gidman, 2016) and an extremely poor county where the average household income is only \$38,500 (Frohlich, 2015). The cost of attaining a post-secondary education in both two-year and four-year institutions in Maryland has been increasing and, at the same time, exacerbating the problem for students at the lower end of the economic spectrum (Wells, 2016) and fewer students are seeking higher education. The workforce of the future will need a post-secondary education, however, given the 2017 jobs initiatives of Governor Hogan to bring high-tech and cyber-related jobs to Maryland (Anonymous, 2017). Dual-credit opportunities in high school will give underserved students the opportunity to begin their post-secondary education at minimal cost and offer a pathway to continued study after high school graduation with the anticipation that students will develop the skills necessary to fill the available jobs. This study will seek to add to the body of knowledge of dual enrollment by giving voice to all stakeholders and discover the successes and pitfalls of the

dual enrollment programs from the perspective of administrators, counselors, instructors, and the students.

Theoretical Context

Bronfenbrenner's (1974) ecological systems theory (Cross, 2017; Onwuegbuzie, Collins, & Krels, 2013) and Senge's organizational learning theory (Caldwell, 2012) provide the theoretical context for this qualitative multiple case study research. Bronfenbrenner's theory uses multiple layers of interaction to explain the developmental process (Cross, 2017) and the relationship between different settings (Bronfenbrenner, 1974). Bronfenbrenner describes the different systems that a child passes through as he develops into adulthood – the microsystem, mesosystem, exosystem, and macrosystem (Cross, 2017). For program development the microsystem is reflected in the curriculum offerings, the mesosystems are connections between administrators, counselors, and instructors in providing a dual-enrollment pathways curriculum, the exosystem is the relationship between potential employers and post-secondary institutions, and the macrosystem is the placement of a 21st century education that prepares students for college and careers (Tissington, 2008).

Senge's (2006) organizational learning theory examines the relationships among different systems. It examines the interrelationships of units and how units function as a whole, rather than how units function individually (Caldwell, 2012). It is important that all units in the system have a shared vision and function as lifelong learners to bring about positive change (Senge, 2006). The actions of one unit impact all the other units in the system. For positive change to occur, all units must work together for a common goal (Senge, 2006).

A Gap in the Literature

The quantitative literature on the subject of dual enrollment and college readiness (An, 2013, 2015; Cowan & Goldhaber, 2015; D'Amico, Morgan, Robertson, & Rivers, 2013;

Ganzert, 2014; Grubb, Scott, & Good, 2017; Kaniuka, 2016) shows that dual enrollment has a positive impact on low SES student achievement (An, 2013) and that students who participated in dual enrollment programs had a higher GPA after the first year of college than those who had not (An, 2015; Ganzert, 2014) participated in such programs. Students in technical programs, who took dual enrollment courses on college campuses, were more likely to persist until completion than other students (D'Amico et al., 2013). Also, students who participated in dual enrollment had lower rates of remediation than other groups of students (Grubb et al., 2017). There is little qualitative data that focuses on the role of stakeholders in the creation of dual enrollment programs with career pathways for students, particularly underserved students.

Situation to Self

My motivation for conducting this study was a desire to see as many opportunities for post-secondary education as possible be provided to all students. These opportunities are particularly important to those students who are under-served based on their race, ethnicity, economic status, and lack of support from parents and the school system. I recognized that there were many ways to obtain a post-secondary education that did not involve matriculating into a four-year university immediately after high school. Therefore, alternative means of obtaining college credit should be encouraged, especially for students with limited funds.

I was an Army officer before I was a professional educator and was fortunate to be able to attend a four-year university upon graduation from high school. At my first duty station, I noticed several enlisted soldiers studying for the College Level Entrance Program (CLEP) exams. After several conversations with my soldiers I learned that they had enlisted in the Army for the educational benefits because they had no means to attend college after their high school graduation. Passing grades on the CLEP would provide them with up to 30 college credits that would appear on an official college transcript and reduce the amount of time they would need to

earn a post-secondary degree. Decades later, one of my children attended a military boarding high school with a dual-enrollment agreement with a local community college. Based on the college credits she earned in high school, she was a second-semester freshman when she began her university education.

After retiring from the military, I became a foreign language teacher at a private, boys' high school. Although many AP courses were offered, they were not available to all students. For those students who did take AP classes, receipt of college credit was not guaranteed because many universities would only award placement rather than college credit for a passing AP score. To provide students the opportunity to earn college credit for upper-level foreign language elective courses, the French teacher and I presented our curriculum to the local community college with the goal of offering dual enrollment options to our college prep students for level three and level four foreign language classes. Although approved by the community college, a pilot program was not adopted by the high school principal, and students lost the opportunity to take a college course in high school.

The interpretive framework for the research is social constructivism. This paradigm has its origins in the writing of Vygotsky (Mertens, 1998). Creswell (2013) stated, "In social constructivism, individuals seek understanding of the world in which they live and work." (p. 24). Mertens (1998) added that "The interpretive/constructionist paradigm emphasizes that research is a product of the values of researchers and cannot be independent of them." (p. 11).

My research questions and design align with the ontological, epistemological, and axiological beliefs of a constructivist framework (Creswell, 2013). First, I will approach the research with the understanding that there is no one true reality, but rather multiple realities which are constructed by the lived experiences of the participants (Creswell, 2013; Mertens, 1998). The participants will describe their experiences with the dual enrollment program.

Second, I will interact with the participants so that I can explain the experiences of those involved with the dual enrollment partnership (Creswell, 2013; Mertens, 1998). Dual enrollment is one of several options available to students who wish to earn college credit before they graduate from high school. This program was in place before the Maryland legislature required articulation agreements between the community colleges and the high schools. My assumption is that the mandate resulted in more curriculum options for students in addition to more student participation in dual enrollment courses. Third, I acknowledge that I have a value system which underlies my research that will be interwoven with the value system of my participants (Creswell, 2013). As a parent of a student who benefitted from dual enrollment courses in high school, I understand the value of getting a head start on the journey toward obtaining a college degree. Finally, although I anticipate having ample dialog with my participants, the result of my research is to explain the experience of the participants rather than to interpret meaning from their experiences and to search for patterns of data (Mertens, 1998; Stake, 1995).

Individual high schools within the school system offer a varied curriculum, with specialty signature programs embedded within each high school. The study will explore the criteria used to determine the content and placement of the specialty programs, the reasoning behind the content and placement of the programs, and the outcome for students who participated in these programs. Students have a variety of options and may have different motivations for participating in dual enrollment programs.

Problem Statement

The problem is that the Maryland legislature recognized the need for a workforce with post-secondary education in order to fill anticipated future jobs, but while high school graduation rates in Maryland are on the rise, enrollment in post-secondary education is not. The ever-increasing cost of attending college has placed post-secondary education out of reach for many

students, particularly for those who are minorities, low socioeconomic status (SES), and first-generation attendees (American Association of Community Colleges, 2016). One of the mandates in Senate Bill 740 (2013), The College and Career and College Completion Act, requires community colleges to create articulation agreements with the school systems to offer to offer dual enrollment opportunities to high school students. The legislation did not dictate how this was to be accomplished.

Dual enrollment programs offer high school students the opportunity to earn college credit before they graduate high school at a significantly reduced cost (American Association of Community Colleges, 2016; An, 2013; Stephenson, 2014) and allows students the opportunity to acclimate themselves to college expectations while still living at home (Woodcock & Beal, 2013). Unlike Advance Placement programs which tend to attract the very brightest students and do not guarantee the awarding of college credit, dual enrollment provides under-served students, who are potentially at risk of dropping out of school, or not continuing with post-secondary education, a pathway to a college degree (Barnett, Maclutsky, & Wagonlander, 2015; Berger, Adelman & Cole, 2010).

Although there is a body of knowledge based upon quantitative research, (An, 2013; Cowan & Goldhaber, 2015; Grubb, et al., 2017; Martin, 2013) that indicates dual enrollment programs have a positive effect on underserved students and their ability to participate in college-level courses, there is little research that gives voice to those who have participated in these programs. This research will attempt to explain how administrators, instructors, and counselors in the K-16 systems, together with the business community, cooperated to provide dual enrollment opportunities and support a pathway to post-secondary study.

Purpose Statement

The purpose of this qualitative instrumental multiple case study is to explore the partnership between the high schools and a community college in Maryland and to describe how a variety of stakeholders created pathways for high school students to earn college credit in high school through dual enrollment programs and transition into a post-secondary environment to prepare them for the needs of the 21st century workplace. Dual enrollment, also known as early college access in Maryland, is defined as a program that provides students with college credits on a college transcript that are also used to satisfy high school graduation requirements (McDonald & Farrell, 2012; Zalaznick, 2015). The guiding theories for this study are Bronfenbrenner's (1974) ecological systems theory and Senge's (2006) organizational learning theory.

Significance of the Study

Empirically, the preponderance of current literature documenting the outcomes of dual enrollment for underserved students is quantitative in nature (An, 2013, 2015; Cowan & Goldhaber, 2015; D'Amico, et al., 2013; Ganzert, 2014; Grubb, et al., 2017; Kaniuka, 2016; Martin, 2013; Wang, Chan, Phelps & Washbon, 2015) and focuses on the impact dual enrollment programs have upon college completion and student persistence. Qualitative studies on dual enrollment focus on the perspective of administrators (Howley, Howley, Howley & Duncan, 2013; Pretlow & Patterson, 2015), student's perceptions of college readiness (McDonald & Farrell, 2012) or describe the advantages and disadvantages of a specific dual enrollment program (Woodcock & Beal, 2013). This study will attempt to explain the role of administrators, instructors, counselors, and business partners in developing and implementing dual enrollment programs that will place students on a pathway to career and college readiness.

Theoretically, few qualitative studies view the experience of the stakeholders in forming a pathway for student access, and success, through the lens of organizational learning and

ecological systems theory. The results of this study could add to the body of knowledge that explains how college officials in charge of creating and delivering academic programs, together with administrators and curriculum coordinators in the school system, can construct academic pathways that will lead to student success in the workplace and postsecondary education.

This study could have practical implications for both the community college and public-school systems as they continue to provide dual enrollment opportunities that fulfill the intent of the college and career legislation and prepare students for the 21st century workplace. Students and their families could potentially benefit from this study as it might offer new insights into the opportunity to acquire college credits at little to no expense. This research has the potential to support further the goal of the Governor of Maryland to train and educate the citizenry to be competitive in the 21st century workforce and to reduce the economic disparities that exist throughout the state where people do not have the skills necessary to fill the available jobs.

Research Questions

The central research question is: How does the dual enrollment partnership between county public schools and the community college prepare students to be college and career ready through dual enrollment programs that offer career pathways to post-secondary education? This question will explore Senge's (2006) theory by demonstrating how the partnership can achieve the goal more cohesively than if the organizations had acted alone. That is to say, that by coordinating curriculum offerings and requirements, a pathway to completion of a certificate, or college degree, is clear for students. This question is rooted in the Maryland Governor's P-20 Education Council's recommendation aligning the goals of education with the needs of business. The passage of the Career and College Readiness and College Completion Act has an emphasis on post-secondary education that includes certificate programs in addition to college degrees.

This research will also have five sub-questions that will guide the participants in sharing their experiences in forming, implementing, supporting, and participating in dual enrollment.

Sub-question one: How do curriculum requirements impact the academic schedule and support the career pathways initiative with dual enrollment? This question will examine the changes that were made at the high school and college level to accommodate dual enrollment opportunities and create pathways to completion (Salmon, n.d.) In the application of Bronfenbrenner's theory to program development, curriculum offerings are an aspect of the microsystem (Tissington, 2008). The student selects the courses and passes through the first phase of post-secondary education.

Sub-question two: How does the high school and college counseling process support dual enrollment programs? The expectations of college instructors and the demands of college classes are different from those in high school. This question is designed to explore the role of counselors in helping students understand their options and responsibilities in dual enrollment classes. In the application of Bronfenbrenner's theory to program development, the interaction of administrators, counselors, and instructors represent the mesosystem (Tissington, 2008). The shared vision of the stakeholders in support of dual enrollment can bring positive changes for the workforce in general, and the student in particular (Senge, 2006).

Sub-question three: How do instructors of dual enrollment courses describe their experiences teaching high school students in college courses? Although dual enrollment provides students the opportunity to take college courses while still in high school, they may not be accepted as traditional college students by their instructors (Kanny, 2015). This question is designed to explore the perceptions of instructors who teach high school students in college classes. In the application of Bronfenbrenner's theory to program development, the interaction of administrators, counselors, and instructors represent the mesosystem (Tissington, 2008). The

shared vision of the stakeholders in support of dual enrollment can bring positive changes for the workforce in general, and the student in particular (Senge, 2006).

Sub-question four: How does the local community partnership with the school system and college provide real-world opportunities to under-served students participating in dual enrollment programs? This question is designed to explore the opportunities that may become available to students who participate in dual enrollment career pathways classes. These external organizations are part of the exosystem as envisioned in Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1974).

Sub-question five: How do participants in dual enrollment programs describe the positive and negative impact of their experience on their post-secondary education? A positive aspect of dual enrollment is that students have the potential of earning a professional certificate or an associate degree along with their high school diploma which could prepare them for continued study at a four-year university or entry into the workforce. A negative aspect of dual enrollment is that students may discover their dual enrollment course credits do not transfer to a four-year university unless they have completed an associate degree (Ganzert, 2014). The macrosystem for a dual enrollment student can include a four-year university or the workforce. Applying Bronfenbrenner's (1974) ecological systems theory to program development, the question seeks to address the success of dual enrollment programs as students move on to a four-year university or the workforce.

Definitions

1. *Articulation Agreement* – Agreements between the local education agency and community college that explain the administration of dual enrollment courses. These agreements also include agreements for the forward transferability of credits earned at a

community college toward a four-year university and the reverse transferability of credits earned at a four-year university to a community college (Frank & Fitzgerald, 2015).

2. *College Readiness* – College readiness the level of preparation a student needs to be ready to enroll and succeed – without remediation – in a credit-bearing course at a two-year or four-year institution, trade school, or technical school (Durham et al., 2015).
3. *Concurrent Enrollment* - policymakers typically define dual enrollment as a college course that high school students take and for which they receive college credit upon successful completion (An & Taylor, 2015).
4. *Dual Credit* - policymakers typically define dual enrollment as a college course that high school students take and for which they receive college credit upon successful completion (An & Taylor, 2015).
5. *Dual Enrollment* - policymakers typically define dual enrollment as a college course that high school students take and for which they receive college credit upon successful completion (An & Taylor, 2015).
6. *Early College Access Programs* – programs which award eligible high school seniors both high school and college credit for certain, designated courses (Sunderman, n. d.).
7. *Underserved Students* – students who typically do not access post-secondary education opportunities because of their race, socio-economic status, lack of English language fluency or other challenges (Maryland Community College, n.d.; Schaefer & Lourdes, 2016; Webb, 2014).

Summary

To be competitive in the 21st century job market, students will need to acquire skills that are not part of the comprehensive high school curriculum. For minorities, low SES, and first-generation college students, cost and access may hinder their ability to obtain the necessary post-

secondary education. Dual enrollment programs provide one means to acquire this education. The problem is a lack of qualitative research that explains how dual enrollment programs are developed, gives a voice to traditionally underrepresented students who have participated in dual enrollment courses. The purpose of this qualitative multiple case study is to explain how a county public school and a community college prepare under-served students to be college and career ready through dual enrollment programs that offer career pathways to post-secondary education through the lens of Bronfenbrenner's (1974) ecological systems theory and Senge's (2006) organizational theory.

CHAPTER TWO: LITERATURE REVIEW

Overview

This study is based on the theoretical concepts of Bronfenbrenner's (1974) theory of ecological systems and Senge's (2006) theory of organizational learning. Bronfenbrenner explains the different systems a child passes through and Senge explains the relationship between those systems. Students who participate in dual enrollment are functioning between different systems – high school and college. Dual enrollment offers students the opportunity to earn college credit while still in high school. In effect, the students are transitioning into college students. While in dual enrollment classes, they are moving through the transition, and when they complete their education, they are moving on to a new phase. At the same time, dual enrollment is neither the norm nor a requirement for high school graduation, so many students will not experience this particular system. The literature provides an overview of the history of the formalization of dual enrollment opportunities in Maryland, explains the correlation between dual enrollment and student success with various models in quantitative studies, and gives the perspectives of various stakeholders such as administrators and guidance counselors.

Although there is a body of knowledge based upon quantitative research, (An, 2013; Cowan & Goldhaber, 2015; Grubb, et al., 2017; Martin, 2013) that indicates dual enrollment programs have a positive effect on underserved students and their ability to participate in college-level courses, there is little research that gives voice to those who have participated in these programs. The problem is the lack of qualitative research that supports how dual enrollment programs can fulfill student aspirations of obtaining post-secondary education for either personal fulfillment or to obtain skills necessary to compete in the workplace in a field of their choosing. This lack of research is especially true for students who come from low SES families, racial and ethnic minorities, non-native speakers of English, and first-generation college

students for whom it may be particularly challenging to function in the 21st century workplace. This study will address a gap in the qualitative literature that describes how a variety of stakeholders can come together to produce college and career ready students.

Theoretical Framework

Bronfenbrenner's (1974) ecological systems theory (Cross, 2017; Onwuegbuzie, Collins, & Krels, 2013) and Senge's organizational learning theory (Caldwell, 2012) will be used as the theoretical context for this qualitative multiple case study research. Bronfenbrenner's theory uses multiple layers of interaction to explain the developmental process (Cross, 2017) and the relationship between different settings (Bronfenbrenner, 1974). Bronfenbrenner describes the different systems that a child passes through as he develops into adulthood – the microsystem, mesosystem, exosystem, and macrosystem (Cross, 2017). For program development the microsystem is reflected in the curriculum offerings, the mesosystems are connections between administrators, counselors, and instructors in providing a dual-enrollment pathways curriculum, the exosystem is the relationship between potential employers and post-secondary institutions, and the macrosystem is the placement of a 21st century education that prepares students for college and careers (Tissington, 2008).

Senge's (2006) organizational learning theory examines the relationships among different systems. It examines the interrelationships of units and how units function, rather than how units function individually (Caldwell, 2012). A new mindset is necessary to understand systems thinking, and it begins with feedback. One must "see interrelationships rather than linear cause-effect chains and see processes of change rather than snapshots" (Senge, 2006, p. 73).

Related Literature

The National Commission on Excellence (1983) highlighted short comings in the educational accomplishments of American high school students. Not only were test scores on

the decline, but there were also fewer enrollments in mathematics, science, and foreign language classes. In addition, fewer students were attending post-secondary education, and the result was students were arriving in the workplace without the skills needed to do their jobs. This problem was also noticeable in Maryland. The response to this crisis was to change the high school graduation requirements and focus on programs that would provide opportunities for students to obtain career and technical training in addition to post-secondary education.

Historical Context of Educational Reform

The National Commission on Excellence (1983) noted that students graduating from high school were neither prepared for college nor the workforce. Students in a general education track had 25% of their coursework in physical education and health electives, remedial English and mathematics, and non-academic electives (National Commission on Excellence, 1983). From 1964 to 1979, the percentage of students in general track versus vocational or college preparatory track classes grew from 12% to 42% (NCE, 1983). The 350% increase in students who were neither prepared for a technical trade nor had the academic skills necessary to be successful in college was alarming. To compete with other developed nations, a change in the expectations of a K-12 education system would be necessary.

Recognizing a problem with state graduation requirements, Maryland instituted changes in the curriculum to obtain a high school diploma and then began a long-term study to assess the effects of the change on student readiness for the workplace or further post-secondary study. Although no additional credits were required to earn a diploma, the number remained at 20, the number of electives was reduced from eight to five when the state required three mathematics credits, vice two. It also added a requirement to take one credit in fine arts and one credit from a choice of computers science, home economics, industrial arts, technology, or vocational education (Rossman, Wilson, D'Amico, & Fernandez, 1987). In addition, high school seniors

were required to take at least four credits and the ability to graduate high school in less than four years was eliminated, although early college admission provisions remained in place (Rossman, et al., 1987). Three state competency tests – functional mathematics, citizenship skills, and writing - were added to the functional reading exam as a high school diploma requirement.

Other features of the reform in Maryland high school diploma requirements included the creation of a Certificate of Merit and the elimination of the job entry training program. These significant changes in the curriculum were the result of the creation of a Certificate of Merit included requirements to take a third science class, level two or above in a foreign language, twelve credits in advanced courses, and earn a 2.6-grade point average on a 4.0 scale (Rossman et al., 1987). Although this moved students toward more rigorous course standards with the hope of preparing students for the demands of post-secondary education, the job entry training program - also available at comprehensive high schools - was eliminated as an alternative to a four-year diploma. In doing so, a path to employment for skilled labor was eliminated as an educational option for Maryland students.

Parnell (1985) pointed out that there were many forms of excellence in education and that schools should not be measured by the number of National Merit Scholarship winners it has each year but how they developed individual excellence and prepared students for their post-secondary experience be it the workforce, a community college, or a four-year degree program. The transformation of the US from an agricultural economy to a manufacturing one took about a century to complete (Parnell, 1985) but the transformation from a manufacturing economy to one heavily reliant upon electronics and computer technology occurred at a rapid pace. According to projections from the US Department of Labor (1984), the fastest growing occupations during the period 1982 - 1995 were in the computer industry and engineering. By 2017, these occupations were replaced by those in energy and health (US Bureau of Labor Statistics, 2017) as the fastest

growing occupations from 2016 – 2026. As the US economy moves toward one where technical skills are imperative, the need for students to pursue vocational or post-secondary training is even more important than Parnell believed in the 1980s.

A second concern regarding the workforce in the 1980s was the high school completion rate. On a national scale, the completion rate dropped from 77.2 % to 72.8 % between 1977 and 1982 (Parnell, 1985). The completion rate for minorities was worse for Blacks and Hispanics of whom only 64 % and 60 %, had earned a high school diploma by the time they were nineteen years old. The Maryland reforms for high school graduation, which eliminated the jobs entry training programs in high schools, did not address the issue of drop-out rate. With an emphasis on more stringent academic requirements for graduation, and the institution of a Certificate of Merit to accompany the high school diploma, what became of the marginal academic student? The statistics indicate that they did not fare well with the new requirements and that minorities were particularly susceptible to dropping out of school.

This result should not have come as a surprise to educators. A 1984 report on raising standards and reducing dropout rates highlights four components that are necessary to keep marginal students in school – separate potential dropout from other students, focus on vocational training, provide experiential learning, and maintain small class sizes (Hamilton, 1984). The state did not do anything to enhance the school experience for students who would be better served by learning a marketable skill, while at the same time it was strengthening the credentials of the best students. By insisting that all students follow a prescribed academic sequence of courses, those without the desire to pursue post-secondary education were able to legally leave school at 16 without training to prepare them for the workforce. Perhaps educators were unwilling to adopt a European-style tracking system, such as the German system which separated

students into various paths as early as grade six, but it did produce skilled laborers for available jobs who apprenticed until they were 18-years old (Hamilton, 1984).

Parnell (1985) believed that educators sorted students into the academic or vocational pipelines rather than provide an opportunity to learn the competencies necessary for a successful educational experience that would prepare students for a career or post-secondary education. The Maryland reforms did not seem to address this problem, either. Thirty years later, although the graduation rates for all students had improved to 83% in the aggregate, Blacks (75%) and Hispanics (78%) lagged behind Whites (88%) in earning a high school diploma (National Center for Education Statistics, n.d.). In Maryland, the high school graduation rate is higher than the national average (87%), but the gap between White (92%) and Black students (82%) and White and Hispanic students (77%) has grown larger (National Center for Education Statistics, 2017).

The goal of a better-educated workforce does not rely on the number of graduates from four-year institutions of higher learning. In fact, it was the community colleges and junior colleges that received particular attention in the Truman Commission report as a way to provide post-secondary training (Gilbert & Heller, 2013). Truman's goal for post-secondary education was to remove barriers which often prevented lower income, minority, and female students from gaining access to academic opportunities (Dongbin & Rury, 2007). Changes in the various laws led to an explosion in for-credit enrollments in two-year community college from 108,000 in 1944 to almost five million in 1984 (Parnell, 1985). This enrollment figure increased to nine million when students taking non-credit classes were included.

With their focus on improving post-secondary education, community colleges needed to be evaluated through the lens of opportunities for excellence. Parnell (1985) developed five criteria for community colleges that would have to be met to achieve that goal – be community-based, be cost-effective, provide a caring environment, have competent faculty, and

have a comprehensive program in liberal arts and technical education. Reforms did begin to take place to address the issues of excellence. One example is found in the changes instituted by a community college in Illinois. The school first reviewed the needs of the 760,000 members of the community it served and determined that the focus of the educational programs of the college should be pre-baccalaureate education, technical and occupational education, remediation and developmental programs, and community services (Eldersveld & Stabler, 1985). The goals were to deliver an education that was equal to, or exceeded, the education standards of the first two years at a four-year university for those who transferred to a four-year institution. Students in technical programs would follow a program of study that would provide workplace skills (Eldersveld & Stabler, 1985). The fundamental change in curriculum was a shift from departmental requirements to the establishment of a college-wide core curriculum.

A second example of reform is found in the transformation of a community college system in southern Florida. In 1987, the American Association of Community and Junior Colleges published its findings on the growth of Dade County Junior College from 1960 to 1985 highlighting how the college responded to the growing and changing nature of the population in the Miami-Dade area. In a 25-year time span, the college reached out to a community with three distinct populations, none of whom were a majority (Roueche & Baker, 1987). The college offered programs that would lead to employment in the community, especially in the health sciences, opened regional centers to be more accessible to students, and initiated distance learning through televised courses. In addition, programs were available to high school students not only to cultivate an interest in post-secondary education but to keep the best students in the area (Roueche & Baker, 1987). Thirty years later, the standards for excellence in community colleges has shifted. Although there is still a focus on serving the community, more emphasis is placed on completing a two-year degree or a professional certificate, improving student learning,

employment, and wages, and improving the success rates of traditionally underserved students – low-income, Blacks, Hispanics, and Native Americans (Wyner, 2012).

Dual Enrollment and the Completion Agenda

The community college should not bear full responsibility for college completion in an era when dual enrollment opportunities are pervasive throughout the US. In order to graduate, students must first enroll, therefore it is incumbent upon both high schools and the colleges to reevaluate their curriculum requirements to create pathways for success for students who choose to take advantage of the opportunity to start college before they graduate from high school (Karp, 2015). One of the advantages of dual enrollment is that students who are traditionally under-represented in post-secondary education have an opportunity to take college courses before they graduate high school. To be successful in these classes, however, a high school must prepare students to work at a higher academic level not merely offer the opportunity to take college courses. This provides an opportunity for a partnership between the high schools and the community college to change the way the curriculum is offered (Karp, 2015).

Another factor to consider is the quality of the faculty that delivers dual enrollment courses. It is in the interest of the community college to have highly qualified faculty teaching dual enrollment classes with rigor equal to the expectations of traditional-age college students (Jones, 2017). This quality might be accomplished by only allowing college faculty to teach dual enrollment courses. If dual-enrollment courses are perceived to be less rigorous than an equivalent college course, it may not be accepted as a credit course should a student choose to transfer to a different college (Jones, 2017). Students could become discouraged with this outcome and not continue with post-secondary education (Karp, 2015).

There are quantitative studies that suggest dual enrollment does not reduce the inequities that exist in the completion of a bachelor's degree by minority students (An, 2013).

Nevertheless, students from racial minority groups or low-income households are still more likely to enroll in college if they participated in dual enrollment courses in high school than their peers who did not take dual enrollment classes (Taylor, 2015). Taylor's study (2015) does not address the completion rate for an associate degree which suggests that community colleges might have a crucial role to fulfill and the completion of an associate degree might be a better indicator of post-secondary success.

Higher Education in Maryland

A renewed debate on how to restructure and reform education in Maryland had its unlikely origins in the 2008 findings of the Governor's Workforce Investment Board (GWIB). The board had the responsibility for developing strategies that would prepare residents for the demands of the 21st century workplace and would bring all stakeholders together, particularly those in education, to work towards an implementation plan (Governor's Workforce Investment Board, 2008). The P-20 Education Council was created, based upon the Board's recommendation with the goal of aligning education at all levels with the needs of business in the state. The goal of developing STEM programs was embedded in the recommendations. A STEM Taskforce was created, and further recommendations again focused on aligning the curriculum from preschool through high school with the requirements for college admission and success and workforce development (Kirwan & Streckfus, 2009). Although the focus was on STEM education, the report made clear that education at all levels needed to reflect the labor force needs of the state. A new emphasis was also placed on internships to ensure college and career readiness, which would put students into the workforce, where they could gain real-life skills needed when they transitioned out of higher education and into the world of work (Kirwan & Streckfus, 2009).

Less than five years later, Maryland moved beyond the emphasis in STEM to prepare students for the 21st century workplace with the passage of College and Career Readiness and College Completion Act of 2013 (Frank & Fitzgerald, 2013). The emphasis is now on moving students into post-secondary education and completing a certificate or degree program. Numerous strategies for completion became available to students with the legislation, but the students most affected were from low-income households, which are predominately minority households where English may not be the first language spoken, and the student may be a first-generation college attendee. Options for students seeking a post-secondary education include traditional dual enrollment, early college high school, traditional transfer programs, and reverse transfer programs (Frank & Fitzgerald, 2013). To encourage and facilitate enrollment, a variety of funding programs have brought the cost of post-secondary school completion within reach of many students.

The legislation required community colleges to establish articulation agreements with public school systems but did not specify the details of what programs were to be established or how much tuition to charge students who had not graduated high school (Sunderman, n. d.). This lack of guidance allows for flexibility among programs to respond to local needs. For example, one school close to a large military base incorporated a program in Homeland Security that was already offered in the local community college (Anne Arundel Community College, n.d.; Meade Senior High School, n.d.). Nevertheless, the concern with college completion is justified because there had been an overall decline in college enrollment in Maryland and coupled with a decline in SAT scores, the indication is that the decline in completion may be associated with a decline in college readiness (Sunderman, n.d.).

There is an overlapping interest in the P-16 educational system where students should be college and career ready upon completion from high school and the emphasis on degree

completion at the post-secondary level. As of December 2016, however, the data indicate that many students taking advantage of opportunities to earn college credit while in high school are white, female, non-FARM eligible students (Hennenberger et al., 2016). This data cannot be explained by a lack of funding as scholarships and grants are available to students, and in the case of dual enrollment, there is a possibility that students can attend the community college with a 100% waiver of the cost of tuition (Maryland Association of Community Colleges, 2017).

General Overview of College Readiness in Maryland

College and career readiness have been a concern in Maryland for quite some time, but it came to the forefront with the publication of the report of the Governor's P-20 Taskforce. In addition to acknowledging that fewer students were completing two and four-year degrees, more and more students were entering college unprepared for the rigor of college courses and had to take remedial classes before they could enroll in for-credit classes (P-20 Task Force, 2010). This problem reflected on what was happening across the country and was not limited to minorities. In 2006, over half of the students entering a two-year college required remediation (Duncheon, 2015) and almost one-fifth of all students entering a four-year college needed to remediate at least one-class (Duncheon, 2015).

Although African Americans had the highest remediation rates, 67.7% in two-year colleges and 39.1% in four-year colleges, almost half of the white students attending two-year colleges and over 13% who attended four-year colleges were required to remediate at least one course (Baker, Harris, & Silverman, 2013; Duncheon, 2015). All community colleges in Maryland had students who required remediation as did all public universities in the state (Baker et al., 2013). Of concern was Baltimore City Community College, which had over 70% of its predominately African American student body taking at least one remediation course.

To reverse this trend, the Baltimore Education Research Consortium (BERC) partnered with the Johns Hopkins University, Morgan State University, and the Baltimore City Public Schools to research this problem to develop strategies that would both keep students on track to graduate high school on-time and to decrease the drop-out rate among high school students (Durham et al., 2015). The researchers then began to investigate the post-secondary activity of students, which included college enrollments. Although a review of six years of data from 2007 and 2012 indicated a percentage increase in high school graduation rates, four-year college enrollments declined as more students began their post-secondary education in community college (Durham et al., 2015). The data on college readiness is not unique to Baltimore City. Studies in California highlight a problem with college readiness not only among African-American minorities but among Southeast Asian students, as well (Duncheon, 2015).

Agreement on what constitutes college-readiness also is up for debate. The focus on test scores is pervasive (Duncheon, 2015; Edmunds et al., 2017), but three other factors should be considered when determining college readiness: the academic preparation the student receives in high school, student behavior, and an understanding of the college application and enrollment process. A strong academic foundation in mathematics and reading will reduce the need for remedial coursework before full matriculation in college. Students with a solid work ethic are more likely to complete course requirements and knowing how to navigate the college enrollment process will minimize the frustration of dealing with administrative roadblocks before the start of classes.

The trend in academic preparation for high school students has been one toward a college prep curriculum for all (Edmunds et al., 2017) and changing the mantra from “college ready” to “college and career ready” (Duncheon, 2015). The BERC researchers understood college ready to mean that students did not need to take remedial coursework in mathematics, English, or

reading to be successful in college (Durham et al., 2015). The Maryland Department of Legislative Services noted a deficiency in the mathematics requirements for graduation because the requirement could be completed by the junior year of high school (Baker et al., 2013). A manifestation of this problem is found in the remediation rate of Baltimore City high school students, 97% of whom were required to take a remedial math class before they could enroll in for-credit coursework at Coppin or Morgan State University and Baltimore City or Baltimore County Community College (Durham, 2015). This does not bode well for eventual college completion because on a national level, according to the Department of Education, only 27% of students who entered college and needed a remedial course in mathematics went on to earn a college degree (Bonner & Thomas, 2017).

The second component of college readiness is student behavior which cannot be quantified through a test score, but it can be observed. Persistence is an essential issue in college, and the statistics indicate that less half of all students who enroll in post-secondary education complete their programs in 150% of the average time (two and four-year programs) and many never complete any program (Duncheon, 2015; Edmunds et al., 2017). A good work ethic and time-management skills are also part of college readiness as is the ability to work with others (Bonner & Thomas, 2017; Duncheon, 2015; Governor's P-20, 2010). Students also need to develop self-advocacy skills to navigate through the college experience and seek help, when needed rather than skip class or drop a course (Edmunds et al., 2017).

The third area of college readiness is having the logistical awareness to navigate the college admissions and enrollment process which is sometimes referred to as "college knowledge" (Duncheon, 2015). Baltimore City Schools has made "college knowledge" part of its plan to increase the career and college readiness of its students (Durham et al., 2015). The Governor's P-20 Council recommendations emphasize the importance of having students

understand the financial aid process so that students from low-income families, racial and ethnic minorities, non-native speakers of English, and first-generation college students understand the financing that is available to fund post-secondary education (Edmunds et al., 2017). Another aspect of college knowledge is understanding that student expectations are higher than in high school, particularly regarding the timeliness and rigor of written work (Duncheon, 2015).

The issue of college and career readiness seems to put the burden of preparation on high school teachers. This issue begs the question of why there are so many students in need of remediation before they are permitted to enroll in for-credit coursework in two and four-year colleges. It appears that something is missing in either the content of the high school curriculum or the rigor of the high school curriculum. Perhaps it is both and that the pressure to move students along, regardless of their proficiency, solves an immediate problem but in the long term, students are harmed when they have been issued a diploma but are lacking basic skills to continue onto post-secondary education without remediation. If the statistics put forth in the report by the Legislative Services Policy Analysis Office in Maryland are an indication of the college readiness of Maryland high school seniors in general, and Baltimore City graduates in particular, more students will need remediation in the future if they chose to pursue post-secondary education.

Dual Enrollment Models

The first early college high schools took place in the 1970s at Bard College at Simon's Rock in Massachusetts and LaGuardia Community College of the City University of New York. The goal was to provide gifted students the opportunity to get a jump start on college before they received a high school diploma. Although the Bard College website states that financial aid is available, at \$66,000 for tuition, room, and board, the school is unlikely to attract students from lower-income families, minorities, non-native speakers of English, and first-generation college

attendees. Subsequently, Bard College has partnered with several public-school districts to create Early College High Schools for motivated day students who can earn an Associate Degree with their high school diploma (Botstein, 2003). The Bard network of public-private partnership has developed in low-income areas, such as Baltimore, to give motivated students an opportunity to earn a no-cost degree.

LaGuardia's Middle College program also dates back to the 1970s. In its current configuration, students enter the program in cohorts and take college-level classes, some of which are only for high school students, others are regular college classes. Students can earn an associate degree within five years of starting high school. It is free and does attract some students who might not have considered post-secondary education due to cost. To offer students who are non-native speakers of English the opportunity of a college experience, The International High School was opened on the LaGuardia Community College Campus (Dubin, 2017). Both schools provide small classes with a great deal of structural support not found in the typical comprehensive high school in New York City.

More recent initiatives in New York State include the Smart Scholars program. Rather than placing a high school on a college campus, the Smart Scholars program establishes schools within a school, or academies, where students progress in a cohort (Barnett et al., 2015). Qualified high school teachers teach college-level courses in the high school. This model removes the barriers to participating in college courses in high schools faced by low-income students and other at-risk minorities because they do not have to be concerned with transportation issues getting to the college campus. This arrangement fosters coordination between the high school and the sponsoring post-secondary institution (Karp, 2015).

Dual enrollment opportunities for high school students exist under different names and different methods of delivery. Dual enrollment provides an opportunity for colleges to interact

with students in an academic setting before they have graduated from high school (Karp, 2015). Dual enrollment students could be taking classes in a face-to-face setting at their high school or on a college campus, or the classes could be taken online. In the context of preparing more students to be college and career ready, it can be argued that dual enrollment opportunities must be made available to more students, particularly those in lower income households, racial and ethnic minorities, non-native speakers of English, and first-generation college students. There is no national model for dual enrollment options, however individual states have used several models to implement some form of dual enrollment.

Lee's Summit, Missouri launched an innovative dual enrollment program designed to give students the opportunity to earn both college credit through dual-enrollment courses and work experience through internships (Azimzadeh & Rollins, 2015; The Missouri Innovation Campus, n. d.). Students apply to the program during the 10th grade and if accepted, move to the classroom space of the Summit Technology Academy at Metropolitan Community College. Several programs in engineering and computer science are available for a student to earn high school and college credit. In addition, students begin internships with corporate sponsors of the program. Students who complete the program earn an associate degree in spring of their first post-secondary year and a bachelor's degree after their second post-secondary year (Azimzadeh & Rollins, 2015; University of Central Missouri, n. d.).

The program in Lee's Summit opened in the Fall of 2014, and the first cohort has not yet completed the requirements for an associate degree. A unique feature of this program is the work requirement of 40 hours a week for three consecutive summers. Although this program allows participants to earn an associate degree at no cost and a bachelor's degree at a reduced cost, this program targets well-above average students in a college preparatory curriculum. A

hindrance to participants is the requirement to provide their own transportation to the work location in addition to having a computer and internet access.

North Carolina experimented with placing high schools on the campuses of four-year colleges. An example is found at Fayetteville State University, where Cross Creek Early College High School was intentionally placed to draw on the student population in this high poverty area where over 56% of the students receive free and reduced-price lunch (Kaniuka & Vickers, 2010). This school offered only honors-level classes in the high school curriculum and allowed students to enroll in selected college classes (Edmunds, 2012). Although it was possible to earn up to 60 college credits with a high school diploma (Kaniuka & Vickers, 2010), an associate degree was not offered.

Growth in dual enrollment programs in Michigan was a result of policy reforms and changes in high school graduation requirements. The Michigan Merit Curriculum, which was implemented in 2007, fundamentally changed the focus of high school studies to be college preparatory in all high schools (Jacob, Dynarski, Frank, & Schneider, 2017). One model allows students to continue in high school for a fifth year while taking college courses offered in the high school (Higgins, 2015). Enhanced dual enrollment systems offer students the opportunity to earn 12 college credits by the end of the 12th grade through a structured sequence of courses and support through “companion courses and tutoring” (Barnett et al., 2015). The third innovation in Michigan is directed toward STEM education with pathways in place to earn 12 college credits (Michigan Department of Education, n.d.).

Dual enrollment programs in Missouri, North Carolina, and Michigan did not evolve in isolation. It is interesting to note that dual enrollment programs emerged with a concurrent change in the high school curriculum. Several of the changes included requiring more mathematics classes to graduate with a high school diploma, requiring chemistry or physics in

addition to biology to complete the science requirements, and transforming all high school classes to honors courses. With such significant changes to the curriculum, it might be reasonable to inquire if the changes alone added to student readiness for college and did all students benefit equally from the changes. Although these programs provided the opportunity to earn college credits in high school, only one of the programs was explicitly geared toward degree completion, and that was not guaranteed. Also, the literature does not address the question of what happens to students who do not pass the dual enrolled college class and what effect this might also have on the high school transcript.

The passage of the Maryland Career and College Readiness Act in 2013 required the 16 community colleges throughout the state to develop partnerships with all county public school systems and Baltimore City. The result is a variety of dual enrollment options throughout the state that includes Early College High Schools with specialized programs in fields such as technology and medicine, and certificate programs for logistics and cyber security that are embedded in the high school. In each case, the college courses are taught by qualified college teachers. Although there are specific requirements for dual enrollment or the early college programs, students who are 16 years old may enroll in any community college on their own and still pay reduced (or no) tuition. These students will not receive dual enrollment credit unless approved by the administration of their home high school, but it does provide an opportunity for low-income students to earn college credits at a significantly reduced cost.

Dual Enrollment – Maryland Models

As is the case in other states, Maryland employs several models of dual enrollment which lead to transferable college credit, professional certificates, or an associate degree. The College and Career Readiness Act required cooperation between the colleges and the school system but did not specify how programs were to be implemented. Programs developed across the state in

response to the needs of the community, and the result was a combination of early college high schools physically located on the community campus; early college high schools separate from the community college campus; early college programs where students take some courses on their high school campus and then transition to the community college for their junior and senior year of high school; and pathway programs offered on the high school campus where the dual enrollment courses transfer to the community college, fulfilling requirements for professional certificates or an associate degree.

Prince George's Community College. Prince George's Community College, located just beyond the limits of the District of Columbia, partnered with the county public school system to create a middle college for grades 9 – 12 on its campus. With a focus on the health sciences, the school enrolled its first cohort of 100 students in 2011, with a goal of enrolling 100 students each consecutive year until the target enrollment of 400 students was met (Dukes, 2015). Approximately one-half of the students are low-income and first-generation college attendees. The retention rate for the first cohort was 92%, with 98% of the students receiving their associate degree along with their high school diploma (Dukes, 2015).

Although the community college is an open-access campus, admission to the Middle College program is by exam, recruitment, and the successful completion of a summer bridge program between the 8th and 9th grade (Prince George's Community College, n.d.). The decision for the Middle College to focus on the health sciences evolved from other curriculum changes as the college moved to more hands-on experiences in the classroom (Boerner, 2016). Under the leadership of the dean of the Health Sciences Division, who began her career as a radiographer, classroom instruction transitioned from lecture to discussion, individual activities, and hands-on experiences. These changes were facilitated by using a flipped model classroom where students would watch lectures before they came to class and then put the material into practice.

Other curriculum changes were instituted to align the degree requirements with the accreditation standards (Boerner, 2016). Maintaining high standards is essential for the dual enrollment students in the Middle College who will have to demonstrate their competence in the health science workplace or compete for a seat in a four-year university to complete their bachelor's degree. It appears that the community college was successful with its first cohort of students based on the \$9 million in merit scholarships its dual-enrollment high school students received to continue their education (Dukes, 2015). In addition, the school received corporate sponsorship from the Bank of America and NBC₄ Universal and opened a second middle college in Information Technology (Boerner, 2016, Dukes, 2015).

Hagerstown Community College. The first community college in Maryland opened its doors in 1946, held classes in the evening at Hagerstown High School, and graduated 25 students in its first cohort (Hagerstown Community College, 2017). The college opened on its own campus in 1966 with almost 800 students. Hagerstown Community College developed a unique partnership with industry and the government in 1990 in response to the economic downturn in an area dependent on agriculture. The college, located near the Interstate 270 corridor with easy access to both Washington, D.C. and Baltimore, was well-positioned to try an innovative approach to workforce development and technical education. The result was the creation of the Advanced Technology Center which provided training and technical assistance to local companies seeking to modernize their businesses and to outside firms wanting to relocate to the Hagerstown area (Regional Technology Strategies, 2001). The center also directs programs in engineering technology and has an advisory committee of business leaders, educators, and regional economic developers (Regional Technology Strategies, 2001). The benefit to the students is the ability to study real-world businesses and to have access to modern equipment.

With the state model for community college and business partnership in place, the transition to the STEMM Technical Middle College at Hagerstown Community College was a logical one. In addition to the science, technology, engineering, and mechanics focus of traditional stem programs, Hagerstown offers a variety of options in the medical field such as pre-nursing, pre-medical, pre-radiology, and pre-pharmacy (Meyer, 2013). The college is intentional in recruiting students with a process that begins with the eighth grade and continues through the tenth grade. Middle college students attend classes on the Hagerstown Community College campus during their junior and senior year of high school, where they may complete an associate degree (Anonymous, 2017).

Howard Community College. Located in the wealthiest county in Maryland, and one of the ten wealthiest counties in the country (Janney, 2017), Howard Community College developed a partnership with both the county public school system and a business partner, Secure Innovations, to offer dual enrollment courses in cybersecurity. Secure Innovations provides students with internships and hands-on coursework in network mapping, coding, and web testing (Schiller, 2016). Students enter the early college cybersecurity program in the tenth grade and the following year attend the Applications and Research Laboratory where they take four community college classes. During their senior year of high school, students take all classes on the main campus of Howard Community College and participate in internships. When they earn their high school diploma, they may also have accumulated as many as 40 college credits (Homan & While, 2017).

Dual Enrollment – Persistence and Motivation

Although a general education high school diploma is no longer sufficient to meet the demands of the 21st century workplace, post-secondary education cannot be achieved if students do not enroll in a program (Karp, 2013). Students who take advantage of dual enrollment

programs in high school may be able to accumulate sufficient college credits to earn a professional certificate or an associate degree. This may serve as a motivating factor for students, but it can also be a motivating factor for school systems to partner with colleges so that students stay engaged in their education during their final year of high school (Chumbly, 2016; D'Amico, et. al. 2013; Wang, et. al., 2015). From the community college perspective, the academic partner in almost all dual enrollment programs, there is motivation to see that students will continue their post-secondary education as credential completion becomes more critical than course enrollment (Karp, 2015).

It is also important to acknowledge that a four-year degree is not necessarily the goal for all students. Although initially dual enrollment was a means to keep high-achieving students engaged in high school and provide the opportunity to acclimate themselves to the college environment before matriculating as full-time students (Dare, Dare, & Nowicki, 2017), over time dual enrollment provided an opportunity to low SES students, minorities, and first-generation students to access college courses (An, 2015). In the current economic environment, however, more students are seeking professional certificates, technical degrees, or internship possibilities (Wang et al, 2015) that are offered through community colleges. For students in rural and agricultural communities, dual enrollment programs leading to professional certificates can provide workforce credentials or a pathway to a degree (Chumbly, 2015; D'Amico et al., 2013).

Dual Enrollment – Stakeholders Perspectives

Dual enrollment programs are designed to benefit students, but this does not happen without input from a variety of stakeholders such as teachers, counselors, administrators, and parents. The success of the programs also depends on the students themselves. The voice of all parties needs to be heard to evaluate the positive and negative aspects of dual enrollment to

ensure the college courses have sufficient rigor to form the groundwork of post-secondary education and that the students have the maturity to undertake college studies.

Policy environment. There is no national policy on dual enrollment that requires institutions of higher learning to accept the transfer of dual enrollment credits when students matriculate into a four-year program. State institutions set their own policies, and there are sometimes inconsistencies among institutions in the same state. Two examples of different policy approaches on the part of four-year post-secondary institutions can be seen in Ohio and Virginia. Although both states have provisions for high school students to earn credit toward high school graduation and credit for college for specific courses, which may be taught either at the high school or on a college campus, they differ on who provides the instruction (Pretlow & Patterson, 2015).

Ohio permits competition for the dual enrollment student by allowing different colleges to offer courses. The colleges can be two-year or four-year, public or private, institutions (Pretlow & Patterson, 2015). The cost to the student varies and depends on the articulation agreement between the high school district and the post-secondary institution. Ohio University Lancaster has been offering college courses in the local high schools at no cost to students who meet the admission criteria since 2012 (Anonymous, 2012). Not all school districts push the dual enrollment options for their students because they must use state funds to reimburse the post-secondary institutions (Farkas, 2014). Although there is no state-wide standard on how dual enrollment is handled at the high school level, there are clear guidelines regarding the transfer of the credit earned to all public post-secondary institutions in Ohio. The universal course equivalency provides details of the articulation and transfer policy (Ohio Higher Ed, n.d.), lifting the burden on counselors at all levels to advise students on the portability of their dual enrollment classes.

The community colleges in Virginia deliver dual enrollment courses in the public-school district where the college is located, so there is only one college which offers classes in each high school (Pretlow & Patterson, 2015). The cost of the program is set and consistent throughout the state. Dual enrollment options in Virginia are available to high school juniors and seniors who meet the English and mathematics admissions requirements of the community college (Anonymous, 2017b). Unlike Ohio, which has clearly articulated agreements to accept transfer credit for dual enrollment courses at the university level, four-year colleges in Virginia do not accept dual enrollment course credit for classes that were taught in a high school. This is due in part to the inconsistency in course quality and content for courses taught in the high school and those taught on the college campus (Commonwealth of Virginia, 2017; Sullivan & DuBois, 2013). In addition, students who participate in dual enrollment courses may discover that they accumulate more credits before obtaining an associate degree than would have been necessary had they entered college immediately after graduation from high school (Commonwealth of Virginia, 2017; Pretlow & Patterson, 2015; Sullivan & DuBois, 2013).

A comparison of the policy procedures for dual enrollment in Ohio and Virginia shows they are entirely different. The Ohio policy recognizes that student choice should drive which colleges are thriving on the college campus and by having higher education providers compete for student participation, there is the potential for high-quality courses to be available to all students with a guarantee that the credit will transfer in the state university system. This policy potentially lowers the cost of a post-secondary education and could interest under-represented students in post-secondary education. Virginia, on the other hand, is concerned with the quality of its courses and ensures that four-year universities will not lose revenue through dual enrollment. The strict standards it imposes on potential high school students, and the

transferability of credit, may deter some students from enrolling in course - the very students who are under-represented in the first place.

Maryland has a slightly different approach than either Ohio or Virginia. Students still need a recommendation from their high school principal to participate in the Early College Access Program and receive dual enrollment credit, however, any student over 16 may enroll in credit-bearing courses at the community college and receive the discounted tuition rate if they have not received a high school diploma (Anne Arundel Community College, n.d.; SB 740, 2013). The list of qualifying courses is quite extensive (Anne Arundel County Public Schools, 2017). In addition, dual credit programs are available to students attending private schools that have partnered with the community college and home-school students who have registered with the county Department of Education (Anne Arundel Community College, n.d.; SB 740, 2013). Courses may be taught in the high school by qualified adjunct professors, on the community college campus in regularly scheduled courses, or online. Pathway to completion programs offer students a sequence of courses designed to meet certificate requirements or fulfill general education requirements needed to earn an associate degree or transfer to a four-year university (Clagett, 2013).

The passage of Senate Bill 740 in 2013 required all community colleges in Maryland to establish articulation agreements with the county public schools for dual enrollment opportunities. The implementation of the program, however, is the decision of the local school system and the community college. The block schedule prevalent throughout the high schools allows students to leave school after two morning classes to take classes on a college campus. Providing transportation of high school students to the college campuses is not required in the bill, and the lack of transportation may limit students' ability to take dual enrollment classes on a college campus. Transportation notwithstanding, the dual enrollment policy framework

established with Senate Bill 740 sets clear guidelines for dual enrollment regarding eligibility, transferability, and cost.

Administration perspective. Funding issues are paramount when considering the viability of dual enrollment programs from the perspective of college administrators. Dual enrollment students typically do not pay full tuition for classes they take for college credit and in some cases the students may pay nothing at all. The reimbursement to the college is usually handled by an articulation agreement with the K-12 school system, or it may be mandated through state legislation. Money is available for dual enrollment students in career and technical education at the community college level from the federal government as a provision of the Carl D. Perkins Career and Technical Education Act of 2006 (Haag, 2015). Career and technical education is narrowly defined, and students who pursue an academic program have at least 50% of the tuition waived, and sometimes books and fees (Anne Arundel Community College, n.d.; Haag, 2015). The tuition waiver is also a concern at four-year institutions, such as Kennesaw State University in Georgia, as programs become popular with high school students who take their dual enrollment courses on a college campus (Kinnick, 2012) and the university does not receive full tuition reimbursement for their enrollment.

Funding issues also exist for public universities that do not have articulation agreements with school systems regarding dual enrollment because students are matriculating with more college credit than in the past (Kilgore & Wagner, 2017). The University of Kentucky system discovered that students search for schools that will accept the most of their dual enrollment credits, passing up universities that will not allow the transfer of college credits which also counted toward a high school diploma (Morris & Cox, 2016). Another problem for administrators in higher education is that high school students pursue dual enrollment opportunities without considering if the courses will fulfill certificate or degree requirements

(Kilgore & Wagner, 2017). This could lead to dissatisfaction on the part of students and their parents but can be resolved through academic counseling before enrolling in dual enrollment courses. As dual enrollment continues to be offered at more schools and to younger students, counseling services from the participating colleges should be made available to high school students in the same manner that they are available to traditional college students if dual enrollment credits are to be used to their maximum advantage for the students.

In response to the needs of community college students navigating the transfer process to the University of Maryland's four-year campus, the university has placed advisors in four community colleges (University of Maryland, n.d.). High school students who are dually enrolled with the community college can avail themselves of the services of the transfer advisor who can then guide them through the pathway to completion process. For students who choose not to complete an associate degree, the advisor assists students in selecting courses that will transfer to their preferred program at the four-year university. In addition, the university instituted a guaranteed admission policy to students who participate in the Transfer Advantage Program. This program provides some certainty and continuity to high school students who begin their college journey with dual enrollment.

An unanticipated result of more students enrolling in four-year institutions with college credit is illustrated by the changes Eastern Kentucky University had to make in its Honors Program. The very students who would have enrolled in the Honors Program in the past were declining to do so because they viewed the course sequencing of the Honors Program to be a repeat of the coursework they completed in high school, for which they had already received college credit. In 2015, the Honors Program enrolled a freshman cohort of 112 students, 103 of whom matriculated with an average of 20 college credits (Coleman & Patton, 2016). In order to adapt to the new reality, the university revamped its Honors Program by giving students the

opportunity to take cross-curricular honors seminars rather than follow a strict course-sequence that had been the norm before 2010 (Coleman & Patton, 2016).

From the perspective of high school administrators, dual enrollment can be a double-edged sword. Funds to pay the dual enrollment tuition could come from the school system budget as the high school might not receive funding for students who take their dual enrollment classes on a college campus. On the other hand, when dual enrollment courses are taught on the high school campus by adjunct faculty not affiliated with the school system, the cost to offer a dual enrollment class is less than paying a full-time teacher who is also accredited as an adjunct faculty member at a partner college (Hanson, Prushka, & Iverson, 2015; Kirkwood Community College, 2014). High school teachers who want to teach dual enrollment courses in the high school must meet the requirements of the partner college. If they do not, the course will not receive dual enrollment status.

Although the literature indicates a concern with the funding for dual enrollment classes regarding per student reimbursement, it does not address the actual cost of instruction regarding instructors. There is no indication that more instructors were hired to teach dual enrollment courses that were given on the college campus. These classes are typically open to the college population at large, and the marginal cost of adding high school students to existing college classes has not been identified. When the dual enrollment courses are offered at the high school, they are either taught by adjunct professors, who are paid by the course, or teachers already in the high school who are paid by the school system.

New rules established by the Higher Learning Commission in 2015, which accredits colleges and universities across the Midwest, impose stricter requirements on high school teachers who are teaching dual enrollment courses. The faculty must have a master's degree in the content area or at least 18 graduate credits in the content area they are teaching (Bradley,

2016). A master's degree in education will no longer suffice as a qualification to teach credit-bearing college courses in high school. This restriction is meant to ensure increased rigor in dual enrollment courses offered on the high school campus which only enroll high school students but at the same time limits the dual enrollment opportunities available to students in schools where the faculty do not have advanced degrees in the content area. The school systems will need carefully constructed articulation agreements with the community college to ensure the availability of adjunct faculty and mitigate the lack of qualified high school teachers.

Faculty perspectives. Faculty perspectives on dual enrollment come from at least three different points of view – full time faculty at four-year colleges, faculty at two-year colleges and adjunct faculty who are also high school teachers. Faculty at four-year colleges raised concerns early in the creation of dual enrollment programs about the quality of the instruction in dual enrollment classes provided by high school teachers who were also adjunct professors (Farrell & Seifert, 2007). Among their concerns were the qualifications of the dual enrollment adjuncts, even though in some cases the adjuncts were more current in their field of expertise than tenured faculty who had never left academia (Farrell & Seifert, 2007). A study at a community college in the south revealed that dual-enrollment courses given on the college campus were more demanding than the same course offered to standard college students (Ferguson, Baker, & Burnett, 2015) seems to refute the concerns of full-time faculty at four-year institutions. Another study which examined the performance high school students in a community college English 101 course found that some students were not prepared for the type of writing required in college, due to inexperience or lack of prior knowledge, and did not perform well (Tinberg & Nadeau, 2013). This finding supports the notion that high school students in college classes taught on the college campus do not receive special treatment because of their non-traditional status.

High school faculty, who were also adjuncts at community colleges and taught dual enrollment courses, understand there are differences in the environment and expectations of college courses. Many of them who were teaching for Blue Ridge Community College participated in a professional development program to ensure their syllabus reflected the rigors of an equivalent college course, the policies of the college, and the required legal language for students with disabilities (Charlier & Duggan, 2009). In a separate study at a different school district in the south, high school adjuncts believed their dual enrollment course was more difficult than the same course taught on the community college campus (Ferguson, Baker, & Burnett, 2015). The adjuncts who participated also stated that the sessions on the use of the library resources were very beneficial and would allow them to incorporate library research into their course requirements (Charlier & Duggan, 2009).

Faculty at Kirkwood Community College, who had dual-enrollment students in their classes, believed the impact on the college was positive. Just as important was the belief that adjunct faculty, who were simultaneously dual-enrollment professors and high school teachers, believed their ability to be successful was due to the excellent communication and professional development they enjoyed with their community college partnership (Hanson et al., 2015).

Faculty perceptions of dual enrollment programs are essential to the ultimate success of the program. The faculty, regardless of their academic status or location, need to feel part of the college community to convey to their dual-enrollment students that they are part of the college community. Communication between the college and the faculty is key to maintaining the standards and expectations of the dual enrollment program.

Student perspectives. The concern with declining educational standards in modern America has its roots in the 1983 report of the National Commission on Excellence in Education and has manifested itself in numerous programs such as No Child Left Behind and Race to the

Top. Although legislators may believe that improvements in educational outcomes can be achieved through administrative changes in curriculum and standards, whole school changes may be necessary to encourage students to complete high school and pursue post-secondary education (Burks & Hochbein, 2015).

One goal of dual enrollment is to capture the interest of some students who might not complete high school and encourage them to continue their education by earning college credit before, or with, their high school diploma. In urban areas, this program targets minority students who generally also come from lower-income families where the resources to attend college may not exist. Being able to earn college credit at a reduced, or no cost is a motivator for some students who did not believe a college education was a possibility (Dare et. al., 2017; Guerra-Garcia, n.d.; Kilgore & Wagner, 2017; Sáenz & Combs, 2015).

Students who participated in an early college high school model of dual enrollment, where they were in a small group environment, had a support system in place that helped them acclimate themselves to the rigor of college coursework and the expectations of their professors (Sáenz & Combs, 2015; Schaefer & Rivera, 2016). Students felt more connected to themselves and their ability to learn because they believed they were in a group of intellectual peers (Dare et al., 2017; Schaefer & Rivera, 2016). They also felt connected to their classmates as part of a family (Sáenz & Combs, 2015, Schaefer & Rivera, 2016).

Under the broader umbrella of dual enrollment are students of all backgrounds who are seeking self-fulfillment opportunities before they officially begin their post-secondary education (Dare et al., 2015). Although some students are concerned about the transferability of their dual enrollment credits when they eventually matriculate in a two-year or four-year college (Kilgore & Wagner, 2017), they gain an appreciation for the expectations of college coursework. As a result, the percentage of students who need to take remedial college courses before they can

enroll in credit-bearing courses declines when dual enrollment courses are part of the high school student's experience (Grubb et al., 2017).

Summary

Legislation in Maryland which focuses on college and career readiness has led to articulation agreements between community colleges and high schools across the state to offer dual enrollment opportunities to high school juniors and seniors. Dual enrollment has many forms which include taking college courses at the home high school, taking college courses at a local campus, attending a high school on a college campus or enrollment in online courses. The goals may differ but include the accumulation of college credits before high school graduation, acquiring a technical certificate with a high school diploma, or simultaneous graduation with an Associate Degree and a high school diploma. There are quantitative studies which focus on a correlation between dual enrollment and college success and qualitative studies which focus on the view of school personnel regarding the rigor and benefits of dual enrollment. The gap in the literature is a discussion on how all stakeholders in a community have come together to create dual enrollment pathway programs that help students fulfill their academic or workforce goals.

CHAPTER THREE: METHODS

Overview

To meet the requirements of the 21st century workforce in Maryland, employers will need employees with post-secondary technical skills and education. To obtain these credentials, students will have to continue their education beyond high school. The cost of post-secondary education may serve as a barrier for students, even if students choose to attend community colleges. One way to mitigate the cost of post-secondary education is through dual enrollment. Dual enrollment in Maryland is neither a new concept nor a new practice. In 2014, however, changes in Maryland law now required community colleges to have articulation agreements with public-school systems to ensure that dual enrollment opportunities are offered throughout the state (Senate Bill 740, 2013). Provisions in the Career and College Completion Readiness Act have brought the cost of post-secondary education within reach for low SES students (Frank & Fitzgerald, 2015) many of whom are racial and ethnic minorities, non-native speakers of English, and first-generation college attendees. To provide these programs, however, there must be partnerships in place to bring the programs to fruition.

This chapter explains the selection of a case study design for the research. There is a central research question supported by five sub-questions. Open-ended interview questions were posed to participants to explain their relationship to the phenomenon. The participant responses lead to a rich explanation of their experiences. The research took place at two community colleges in Maryland with participants representing various groups of stakeholders. Data collection occurred through a review of documents and archival records about the case and targeted interview questions of individuals and focus groups. Data were analyzed in a four-step process in addition to coding and triangulation. Trustworthiness for this study is supported by

credibility, dependability, confirmability, and transferability. Pseudonyms were assigned to all participants and institutions to protect their identity.

Design

A qualitative research design was used to conduct this study. According to Creswell (2013), qualitative research is appropriate when the research occurs in a natural setting, the researcher is the principal instrument, there are multiple means of collecting data, inductive and deductive logic is used, and participants' views give meaning to the research. This research was conducted following the prescription set forth by Creswell (2013). First, the research was conducted at the institutions where the programs were being offered. This provided the first-hand experience necessary to understand how post-secondary institutions cooperated in the delivery of college courses to high school students.

A case study was chosen as the research design because an attempt was made explain how different stakeholders functioned in, and contributed to, a partnership (Creswell, 2013) between a K-12 school system and a community college. As the researcher, I wanted the participants to explain their role in the partnership and how the program (Stake, 1995) helps students achieve their goals of post-secondary education or workforce preparation. In addition, I wanted to understand the unique qualities of the partnership between the community college and the school system by obtaining multiple points of view from participants who represented various groups of stakeholders (Yin, 2018). The approach for this research study is instrumental as the experience of the participants is explained through their own voice (Yin, 2018). This study was bounded by location because it took place in a specific state. It was also bounded by time because the program is currently in existence.

This is a multiple case study design with embedded units of analysis (Yin, 2018). I chose this design because I planned to examine how community colleges partnered with a school

district to implement the Governor's mandate that all community colleges develop articulation agreements with the local school system. The embedded units of analysis explained how different stakeholders participated in the formation of dual enrollment opportunities for students (Yin, 2018). The stakeholders included administrators, professors, advisors, business partners, and alumni.

This case study consisted of five components. First, a topical question was constructed, and issues were developed using how and why questions (Yin, 2018). The topical question was designed to obtain an explanation of how the dual enrollment partnership between the community college and the public-school system prepared students for post-secondary education or the workforce. Second, the study proposition was developed and used as a guide for the research. The study proposition sought to answer the question of why the partnership between the community college and the school system was formed. Further issues were developed at this stage of the investigation (Stake, 1995; Yin, 2018) and included an explanation of the decision to include specific programs, with their supporting dual enrollment classes, in the curriculum.

The third component of this design is the partnership itself (Creswell, 2013; Yin, 2018). It was bounded by the current time and location – two counties in Maryland with diverse populations (Yin, 2018). After I collected the data, I used pattern-matching to determine if the data supports, or weakens, the theories used as the basis for the case (Almutairi, Gardiner, & McCarthy, 2014). The data reflected multiple perspectives of the participants (Almutairi et al., 2014). The final component of the case study design was to make a connection between the findings, or explanations, to the goal of the case (Campbell, 1969; Yin, 2018) – to explain how each college developed the partnership with the school system to prepare students for post-secondary education through dual enrollment opportunities.

Research Questions

One central question and five sub-questions guided this research. The central question is: How does the dual enrollment partnership between county public schools and the community college prepare students to be college and career ready through dual enrollment programs that offer career pathways to post-secondary education? The sub-questions are as follows: (SQ1) How do curriculum requirements impact the academic schedule and support the career pathways initiative with dual enrollment? (SQ2) How does the high school and college counseling process support dual enrollment programs? (SQ3) How do instructors of dual enrollment courses describe their experiences teaching high school students in college courses? (SQ4) How does the local community partnership with the school system and college provide real-world opportunities to students participating in dual enrollment programs? (SQ5) How do participants in dual enrollment programs describe the positive and negative impact of their experience on their post-secondary education?

Setting

There are two settings for this study – Peninsula Community College and Northern Community College, both of which are in Maryland. These community colleges were chosen because they support an ethnically, racially, and economically diverse student body. The colleges consist of traditional undergraduate students, high school students in dual enrollment programs, home-school students taking classes, gifted and talented students under 16, students in technical programs that do not require a degree, K-12 teachers seeking recertification, senior citizens, and community members enrolled in enrichment classes. Although the community college serves a diverse body of students, only the partnerships that will award college credit to courses taken by high school students were considered for this study.

The school systems which partner with these colleges offer a wide range of programs which include, but are not limited to, signature specialty college and career pathways, and magnet, Advanced Placement, and International Baccalaureate programs, in traditional high schools, and vocational-technical career centers, charter schools, and an early college high school, which are their own unique entities. In addition, these community colleges participate in a program that guarantees admission to the state four-year flagship university if certain benchmarks are achieved. As part of the college completion initiative, it is vital to consider sites where students transition from high school to the community college and then from the community college to a four-year university. The decision to explore partnerships at multiple community colleges was made to obtain different organizational approaches in creating a partnership with the local school systems.

Peninsula Community College

Peninsula Community College had its humble beginnings over 50 years ago in a local high school with 270 students who attended college in the evening. The college has since moved to a 270-acre suburban campus and serves over 50,000 students in credit and non-credit courses. The college maintains classrooms in several locations throughout the county, which allows it to offer courses in several population centers that are accessible by public transportation. Peninsula Community College also offers a limited number of college courses in select high schools throughout the county in support of signature pathway programs.

The college is open-access and anyone who qualifies may take credit-bearing classes. High school students can earn college credit through several programs which include Early College Access, Dual Credit, Advanced Placement, and Articulated Credit. The college goal is degree completion for its students and fourteen Fields of Interest have recently been established to provide a seamless transition to a four-year university, should students choose that option.

In keeping with the mission of a community college to serve the needs of the local community, Peninsula offers for-credit professional certificates programs, non-credit professional certificate programs, personal enrichment courses, and special interest courses. The college also creates and delivers professional training to the business community.

Peninsula Community College enrolls 4,442 full-time students and 10,833 part-time students in its for-credit courses. The racial composition of the students is 59% Caucasian, 18% African-American, 7 % Hispanic, and 4% Asian. These figures also represent the racial composition of Peninsula County.

Northern Community College

Northern Community College is over 60 years old and is located on more than 325 rural acres in the northern part of the state. It serves over 20,000 students who are enrolled full-time and part-time in for credit courses, and 11,000 students in non-degree certificate programs, workforce development, and personal enrichment programs. Northern Community College offers a limited number of courses in nine of the ten county high schools in support of a pathway program. Northern Technical High School is co-located with the community college which allows for easy access to on-campus college courses for students who choose to avail themselves of the opportunity. A satellite campus of a major state university is also co-located with the community college which allows for a seamless transition for students who wish to pursue a bachelor's degree after the completion of their associate degree.

The college is "open-access," and anyone who qualifies may take credit bearing classes. High school students can earn college credit through Dual Enrollment, Concurrent Enrollment, Part-time Attendance, Accelerated Pathways, a Waiver of their senior year, and Credit by Exam. Articulation agreements with Northern Community College and Northern Technical High School

also allow students to earn 20 college credits toward an associate degree for work completed in an apprenticeship program for specific trades.

In keeping with the mission of a community college to serve the needs of the local community, Northern offers for-credit professional certificates programs, non-credit professional certificate programs, personal enrichment courses, and special interest courses. The racial composition of Northern Community College is 72% Caucasian, 16% African-American, 4% Hispanic, and 3% Asian. These numbers also reflect the racial composition of Northern County.

Participants

Purposeful, criterion-based sampling was used to obtain participants for this study (Patton, 2015). In addition, snowball sampling procedures were used to expand the participant base (Creswell, 2013). Purposeful sampling is the selection of cases that will provide information-rich data (Patton, 2015). Specific groups of stakeholders were used to inform the research. These stakeholders included administrators, advisors, professors, members of the business community, and students who took college courses for credit before receiving their high school diploma. Criterion sampling was used to identify individuals who might be selected for further research (Patton, 2015). The criteria that were used to identify individuals for further research was based on the relationship of the individual to the process of creating, implementing, or participating in a dual enrollment program. Snowball sampling was used to increase the size of the potential participant pool. Snowball sampling occurs by asking people who know about a topic to refer individuals to participate in the study (Patton, 2015). I followed up on suggestions from academic and community leaders for suggestions on whom to ask to inform the research.

Potential participants were informed of the purpose of the study, how the information they provided would be used, and the procedures to opt out of the study should they choose not

to continue. Participants were asked to participate in a one-on-one interview with the researcher or a focus group. The focus groups were conducted in a face-to-face setting, although two individuals phoned in via conference call because they were in a remote location.

There was a total of 20 participants: 14 participants completed individual interviews, and six were in focus groups. This number of participants is sufficient for a case study (Creswell, 2013). Participants in this study were administrators, professors, counselors, members of the business community, and alumni. During individual interviews, participants explained their role in the creation of dual enrollment programs and how they support the partnership between the school system and community college. Alumni in focus groups were asked to explain their experiences in dual enrollment courses. Pseudonyms were assigned to the participants to maintain their privacy. The community colleges were assigned pseudonyms as well.

Procedures

Institutional Review Board (IRB) approval from Liberty University was sought after the community colleges gave their approval to conduct the research. After IRB approval from Liberty University was granted (Appendix A), participants were approached to be in the study. No participant was interviewed before receiving IRB approval from Liberty University.

Contact information for potential participants was provided by administration individuals in the community colleges, the college websites, and college directories. Potential participants were invited to the study via email correspondence or with a telephone call. A consent form, which included the approved IRB (Appendix B and Appendix C) and contact information of the researcher was emailed to potential participants (Appendix D). The form explained the purpose of the study, the methodology to be used, the procedure to opt-out of the study should someone choose not to continue, and the precautions to be taken to ensure their privacy.

I asked a member of the Business Education Partnerships Office and a transfer advisor

counselor to review my interview questions for appropriateness in both the one-on-one interviews and the focus groups. Data was gathered through one-on-one interviews with administrators, professors, counselors, and business partners. Alumni were asked to participate in focus group discussions. Documents relevant to the formation of the partnerships and other records from websites were reviewed to support the study. The interviews and focus groups were recorded on two Olympus digital recording devices. Pseudonyms were used in the transcripts of the recorded interviews to protect the privacy of the participants. All materials relating to participant interviews and focus group discussions were properly secured to provide an extra measure of privacy and email responses were deleted from my account. The documents obtained through open access methods were stored in a filing cabinet.

The Researcher's Role

I was the sole researcher conducting this study. I have no connection to Northern Community College. I am an adjunct professor at Peninsula Community College and teach only when there are sufficient enrollments in my department to warrant the use of an adjunct. I am not in a position to be a person of influence over any potential participants from this college. I made analytical judgments throughout the data collection process.

As the sole researcher, I served as the key instrument and collected detailed descriptions of participants and used direct quotes from them in my analysis of the data (Patton, 1980, 2015). One of the primary sources of data came from open-ended questions (Patton, 2015; Yin, 2018). Open-ended questions are an essential method to use when the goal is to understand and explain the participant's experience. This sometimes led to additional avenues of inquiry (Yin, 2018). As participants expanded on their personal experiences, themes began to emerge (Patton, 2015). Open-ended questions were important to capture additional information that might not be

obtained through other methods of data collection. I also used questions to validate information from other sources, such as documents (Yin, 2018).

Interviews, both individual and focus groups, were two sources of information used in the conduct of my research. Documents relevant to the formation and functioning of the partnership were also examined to better understand the role and responsibilities of the various stakeholders better. These documents addressed the transferability of dual credit from the two-year colleges to the four-year universities and from the secondary school to the four-year universities. This element was important because dual enrollment programs should align with college completion and graduation requirements.

I used inductive and deductive reasoning to explain the case study based on the information I obtained from my participants and other data I collected. The transcripts of the recordings of the one-on-one interviews and focus-group discussions were read and re-read to establish codes. After the codes were developed, I looked for patterns, attempted pattern-matching (Yin, 2018), and developed themes. At the same time, I used a rich description to explain the findings of my research rather than a statistical description to explain my data.

Data Collection

Data collection took advantage of the multiple sources of data that were available to the researcher (Yin, 2018). I was the primary instrument by which data was collected and protected the human participants in the research by securing my data and using pseudonyms for the participants and community colleges. Potential participants were screened to ensure that they were appropriate participants for the study and met the established criteria. Interviews were conducted with representatives of different communities of stakeholders. Other methods of collection included focus groups and document analysis.

Interviews

There were 20 participants who took part in either one-on-one interviews or focus-group discussions at their community college, place of business, or by telephone for the convenience of the participant. The interview questions were designed to elicit responses to the central question and the guided sub-questions. The interview responses addressed the central question and guided questions (Rubin & Rubin, 1995). They were recorded on multiple devices and then transcribed verbatim. Several questions were asked of all participants, and other questions were geared to a specific group of participants.

Through interviews with administrators, I wanted to answer the central research question of how the dual enrollment partnership between the school system and the community college prepared students to be college and career ready from their perspective. With the results of the interviews with administrators, I hoped to answer sub-question number one by explaining the impact that curriculum requirements had on the academic schedule and how career pathways were supported through dual-enrollment. Interview questions for administrators are in Table 1.

Questions one and two are introductory questions and are non-judgmental. Patton (2015) indicates this type of questioning is necessary to establish rapport with the participant. Questions three and four address the need for the high school curriculum to align with the requirements of college completion (Duncheon, 2015). The dual enrollment courses should support the certificate requirements of the signature program the student chooses (Anne Arundel County Public Schools, 2017). Questions five, six, and nine ask administrators to discuss the signature programs and their dual enrollment components (Anne Arundel Community College, 2018). Question seven asks administrators to discuss how they offer students “college knowledge” so

Table 1

Interview Questions for Administrators

-
1. What is your role as it relates to the dual enrollment programs in the high schools? Please explain.
 2. How did you participate in the creation of, or support for, the articulation agreements between the community college and the school system? Please explain.
 3. How did you gain support for the curriculum changes necessary to support the dual enrollment programs (if any)?
 4. How did you determine which dual enrollment courses would be offered in the high school?
 5. How were high schools selected to host the various signature pathway programs and their dual enrollment component?
 6. In your opinion, what is the value-added of the dual enrollment option in the signature pathway programs?
 7. Please describe the support you provide to students who participate in dual enrollment courses.
 8. How do you describe the role of the business partners in the success of the signature pathway programs?
 9. Why do you believe students participate in the signature pathway programs offered in the high school?
 10. How do you believe dual enrollment benefits, or harms, minority students, low-income students, non-native speakers of English, and first-generation college students?
 11. What changes do you believe should be made to the pathway programs and their dual-enrollment components?
 12. Is there anything else that you believe is important to discuss on this topic?
-

they can transition between the requirements of high school course completion and college course completion (Duncheon, 2015). Question eight asks administrators to discuss the contribution of the business partners to the signature programs (Maryland Association of Community Colleges, 2016). Question ten asks administrators to discuss the benefits of dual enrollment to students who may not have been able to afford a college education if courses were not available at reduced tuition rate (An, 2013; Barnett, Maclutsky, & Wagonlander, 2015; Frank & Fitzgerald, 2015). Questions 11 and 12 are concluding questions to allow for additional exploration that I might not have been aware of prior to the interview (Yin, 2018).

Through interviews with instructors, I wanted to be able to answer the central research question of how the dual enrollment partnership between the school system and the community college prepares students to be college and career ready from their perspective. With the results of the interviews with instructors, I wanted to answer sub-question number three by explaining the experience of instructors who taught dual enrollment students in their college courses.

Table 2

Interview Questions for Instructors

1. What is your college teaching experience?
 2. What is your experience teaching high school students in college courses?
 3. What college courses are you teaching through the dual enrollment component of the signature pathway programs?
 4. Prior to teaching dual enrollment students, did you receive any training on teaching high school students?
 5. How would you describe the partnership between the community college and the public- school system?
 6. How would you describe your role in the formation of the partnership between the community college and the high school?
 7. How would you describe any differences in the curriculum in the dual enrollment course offered to high school students and the course that is offered on the community college campus?
 8. How would you describe the differences between the high school students in your college course and the traditional college-age student in your course taught on the college campus?
 9. How would you describe the expected, and unexpected, aspects of your experience teaching a dual enrollment course?
 10. How do you believe dual enrollment benefits, or harms, minority students, low-income students, non-native speakers of English, and first-generation college students?
 11. If it were in your power to do so, what changes would you make in the dual enrollment component of the pathways program and why?
 12. Is there anything else that you believe is important to discuss on this topic?
-

Questions one, two, and three are introductory questions and are non-judgmental. Patton (2015) indicates this type of questioning is necessary to establish rapport with the participant. Question four addresses training college faculty to teach high school students. Recognizing that there are differences in teaching a younger age group, even though they are college students, 31 states require instructors of dual enrollment students to either receive special training or participate in on-going professional development (Taylor et al., 2015). Questions five and six are designed to understand the role and perception of instructors involved with dual enrollment instruction (Senate Bill 740, 2013). Questions seven, eight, and nine ask instructors to address any real, or perceived, differences in the content, manner of instruction, and assessment that might occur in a college course taught exclusively in the high school to high school students versus traditional age college students on the college campus (Cowan & Goldhaber, 2015). Question ten asks instructors to discuss the benefits of dual enrollment to students who may not have been able to afford a college education if courses were not available at reduced tuition rate (An, 2013; Barnett, Maclutsky, & Wagonlander, 2015; Frank & Fitzgerald, 2015). Questions 11 and 12 are concluding questions to allow for additional exploration that I might not have been aware of prior to the interview (Yin, 2018).

Through interviews with academic counselors or advisors, I wanted to be able to answer the central research question of how the dual enrollment partnership between the school system and the community college prepares students to be college and career ready from their perspective. With the results of the interviews with academic counselors or advisors, I answered sub-question number two by explaining how academic counselors or advisors viewed the short-term and long-term effect of dual enrollment on student academic achievement. Interview questions for academic counselors and advisors are in Table 3.

Table 3

Interview Questions for Advisors / Counselors

-
1. Please explain your role in the agreement between the community college and the school system regarding counseling of students in dual enrollment courses.
 2. What is your experience advising high school and college students? Please explain any differences.
 3. Please explain your role in advising students regarding dual enrollment opportunities in general.
 4. How do you advise students who pursue dual enrollment opportunities as part of their signature or pathway program?
 5. In your experience, is counseling an important element of the dual enrollment experience? Please explain.
 6. How would you describe the motivation of students who participate in the dual enrollment courses?
 7. What are the advantages and disadvantages to students who participate in dual enrollment courses?
 8. How do you believe dual enrollment benefits, or harms, minority students, low-income students, non-native speakers of English, and first-generation college students?
 9. If given the opportunity to do so, what changes would you make in the advising of students in dual enrollment courses?
 10. Is there anything else that you believe is important to discuss on this topic?
-

Questions one, two, and three are introductory questions and are non-judgmental. Patton (2015) indicates this type of questioning is necessary to establish rapport with the participant. Questions four and five ask how the counselor advises students on the courses they should select to ensure alignment of their coursework with their signature and college pathway program (Castellano, Richardson, Sundell, & Stone, 2016). Questions six and seven ask the counselor to address the trade-off between a less expensive option to earn college credits and the possibility that the student may opt out of earning a high school diploma or may not transition to a four-year university after earning a professional certificate or associate degree. Question eight asks counselors to discuss the benefits of dual enrollment to students who may not have been able to afford a college education if courses were not available at reduced tuition rate (An, 2013;

Barnett, Maclutsky, & Wagonlander, 2015; Frank & Fitzgerald). Questions nine and ten are concluding questions to allow for additional exploration that I might not have been aware of prior to the interview (Yin, 2018).

Through interviews with corporate or community sponsors, I wanted to be able to answer the central research question of how the dual enrollment partnership between the school system and the community college prepares students to be college and career ready from their perspective. With the results of the interviews with corporate or community sponsors, I answered sub-question number four by explaining the real-world experience that was provided to students in pathway programs with a dual enrollment component.

Table 4

Interview Questions for Corporate / Community Sponsors

1. For which corporation or agency do you work? Please explain your role.
 2. Which pathway program do you support?
 3. How did your corporation or agency participate in the formation of a partnership with the community college and the school system?
 4. How does your corporation or agency support the signature pathway program in the high school?
 5. Why do you feel it is important that your corporation or agency forms a partnership with the community college and the school system?
 6. How does the partnership benefit the students?
 7. How does the partnership benefit the high school and the community college?
 8. What are the expected, and unexpected, benefits of this partnership to your corporation or agency?
 9. How does your partnership with the school system help fulfill the goals established by the Governor's Workforce Initiative Board?
 10. Is there anything else that you believe is important to discuss on this topic?
-

Questions one and two are introductory questions and are non-judgmental. Patton (2015) indicates this type of questioning is necessary to establish rapport with the participant. Questions three, four, five, and six discuss the relationship between the business sponsor and the signature pathway programs. The Perkins Act of 2006 recognizes the importance of apprenticeships and internships as one method to prepare students for the workforce (Castellano et al., 2016). Questions seven, eight, and nine discuss the benefits to the business partners by cooperating with the school system and community college. Business partners contribute to preparing students to enter the workforce (Governor's Workforce Investment Board, 2008). Question ten is a concluding question to allow for additional exploration that I might not have been aware of prior to the interview (Yin, 2018).

Focus Groups

The focus groups consisted of alumni who participated in dual enrollment classes. They were selected through criterion and snowball sampling. Two focus groups of two and four participants each met at Peninsula and Northern Community College. Two focus group members, who had attended Darlington High School, participated in the focus group discussion at Northern Community College by teleconferencing because they attend four-year universities out of the area. The focus group questions were designed to elicit an answer to the central research questions and sub-question number five. I wanted to explain the positive and negative impact the dual enrollment experience had on their post-secondary education. The students were not involved with the creation of the partnership between the colleges and the school system but instead were the intended beneficiaries. For this reason, they were separated from the other participants. Focus group questions are in Table 5.

Question one is an introductory question and is non-judgmental. Patton (2015) indicates this type of questioning is necessary to establish rapport with the participant. At the same time,

this question led to the main goal of the focus group – to gather information regarding the participant’s experience in dual enrollment. Questions two was used to understand the

Table 5

Focus Group Questions for Alumni

1. Wat dual enrollment courses did you take? / In which pathway program did you participate?
 2. How would you describe your motivation to take a dual enrollment course?
 3. How did your experience prepare you for the transition to college or the workplace?
 4. Please explain the support system that was in place for you while in your dual enrollment course.
 5. Please explain the difference in the academic expectations of your dual enrollment college course in relation to your high school courses.
 6. How did your interactions with a college professor differ from your interactions with a high school teacher?
 7. How did your interactions with a college counselor differ from your interactions with your high school counselor?
 8. What were the expected, or unexpected, results of your dual enrollment experience? Please describe them.
 9. Based on your personal experience, please explain why you would, or would not, recommend that students participate in a signature pathway program and the dual enrollment option.
 10. Is there anything else that you believe is important to discuss on this topic?
-

motivation of accepting the academic challenge of taking college classes in high school (McDonald & Farrell, 2012) and asked if the individual was extrinsically or intrinsically motivated to pursue a course of study that was voluntary (Deci & Ryan, 2000). Question three asked how the individual perceived the result of participation in the signature program. The Perkins Act of 2006 was passed to address the need to align high school curriculum with the needs of the workplace (Castellano et al., 2016). Question four addressed the need for a support system that high school students enrolled in college class need to be successful (Hanson et al., 2015; Muñoz, Fischetti & Prather, 2014) and to achieve the high school-college balance.

Questions five, six, and seven addressed student understanding of the difference between the expectations in high school and the expectations in college (Durham et al., 2015). Question eight asked for student perceptions of their experiences, which can be positive or negative. Students may not have an accurate perception of the expectations of college-level coursework (Kanny, 2015) but may still believe it is a worthwhile endeavor (Deci & Ryan, 2000b; McDonald & Farrell, 2012). Question nine solicited student opinions regarding the value of the program. Question ten was a concluding question to allow for additional exploration that I might not have been aware of prior to the interview (Yin, 2018).

Document Review

I reviewed a variety of documents for my study that explained the origin and implementation of dual enrollment programs. Several of these documents are part of the public record of the State of Maryland. Other documents were available through the community college archives and websites. These documents answered the central research question of how the partnership between the school system and the community college prepares students for post-secondary education and the workplace.

I reviewed the documents of the Governor's Council on Workforce Development and P-20 Education to explain the need for more students to pursue post-secondary education. The purpose of this review was to understand the need for workforce development to meet the needs of employers. The council had its origins as a response to employers' concerns that students with a high school diploma did not have the skills necessary for the workplace. In addition, even though students had a high school diploma, they were not prepared to undertake post-secondary academic course work, and many needed to take remedial, non-credit mathematics and English courses at the community college before being allowed to enroll in for-credit college courses.

I reviewed Maryland Senate Bill 740 which requires community college to offer opportunities for dual enrollment to school systems. This legislation details how community colleges offered courses, how much tuition would be charged for the courses, who would be able to enroll in the courses, and how the credit would be awarded. This bill also allowed for reverse credit transfer – meaning that students could transfer credit from a four-year institution to the community college to satisfy degree requirements for an associate degree. Community colleges in the state are open access institutions, and by requiring articulation agreements with the public schools, Senate Bill 740 provided opportunities to students from typically underserved communities to gain access to a college education that previously might have been closed to them. I analyzed the articulation agreements between the community college and school system to understand the organization and responsibilities of all parties in the dual enrollment program.

I analyzed the documents that illustrate the course requirements for the signature programs in the high school, the pathway to completion requirements in the community college, and the majors in the four-year universities. These documents showed how students could seamlessly transition from high school to a four-year university via the community college.

Data Analysis

Analyzing data in a case study involves a search for patterns (Almutairi, Gardner, & McCarthy, 2014; Stake, 1995; Yin, 2018) as the researcher looks for meaning in the data. The first step in the analysis is to examine the data concerning the entire case. I developed a set of codes to help uncover themes and subthemes from the data (Thomas, 2017; Yin, 2018). The data was tabulated and rearranged in a series of charts to develop a strategy to conduct the analysis (Yin, 2018).

Using the theoretical basis for the case study, I used the data to explain the central question of how the dual enrollment articulation agreement between the community college and

the school system helps to prepare students to be college and career ready. According to Yin (2018), a high-quality analysis in a case study requires four steps – include all relevant evidence in the analysis, including alternative interpretations of the data, discuss the most significant aspects of the case study, and use your prior knowledge of the case to support analysis of the data.

I interviewed administrators, instructors, counselors, business partners, and alumni. I anticipated that each group of stakeholders would have a different perspective on the benefits of dual enrollment for the general student population and sub-groups within the student population. I analyzed each case to determine with-in case themes. After I identified the themes in each case, I compared the themes across the cases to determine similarities or differences. I considered the possibility that the outcome for the students would be the same, even if the organizational process that provided the dual enrollment opportunities was different. I kept an open mind because it was possible that the data could indicate a disconnect between the intent and design of the program and how it functioned. In addition, the data might have indicated that dual enrollment opportunities did not prepare students for a career or post-secondary education due to factors outside of the program. I discussed the most significant aspects of the case study based on the themes that emerged during the analysis. Finally, I used my own insights, based on personal experience, to provide additional connection to the data. Personal insight is important in a qualitative study because quantitative methods are not used to analyze data (Thomas, 2017).

Open coding was used to label the data according to concepts and categories (Creswell, 2013). I developed a set of codes for each group of participants and then compared codes between participant groups. From the 49 codes that were developed, five themes emerged. The themes were supported by the verbatim transcripts of the interviews and were relevant to both cases. Following the suggestions of Yin (2018), I evaluated the data in several ways, arranging

it by themes and subthemes according to participant groups and created charts to tabulate the frequency of the codes.

I used data triangulation to analyze my findings. Data triangulation allowed me to analyze what the participants said in the one-on-one interviews with what they said in the focus groups. I used documents to explain and analyze the formation of the partnership.

Trustworthiness

The validity of my research is supported by credibility, dependability, transferability, and confirmability. Patton (2015) says that trustworthiness can be enhanced when the researcher is aware of their own biases and uses “multiple data collection methods, sources, investigators, or theoretical perspectives” (p. 685).

Credibility

Credibility is defined as the correlation between the experiences expressed by the participants and the representation of those experienced by the researcher (Patton, 2015). I added credibility to my study by having the participants review the transcripts of the interviews and make corrections to any errors that I made (Creswell, 2013). The use of triangulation also added credibility to my research. The use of documents was to explain the process that was followed to create the dual enrollment programs.

Dependability and Confirmability

A researcher must have a logical, traceable and documented process to have a product that is dependable (Patton, 2015). I developed an audit trail that included my notes, documents, and other material gathered during the study (Yin, 2018). My research is dependable because I used direct quotes from the participant interviews and maintained an audit trail of my actions during the research process. My work was peer reviewed by a community college professional and an educator with experience constructing a dual enrollment course.

Patton (2015) says that confirmability establishes as fact the link between the data and the interpretations of the data. A confirmability audit can be conducted on my research that will demonstrate my use of primary resources, authenticate the recordings of my one-on-one and focus group interviews, and examine my analysis of applicable documents (Mertens, 1998). Included in the detailed explanations that were developed in response to the research questions are descriptions of the setting and the participants in the research in addition to my methods of data collection.

Transferability

As the researcher, it was my responsibility to ensure that readers have sufficient information to make a comparison to other community college and their school system partnerships (Patton, 2015). By using the umbrella term of “dual enrollment,” I have broadened the applicability of my research to include the various forms that dual enrollment takes across the academic landscape. In addition, by including a variety of stakeholders involved in the process of creating and implementing the partnership between the community college and the school system, this case study may serve as a guide to research other such agreements.

Ethical Considerations

Any study involving live participants must be carried out in the most ethical means. I did not commence my study until I received IRB approval from Liberty University and the community colleges involved in my study. I obtained informed consent from all participants and provided them a copy of the IRB. Participants had the opportunity to review the transcripts of their interviews for accuracy. All participants and schools are referred to by their pseudonyms in the report, which is particularly important when discussing any negative experiences of the participants post-dual enrollment. Participants were provided with the opt-out procedures and one person chose to opt-out of the study. There were no penalties for the participant who elected

to opt out of the study. Any data stored on my computer was password protected, and any information on paper was stored in a locked filing cabinet.

Summary

This instrumental, multiple case, embedded, qualitative study attempted to build upon the theory of ecological systems (Bronfenbrenner, 1974) and the theory of organizational learning (Senge, 2006) using open-ended research questions posed to participants during one-on-one interviews, focus group discussions, and an analysis of documents. I used open coding to develop themes and a thick, rich explanation of the participants' role in the creation of the dual enrollment partnership. The trustworthiness of this research study was constructed through triangulation, member checks, peer reviews, and audits. It complied with the ethical standards established by Liberty University.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this qualitative instrumental multiple case study is to explore the partnership between two county school systems and two community colleges in Maryland and to explain how a variety of stakeholders created pathways for high school students to earn college credit in high school and transition into a post-secondary environment that prepares them for the needs of the 21st-century workplace. The data collection methods used for this study were individual interviews, focus group interviews, and documents. The documents consisted of legislation and state council recommendations in addition to publicly available information on school and college websites. Codes, themes, and patterns were developed to describe the partnerships between the school system and the community colleges.

A central research question and five sub-questions explored how the partnership between the county public schools and the community colleges prepare students to be college and career ready through programs that allow students to earn college credit before high school graduation that offer career pathways to post-secondary education. The first sub-question examined how curriculum requirements impact the academic schedule and support the career pathways initiative with dual enrollment. The second sub-question explored how the high school and college counseling process supports dual enrollment. The third sub-question focused on the experiences of professors who taught high school students in their college courses. The fourth sub-question investigated the role of business partners in providing real-world opportunities to students in dual enrollment programs. The fifth sub-question addressed the positive and negative aspects of dual enrollment through the lived experience of students who participated in the program.

Participants

The participants in this study represent a variety of stakeholders involved in creating a partnership between the community college and public schools to create opportunities for high school students to earn college credit by attending college courses before they have earned a high school diploma. In order to understand the role of the stakeholders, administrators, advisors, professors, and business partners were interviewed in a one-on-one setting. Students who attended college courses before receiving their high school diploma were interviewed in two focus groups. Each of the participants brings a unique perspective to the practice of allowing high school students to enroll in college courses to provide more opportunities to prepare for the demands of the 21st-century workplace.

Individual interviews were conducted with 14 people who are administrators, counselors, professors, or business partners. Six individuals participated in two focus groups. The original intent was to have two focus groups of three – five participants each, however, scheduling problems and no-shows, resulted in groups sizes of two and four former dual-enrollment students. The researcher assigned each participant a pseudonym to protect their identity.

Table 6

Participant Demographics

| Name | Position | Community College |
|-----------|------------------|-------------------|
| Sean | Administrator | Peninsula |
| Robert | Administrator | Peninsula |
| Karen | Advisor | Peninsula |
| Quinn | Advisor | Peninsula |
| Oliver | Professor | Peninsula |
| Paige | Professor | Peninsula |
| Alan | Business Partner | Peninsula |
| Bruce | Student | Peninsula |
| Helena | Student | Peninsula |
| Julia | Administrator | Northern |
| Thomas | Administrator | Northern |
| Leonard | Advisor | Northern |
| Xavier | Advisor | Northern |
| Zach | Professor | Northern |
| Isaac | Coordinator | Northern |
| Catherine | Business Partner | Northern |
| Paul | Business Partner | Northern |
| Peter | Student | Northern |
| Brad | Student | Northern |
| Abigail | Student | Northern |
| Francesca | Student | Northern |

Sean

Sean is a Caucasian, senior administrator at Peninsula Community College and plans to retire in the next year. Although other people in the office were casually dressed, Sean wore dress pants, a button-down shirt with a tie, and a blazer. The interview took place in Sean's office, which was very neat and orderly. He spoke slowly and deliberately and had material on his desk that pertained to the topic of conversation. He also had fliers of the newly organized field of interest pathways offered at the college to give to me. Sean holds a master's degree in Business Administration and has been working in the same position for 23 years. He spoke with great pride regarding the efforts of the community college to provide college courses in the high schools to students who otherwise might not have had the opportunity to take such courses or might not have believed they were capable of being successful in a college class. His extensive

knowledge in his current role is supplemented by his previous experience working in a four-year, private university for nine years. During his tenure at Peninsula Community College, Sean has worked on a variety of programs that award college credit to students who have not yet graduated from high school. Sean has a personal interest in the pathways program, and college opportunities for high school students because one of his children benefited from the program while in high school.

Robert

Robert is a Caucasian male in his late-fifties. He is a tall (6' 3"), slender man with short, curly, graying hair with a very out-going demeanor. Robert was professionally dressed in slacks and a button-down shirt – a blazer hung on a hook in his office. The interview was conducted in Robert's office. His desk and work area were strewn with papers, journals, promotional material for his program, and other miscellaneous papers. The interviewer had to move things out of the way to find a seat. Robert is an administrator at Peninsula Community College and is the program manager for a specialty program at Airport High School which allows students to earn a professional certificate Transportation and Cargo Security, while in high school, if they follow a specific course of study. He has been in the position for three years. Robert is originally from the upper Midwest but earned his bachelor's degree in the southwest and settled in the mid-Atlantic after receiving his Master's in Business Administration.

This year, Robert developed a college course sequence to support a signature pathway program at Gamboa High School that will lead to Business Management Certificate in Social Enterprise. Robert's goal is two-fold - to introduce the possibility of college to students who might not have considered a post-secondary education and to show students that there are attractive alternatives to a four-year university immediately after high school graduation. He

wants to continue to work with the public school system and offer dual enrollment courses on-site in the high schools in support of their signature pathway programs.

Karen

Karen is a Caucasian female in her late-fifties who works as a pre-transfer advisor for the University of the Mid-Atlantic (UMA) but maintains an office at Peninsula Community College. Karen is very friendly and encouraging to all students who come to her for assistance in planning their courses. Her office walls are covered in informational material for both Peninsula Community College and UMA.

Karen has over 30 years of informal and formal experience advising students which she has done in her capacity as a high school teacher, campus minister, study abroad advisor, departmental advisor at a large, private university in the Midwest and now as a pre-transfer advisor. Although Karen's primary job is to assist community college students devise a course completion plan that will ensure a smooth transition into UMA, she also advises high school students who are seeking advice on dual enrollment that will fulfill degree requirements at UMA.

Quinn

Quinn is a Caucasian male, of medium height and build, in his late-sixties with light, thinning, hair. He was professionally dressed in slacks and a buttoned-down, collared shirt. He was very soft-spoken, deliberate in his speech, and seemed to be kind and sympathetic to students' needs. Peninsula Community College employs Quinn as a community college transition advisor embedded in Airport High School. Quinn worked for 35 years as a teacher in a neighboring county and worked as an employment specialist for a year. He was the first college transition advisor to be placed in a Peninsula County high school and anticipated working in the position for a few years before leaving to enjoy retirement. Ten years late, Quinn is still working at Airport High School advising students on behalf of Peninsula Community College.

The interview took place in Quinn's office, which is, in fact, a multipurpose area and used to function as the school bookstore. During the interview, there were several students at one end of the room doing some academic work. It appeared to the researcher that Quinn was supposed to be the proctor for these students because no other adult was in the room. Quinn did not know in advance that this was going to happen. Eventually, a teacher showed up to collect the written material. Quinn mentioned that this was a disadvantage of his position. As an employee of the college, rather than the public school system, he was a "guest" and had to make do with whatever space he was given.

Oliver

Oliver is an African-American male in his mid-fifties. In addition to serving as a department chairman, he holds a high-level position as an officer in the state defense force and carries himself as such. The interview took place in his office, which was very orderly. Oliver grew up in Peninsula County and attended Lincoln High School. Oliver has a strong affinity for his alma mater and actively sought to have college courses taught on the high school campus. Both of Oliver's children attended Lincoln High School, so he had a vested interest in programs that accommodated high school students with the interest and ability to take college courses.

Oliver is the epitome of a life-long learner. He holds several advanced degrees, including a Ph.D., D. Theology, and a JD, and has studied both in the United States and abroad. Oliver's teaching experience is also quite diverse and includes full-time positions at the high school and community college level, in addition to adjunct positions at several universities in the National Capitol Region. Oliver has taught college classes in Lincoln High School in support of the dual enrollment cooperation between the public school system and the community college and has also taught high school students in college courses who came to the college campus to do their coursework.

Paige

Paige is a 50-year-old, slender, short, and quite perky, Caucasian female, and a professor who teaches dual enrollment courses in the high school for students pursuing a professional certificate in one of the signature programs. She arrived early and was very relaxed during our interview, which took place in a conference room at Peninsula Community College. Paige holds both a Bachelor's and Master's Degree in Management. Before teaching at Peninsula Community College, Paige taught both traditional-age college students and adult learners who were either changing careers or returning to the workforce. Her experience as an academic advisor also made her a valuable resource to her students. Paige is a Subject Matter Expert on issues involving military families and has helped them navigate all facets of higher education.

Paige did not grow up in Maryland and is surprised at the variety of programs offered in Peninsula County High Schools and the number of students who enroll in college courses while still in high school. She is very enthusiastic about teaching college courses to high school students but acknowledges that the physical limitations of a high school classroom, specifically those related to technology, prevent her from ideal delivery of the content material. Paige believes the students at Airport High School are fortunate to have the transportation and cargo security certification available at their high school and believes that allowing every high school to offer a different program, or none at all, is a disservice to the potential students. Paige also teaches business courses on the community college campus and has high school students in her traditional college class.

Alan

Alan is a 53-year-old Caucasian vice president of a global transportation company. He is approximately 5'6" and very soft-spoken. He wore dress slacks, a white button-down oxford shirt, and a tie. Alan has a degree in accounting from a private university in Maryland and has

worked for the family firm since graduating college. He was very apologetic for taking so long to return my phone call and set up an interview and was initially a little hesitant to be recorded. The interview took place in the conference room of the corporate headquarters, which is located in an office park near a major transportation hub in Peninsula County. Alan works for a company that has been in the family for over 100 years. It is a significant player in global shipping and has several niche clients in addition to government and military customers. He emphasized the importance of interpersonal relationships in acquiring, and maintaining, partnerships.

Alan has supervised several student interns who have spent the summer learning all aspects of supply chain management and transportation logistics services in support of a certificate program offered at one of the Peninsula County High Schools. Alan knows that a four-year college degree is not necessary for many of the jobs in his company but having a background in business is an asset for potential employees in this growing industry. In addition, Alan is interested in maintaining the company's connection with Peninsula Community College and wants to explore workforce development opportunities through corporate training.

Bruce

Bruce is a 20-year-old Caucasian nursing student at Peninsula Community College. He arrived early for the focus group discussion, which was held in a conference room on campus. Bruce wore slacks and a collared polo shirt – atypical of the attire I see on students around campus. Bruce is very articulate and outgoing young man, who was entirely forthcoming during the discussion of his college experience while still a high school student. He spoke openly of the shortcomings of dual enrollment, offering solutions to improve the program, in addition to the positive aspects of being a college student before earning his high school diploma.

As a home-school student from neighboring King William County, Bruce brought a unique perspective to the discussion. He began his dual enrollment experience at Peninsula Community College when he was 16 because the programs that interested him had high rate of student failure in his home county. Bruce took his dual enrollment courses on the main campus of Peninsula Community College with traditional-age college students and other home-school students. Bruce has earned two Associate degrees from Peninsula Community College and plans to transfer into a four-year nursing program next fall and eventually become a nurse practitioner. He is very active in campus life as a member of the advisory board and the student representative to the Board of Trustees.

Helen

Helen is a 19-year-old Caucasian first year full-time nursing student at Peninsula Community College. She arrived at the focus group exactly on time wearing jeans and a hooded, lightweight, zippered fleece. Her long, dirty blond hair was gathered at the top of her head. She was well-spoken and thoughtful in her responses, pausing a few moments before answering the questions. Helen is transferring to a four-year university for the spring semester, and she plans to continue in the nursing program at the University of Medical Science until she receives her Bachelor of Science in Nursing (BSN). Like Bruce, she also plans on becoming a nurse practitioner.

Helen took one college course on the Peninsula Community College campus while still in high school. Her college transcript also contains credit from an Advanced Placement (AP) test because she earned a score high enough to receive college credit. Helen decided to take advantage of the Early College Access Program (ECAP) which allowed her to by-pass administrative and academic requirements imposed upon students who take dual enrollment courses. Helen describes herself as someone who can work independently, and as having

adapted to the college environment without the hand-holding that accompanies those who are formally enrolled in a dual enrollment course.

Julia

Julia is a Caucasian woman in her mid-forties who is one of the academic deans at Northern Community College. She is approximately five feet tall with short, dirty blond hair, and an amiable disposition. She wore slacks and a polo shirt the day of the interview which took place in her very tidy office. Even though I was 20 minutes early to our 8:30 am appointment, Julia brought me into her office and began the interview shortly afterward. Julia is new to her position at Northern Community College, but held a similar position in another community college for ten years before transferring to be closer to her home and to shorten her commuting time. Julia has a law degree but has focused her energies on workforce development initiatives by consulting with educators and employers to create pathways to meaningful careers. She believes that the use of technology can accelerate learning, and increase retention among college students, and was instrumental in starting a Cyber Center at Northern Technical High School to meet the workforce demands of a significant military employer in Central Maryland. Julia also works with a private school in Northern County to provide college courses for their business pathway, which replicates the courses offered at the Academy of Finance, a signature program in Darlington High School – a Northern County public high school.

Julia also oversees an initiative with the Northern Technical High School that awards college credit to students who complete a pre-apprenticeship program and later enroll in Northern Community College to complete an Associate Degree in for Technical and Professional Studies. This degree offers business courses needed by professionals in the trades who run their own business. Students at the technical high school may also take advantage of the dual enrollment business classes that are offered in high schools throughout Northern County.

Thomas

Thomas is a Caucasian in his late-fifties. He is approximately six feet tall, wears glasses, and has a receding hairline. He wore dress slacks and an oxford shirt with a tie. Thomas has a Master's Degree in Finance and Management and has spent over 20 years in apprenticeship training both as the coordinator for specific programs and as the director of training programs on the college level at Northern Community College and in a neighboring county. The interview took place in his office, with an associate who is involved with counseling. The three of us sat around a small, round table, which facilitated a very easy-going conversation. Thomas had several brochures that he handed to the researcher as their content was discussed.

It was evident to the researcher that Thomas is passionate about the need to educate young people in the trades, and that they graduate from the programs competent in their chosen profession. Thomas is spearheading more articulation agreements with trade organizations, which will result in college credit for students who participate in pre-apprenticeship programs while in high school and then transfer to the Technical and Professional Studies at Northern Community College. As "smart technology" makes inroads in the professional service sector, Thomas believes post-secondary education will be critical for those in the trades.

Leonard

Leonard is a Caucasian in his mid-forties, approximately 5'6", of medium build with dark hair. He wore dress slacks, and an oxford shirt with a tie. His role can best be described as an advisor to those looking to pursue a trade and earn an associate degree in Technical and Professional Studies. The researcher was 20 minutes early for the interview, and the receptionist indicated that the researcher would have to wait until the appointed time of the interview. After five minutes, Leonard came into the reception area, greeted the researcher warmly and escorted her to the office of his supervisor, where the three discussed the articulation agreements currently

in place, and those currently being negotiated for the trades. Leonard was very relaxed during the interview and did not hesitate to further explain the programs described by his supervisor. He understands the changing nature of the trades industry, such as HVAC and electrical, and encourages students to take advantage of the Business Management courses they can take while still in high school that will count as credit toward their Associate degree.

Xavier

Xavier is a 30-year-old, heavy set, African-American who is about 5' 8". Xavier wore a dark suit, with an oxford shirt and tie to the interview, which was conducted in his office/conference space at Northern Community College. Xavier is very enthusiastic about his part in creating the dual enrollment initiative in business and finance between the community college and the public school system and was very animated during the entire interview. The Academy of Finance signature program is physically located in Darlington High School, and Xavier maintains an office in the school, where he acts as the North Community College liaison. Xavier has expanded the availability of the two college business courses to all high schools in North County.

Xavier is a “one-man” and “one-stop shop”, who provides academic advising for students in the business program, creates schedules for students, advises students on career planning, develops action plans for the college to improve enrollment, prepares the monthly reports in support of grant-funding, develops community engagement plans to recruit students for the Integrated Business and Technology pathway, and much more. He is the point of contact for all county public high schools, and one private high school, that offer college business courses as dual enrollment electives. Xavier serves many students who come from lower-income families or where no one has previously attended college. He considers part of his mission to encourage

students to take a college course in high school, so they will realize they can be successful in a post-secondary educational environment.

Zach

Zach is a congenial African- American who is working on a doctorate in education and was very eager to participate in this study. He is an adjunct professor at Northern Community College and teaches two dual enrollment courses in business and computer information systems in addition to teaching in the Northern County Public School system. Zach earned a bachelor's degree in business education at a public university on the east coast and holds a state teaching license for grades 7 – 12. He is actively working to create a business certificate program that will bring more college courses into the high school. Zach believes that more opportunities are needed in high school so students from low-income households can take advantage of the reduction in tuition costs. In addition, he believes part of his job as an educator is to encourage students to take advantage of the opportunities that are available to them.

Isaac

The interview with Isaac was conducted over the phone due to logistical problems involved with connecting face-to-face. His path to a position in Northern Technical High School was quite circuitous as he was in a completely different career field. Isaac graduated with a political science degree from a university in a neighboring state and worked in a field related to his degree. Isaac became dissatisfied with the direction his career was headed and began substitute teaching while he decided what he was going to do next. Isaac discovered his calling as an educator and earned a master's degree in Special Education and certifications in English, social studies, reading, and work-based learning. He is in his fourth year as a work-based learning coordinator.

Isaac's position at Northern Technical High School is unique because it encompasses the responsibilities of an administrator, advisor, and teacher. Isaac believes there is no other position like his in any other county in the state. Isaac administers the work-based learning program at Northern Technical High School, advises students of the possibilities of being a pre-apprentice in any number of trades, and teaches a career and research development course with a focus of providing technical students with the soft skills that are needed for employment in the service industry.

Catherine

Catherine is a 50-year old Public Relations Specialist at Northern Credit Union, where she has worked for 30 years. Although she never completed her bachelor's degree, Catherine has moved up in the company by holding a number of positions which include being an administrative assistant, an executive assistant, a part-time teller, loan adjuster, back-up IT coordinator, payroll supervisor, and events coordinator for the Board of Directors.

Catherine was the marketing director of the Youth Savings Accounts programs at the credit union and is very proud in her role in expanding the credit union savings clubs from the high schools and into the middle and elementary schools in Northern County. Catherine is very enthusiastic about her role in providing internship opportunities to students in the Academy of Finance at Darlington High School and praised the graduates of the program who have worked at Northern Federal Credit Union.

Paul

Paul is a master tradesman who owns his own company and provides pre-apprenticeship opportunities to students at Northern Technical High School. He began his own business when he was 26 with \$4000 and now sets his own schedule. Paul is proud to say that he has no debt and owns everything he has – home, car, business van, and equipment for his trade. He believes

it is vital to encourage young people to consider the trades as a profession because only one person is entering the field for every four that are leaving. Paul believes the school system works against the best interests of the students that is, providing competent and experienced instructors, because of the requirement to hold state teacher certification in order to teach. He explained that this would require him to take a substantial cut in pay in addition to paying tuition charges for education courses.

Paul supports work-based learning because he can teach soft skills, such as customer service and communication, in addition to technical skills such as troubleshooting and repair, which are critical to having a successful business. He encourages students to take advantage of the opportunity to earn a year of college credit through the work-based learning program and dual enrollment opportunities offered at Northern Technical High School and to complete the Technical and Professional Studies Associate degree with an emphasis in Business Management.

Peter

Peter is 19-year-old college freshmen at Northern Community College. He is of South Asian origin and is majoring in business. Peter was dressed in khaki colored jeans and a t-shirt. He was clean shaven and has short, wavy, jet black hair. Peter was in the business pathway program when he was in high school and took Introduction to Business and Accounting as dual enrollment courses. When the researcher arrived for the focus group, Peter was in a conversation with Zach Grant – his dual enrollment professor from high school and a current professor at Northern Community College. Peter was very relaxed speaking with his professor and was very open and forthcoming in his responses to the focus group questions. Peter will be taking the next semester off to complete basic training with the Air National Guard, which he joined in order to get educational benefits that will allow him to pay for his Associate degree and continue his

education at a four-year, in-state institution. Peter is not sure of his exact career path, but he knows it will have something to do with business.

Brad

Brad is a 19-year-old Caucasian freshman at Northern Community College majoring in business. He is about 5' 8" with short brown hair. He arrived at the interview in gym shorts and a t-shirt. Brad had just been informed that he was being offered a paid internship at a credit union and would make \$12.50 an hour for a 30 hour a week position. He was very excited about the prospect of earning enough money to pay for his tuition at Northern Community College. Brad took a business dual enrollment course in high school because he wanted to obtain his NAFTrack certification as quickly as possible – he was successful in that endeavor before he graduated high school. Although Brad was a soft-spoken participant in the focus group, he answered every question and volunteered some additional information. At times, he seemed a bit overwhelmed by Peter.

Abigail

Abigail is a 19-year-old college freshman majoring in finance at a Historically Black College in the mid-Atlantic region. Due to the distance between the focus group site and Abigail's location, she phoned into the session via a conference call. As a student in Darlington High School in North County, Abigail participated in the business pathway program and took two courses – Introduction to Business and Accounting. Abigail credits her ability to manage her time as a freshman at a four-year university to her dual- enrollment experience. Abigail was excited to connect with some of her high school classmates via the focus group and eagerly shared her experiences.

Francesca

Francesca is a 19-year-old college freshman in a nursing program at a Historically Black College on the east coast. She lives on campus and participated in the focus group by phoning in on a conference call. As a student at Darlington High School, she took advantage of a dual enrollment business course. Although her major is nursing, Francesca believes that having a basic knowledge of business will help her in her career at some point in the future. Like Abigail, Francesca was excited to reconnect with her classmates and share the impact that her dual enrollment experience was having on her success in college to date.

Results

The results for this qualitative multiple case study were developed by careful analysis of the data collected through individual interviews, focus group interviews, and documents. This multiple case study uses both a within-case synthesis and a cross-case synthesis to explain the findings. A detailed review of the interview transcripts was used to develop codes. The codes were then organized into themes which occurred throughout the cases. The participant responses were then used to answer the central research question and the five sub-questions. Manual, open-coding was used and applied to the interview transcripts, the focus group transcripts, and the documents. A total of 49 codes were compared across the different stakeholder participant groups and the focus group. The codes were then compared with select documents to determine similarities. Five themes were developed from the codes.

Within-Case Synthesis

The two partnerships in this study are located in central and northern Maryland. Both of the community colleges serve areas that are economically and ethnically diverse encompassing communities of middle and upper-middle-class professionals, working class tradesmen and service workers, and agricultural workers. Both colleges have articulation agreements with the

public school system and private high schools, in addition to four-year universities, so students can make a seamless transition in their pursuit of a bachelor's degree. Provisions are also made for home-school students who wish to avail themselves of the opportunity to earn college credits before completing their high school graduation requirements. The public school systems in both counties are quite large, with 13 traditional high school and two vocational-technical high schools in one county and nine traditional high schools and one comprehensive high school with a vocational-technical center in the other.

Peninsula Community College has a long history of providing high school students the opportunity to earn college credit, even before it became a requirement according to Maryland law. Sean, who has been working at Peninsula Community College for 23 years, said that “concurrent enrollment has been available in Peninsula County since 1998. Two high schools were on a 4-period class schedule so most of their students could earn their graduation requirements by the end of their junior year.” The college began a “Jump Start” program which provided high school seniors with an early dismissal alternative to working in minimum wage jobs. As an administrator, Sean provided some input into the articulation agreement between the community college and school system after SB 740 became law.

Each comprehensive high school in Peninsula County has a unique signature pathway program, and some also have a college course component. Robert, an administrator at Peninsula Community College, is responsible for staffing the six courses that are part of the Transportation, Logistics, and Cargo Security signature program at Airport High School. Robert said he is “not responsible for scheduling classes in the high school,” but he does staff the face-to-face classes with professors from the college and “internship program in addition to working with the school system to select the internship sites.” From the college perspective, no change in the curriculum was needed because the International Trade, Transportation, and Tourism pathway at Airport

High School accepted the college curriculum “as is.” Students who complete the requirements receive a professional certificate and may then enter the workforce with credentials or continue onto the Business Field of Interest at the community college, with 18 transfer credits toward an associate degree.

Transition advisors, who are employees of Peninsula Community College, are embedded in three Peninsula County High Schools. Quinn is at Airport High School to “help students transition from their high school experience to their college experience.” Airport High School has a student body that is almost 50% minority students and almost 50% of the students receive free breakfast and lunch at school. Although the high school has counselors for academic advising, Quinn says that he provides a bridge between high school and college for the students in the signature pathway program. He helps students complete the college application paperwork and other required forms in addition to counseling students on time-management and other responsibilities of being in college.

High school students who do not attend Airport High School and wish to participate in the Transportation and Cargo Security Certificate program may do so by registering through the Early College Access Program and taking classes on the main campus of Peninsula Community College. Paige, a community college professor, who teaches several of the courses in the certificate program at Airport High School, also teaches on the main campus. She applauds the partnership between the college and the public school because “if the classes were not offered on site [in the high school] most students could not get [to the main campus] because of a lack of transportation.” Although, in her college course taught at the high school, Paige teaches the same curriculum as the college course taught at the college, she has some problems with the classroom to which she has been assigned because “there is no whiteboard, there is no podium, ...there are so many firewalls in place.” She is unable to access material from the internet that

she needs for her lectures. Technology issues present one of several barriers that create problems for college employees teaching on the high school campus.

An integral part of the certificate program at Airport High School is the relationship with a business partner. Sean said, “The internship is absolutely required, so we need business partners. They are absolutely critical. The business partners were actually involved in the design of the curriculum.” The proximity of Airport High School to an international airport and water port provides real-world opportunities to students seeking certification in transportation and cargo security. Alan, one of the business partners, said “there are benefits to both sides. We (cargo security) are an unknown industry and that is why we are looking to build more relationships [with high schools].” The internship program that Alan has developed with the college exposes students to the air and ocean transportation aspects of the import and export business.

Northern Community College offers several alternatives to students who wish to earn college credit before they graduate from high school. Julia, a dean in one of the programs that includes workforce development, said the “college has a nice robust program which just recently expanded this fall, in accounting and business management...We run ten sections a semester across all county schools (to include a private high school). The college is looking to expand its partnership with Northern Technical High School and offer courses in cyber-security as dual enrollment courses.” The college already has an agreement to offer college credit through a pre-apprenticeship program with the trades, supporting one of the goals of the Governor’s P-20 Council recommendations.

The Academy of Finance signature program is located in Darlington High School, which has a 64% minority population (Black / African-American, Latino), 66% of the students have limited English proficiency, and 32% of the students receive free and reduced priced meals.

Students in the signature program take two college courses in their high school. The course is delivered online by a business professor from Northern Community College, with a public school teacher assigned to monitor student activity during the scheduled class time. Julia said, “This year the college added the requirement that the online professor meet face-to-face with their students three times during the semester and do a skype or video session three times throughout the semester.” Although the Academy of Finance signature program is only offered at Darlington High School, all county high school students can take the dual enrollment courses at their own high school because of the online format.

Xavier is a career navigator funded through a Perkins Grant and assigned to Darlington High School. His responsibilities resemble those of a counselor, with additional duties as a program administrator. Xavier explains his role in the school is to assist business pathway teachers with the registration and placement of their students in dual enrollment business courses to complete the requirements of the business pathway in the Academy of Finance. He said he “assists with the advertisement and recruitment of students who are going into their senior year and is in charge of sessions to inform parents of the offerings and the requirements to be part of dual enrollment.” He assists students applying to the community college and completing the waiver forms they must submit to receive a reduced tuition rate for their college courses.

Northern Community College delivers dual enrollment business courses in an online format taught by their professors. The online format allows the college to offer the same courses to all of the county comprehensive high schools regardless of the course enrollment in a single high school. The online format mitigates problems and the only requirement is that students be assigned to a computer lab for a specific instruction block to access course material. Zach is an adjunct professor who teaches two online, dual enrollment courses for Northern Community College. He explained that he works with “the in-classroom teacher in order to set up times

where students can be provided with feedback to questions, and to provide students with direct feedback using their blackboard portal and emailing system.”

A unique feature of the Academy of Finance is its relationship with Northern Credit Union, which offers job-shadowing opportunities to students in addition to internships. Catherine explained that her company, “has the expertise and passion to drive forward and give opportunities to students in this Title I school.” The credit union does this with an eye to having future employees. Catherine is well aware of the impact the Academy of Finance education has on the students and stated, “When you give them a chance, some will come back and serve your community.”

Northern Technical High School is a magnet high school and is co-located with Northern Community College. The school offers a wide variety of career and technical courses with pathways in cybersecurity, nursing, computer-assisted design, HVAC, and electrical to name a few. The college is working toward creating dual enrollment opportunities with the cybersecurity program, which is only offered at the technical high school. Students in the technical high school who want to take dual enrollment courses can take courses on the college campus with traditional college students. Thomas is an administrator at Northern Community College with the task of “developing pathways for students in the trade areas to come through the college’s apprenticeship programs” during their senior year in high school. Upon successful completion of this program, students can earn up to 20 credits to be applied toward an associate degree in Technical and Professional Studies, in addition to validating the first year of college classroom instruction.

There is no formal agreement between Northern Community College and Northern Technical High School to provide counseling assistance to students interested in the apprenticeship program. Nevertheless, Leonard, an advisor at the college, makes himself

available to high school students interested in the trades. Leonard says, “these are hands-on guys who may want to start their own business. They can take a business administration and business management class.” Students in the technical high school have to complete several rotations in different trades. Leonard adds, “if they select the business track as one of the available rotations, they [the students] can receive six college credits even if they do not participate in the pre-apprenticeship program.”

Northern Technical High School has a navigator who works with seniors who have been accepted into the apprenticeship program. Isaac is the manager and coordinator of the work-based learning program, and he works with students to “teach soft skills – interview skills, resume writing, budgeting, and credit card use. It is also part of the work experience.” Isaac connects the students with employers who provide training in a specific trade. The Governor’s P-20 Workforce Council recognizes the importance of having a skilled workforce in the trades and Isaac reinforces this need. He said that employers always tell him that “my workforce is retiring; my workforce is under-trained. They are not cognizant of what is needed in the job.” The pre-apprenticeship program gives students the opportunity to learn a trade through hands-on experience with the option of converting that experience to college credit.

A crucial element in this partnership is a connection with tradesmen who offer one-on-one opportunities to students. Paul, a master tradesman who grew up in Northern County and began his business with \$4,000, now earns \$200 an hour. He is concerned that the push to have everyone go to college after high school is part of the reason there is a shortage of skilled labor. Paul provides real-world training that is not learned in the classroom – how “to troubleshoot a problem, diagnose, and repair a problem,” in addition to soft skills such as customer service “going up to a door and introducing yourself. Even if you don’t go into [a trade], you learn how to deal with people, and that is very important.” The possibility of converting the work

experience into college credit toward an associate degree also allows students to learn the skills necessary to run their own business.

Cross-Case Synthesis

There are a number of similarities and some differences in the way the community colleges in this study are seeking to fulfill the mandates of Senate Bill 740 and the recommendations of the Governor's P-20 Workforce Council. Both colleges allow high school students to enroll in college courses on campus and experience college as a traditional college student. Students may also take online and hybrid classes. Students who want to be on campus are responsible for their transportation. On campus courses are available to private school students and home-schooled students at reduced tuition.

Both colleges offer college courses at the high school; however, Peninsula Community College only offers face-to-face courses that are taught by professors from the college. If a prescribed minimum number of students do not register for a course in a particular high school, the course will not run. Courses offered in the high school support a specific signature program, although they are open to other interested students, and only five of the thirteen high schools offer dual enrollment classes on-site.

Northern Community College offers online courses in the high school which are taught by college professors from a remote location. A high school teacher is assigned to a dual enrollment course delivered to the high school and functions as a teaching assistant. Online courses do not need to meet a minimum registration at each high school – under-enrolled sections will be combined until the minimum is reached. Two business courses are offered in all county comprehensive high schools, regardless of the signature program that is offered. Northern Community College goes one step farther and offers credit for an approved pre-apprentice work experience that can be applied to an associate degree.

Having dedicated college counselors assigned to the high school is not the norm; however, all students who are enrolled in the community college may take advantage of all of the services offered to traditional students, including counseling. Both colleges maintain the same standards for professors who teach high school students and those who teach traditional college students.

Peninsula Community College has an established relationship with business partners who provide internship experiences to dual enrollment students. Northern Community College has both a long standing relationship with the local credit union which offers internship opportunities to students and an established pre-apprenticeship program with local tradesmen.

Peninsula Community College is open to offering more college courses in the high schools. However, there is a long lead time because college professors have to undergo a criminal background check and other administrative procedures required of public school teachers. The college considers requests as the school system presents them. Class schedules are also a problem, since the college and public school system follow a different calendar. Northern Community College avoids some of the scheduling problems in expanding its course offerings on the high school campus because it delivers its courses online. The college is working through a new articulation agreement with the Technical High School to offer a cyber-security program, but the students can walk across the street to the college campus.

Theme Development

Themes were developed from one-on-one interviews, focus group responses, and documents. An analysis of all transcripts yielded 49 codes which appeared in two or more of the participant groups – administrators, business partners, counselors, professors, and alumni. The codes were then compared with select documents for similarities. The codes were recorded on a table in a Microsoft Word document to show similarities across different source of data

(Appendix E). The codes were then reduced to major themes – scheduling, curriculum, obstacles, maturity, and time management (Appendix F).

Scheduling

All of the participants indicated that scheduling was a factor in maximizing the ability to offer college courses to high school students. Although both county public school systems have a four x four block schedule – four classes meet on “A” and “B” days – which allows students to take eight courses a year, the high school academic calendar does not match the college semester system. The method of delivery – face-to-face vice online – impacts the ability of the college to offer courses that the high school principals would like to offer on their campus.

High school students with sufficient credits to graduate may obtain a waiver for early dismissal from high school to attend college. Sean, an administrator at Peninsula Community College, has “long advocated to add more sections at times when [high school] students can come [to campus].” This change would allow high school students to be in classes with college students who are closer to their age group.

The high school schedules college courses that are offered at the high school. Robert, a program director at Peninsula Community College, said this is a challenge because “I don’t always have people available during the day.” There is also a problem with last-minute changes because there is “so much pre-employment stuff that goes on in the high school...have to be finger-printed and do an FBI background check. [For the] community college, people have to know Canvas 1, Canvas 2, Security Training, and Women and Violence training.”

Oliver, a college professor who taught his course in the high school, noted there are problems when the sessions are “out of sync. We still have a few more sessions [at the high school], but grades are due to the college. It doesn’t line up. Even the 13-week sessions start at separate times.” This problem was exacerbated across the state with a new mandate in 2107 that

public schools cannot start their academic year until after Labor Day - community college courses begin in the fourth week in August.

Scheduling college courses on the high school campus is not much of a problem for Northern Community College and the public school system with which it partners, because the college delivers its courses online. Zach, who is the professor responsible for two business courses, said that the students “meet in the computer lab and work on the assignment. They go to the folder for the instructions, read the content, read the chapters, they all participate.” A high school teacher is assigned to the computer lab and acts as a teaching assistant, but the course can be scheduled for the students without the concern of professor availability during the academic day.

Internships and apprentice programs require a specific number of hours to be completed in order to receive college credit. Alan said, “The school imposed the total hours, and then we worked with each student and what worked best with their schedule. They were here five to six weeks for five to six hours a day.” Paul was able to have his student a full day every other day, because the student “has math, English, guitar, and facilities management on “A” days. On “B” days he’s with me.” Having large blocks of time scheduled into the workday is essential in simulating the experience of working a specific industry or trade.

As a student, Helena was able to take advantage of a program that allowed her to leave high school at 10:30 a.m. after her two classes. The early dismissal allowed her sufficient time to get to the community college to take her class on campus with traditional-age college students. The scheduling of college courses was not a problem for Bruce, a home-school student, who only had to demonstrate that his college courses aligned with the state high school graduation requirements. Students who took their dual enrollment courses online did not indicate any scheduling problems from their perspective, although the high school counselors may have had

problems scheduling a computer lab, so the students could have remote access to the course materials.

Curriculum

A change in state graduation requirements has driven some curriculum changes in public high schools. Students now are required to complete 26 credits, to include four credits of English and mathematics, and demonstrate proficiency in Algebra 1, English 10, biology and government, to receive a high school diploma. In general, students have the opportunity to take eight elective courses to fulfill the requirements of cluster completer programs, magnet programs, signature programs, or dual enrollment programs. Dual enrollment courses are reviewed annually and vary by community college and public school system.

In general, the public school system or private high schools contact the community college to bring more college options to the high school campus. According to Sean, the college has “offered courses that naturally complement the signature programs. We have criminal justice, sociology, and homeland security courses at Defense High School.” When Airport High School developed their signature program in international trade, tourism, and transportation, Sean said, “There were no changes to the [transportation and cargo security certificate]. They took the program as it was [in the college], including the mandatory internship course.”

The counselors who advise the students encourage them to examine how their courses relate to potential fields of interest or college majors that they might wish to pursue after graduation. At this time, Peninsula Community College offers college courses on four high school campuses to support the signature pathways and at the early college charter high school to support a Transfer Studies degree. Karen, who assists students who ultimately hope to transfer to the University of the Mid-Atlantic, advises students who are contemplating dual enrollment courses to take “their lower level general education courses and get a transfer associate degree”

to ensure a smooth transition. For a high school student, the objective is to “save time and money.” Psychology is a popular option for students who only take one college course.

Professors who teach college courses on the high school campus are quick to point out that the course content and expectations are the same for the high school students as they are for the traditional students taking the same class on the college campus. Paige, who teaches business courses for the certificate program at Airport High School believes there “should be a difference in the how the course is delivered and the type of assessments that are given, because the students don’t have a frame of reference.” The signature coordinator at Airport High School assists the students with writing assignments to ensure they are college-level products. Oliver, a sociology professor who has also taught college courses on the high school campus, does “not treat the students any differently than the college students” on the college campus. Even though they have not graduated high school, Oliver believes the students “need to understand their responsibility as college students.” Zach taught online business classes and said, “I teach exactly the same curriculum to dual enrollment high school students as I teach to my fully-enrolled college students.”

Obstacles

Senate Bill 740 required community colleges and school systems to partner with each other to provide opportunities for high school students to take college courses before their high school graduation. There was general guidance on student cost, but each county determines how much it subsidizes student tuition. Transportation to the college location was not addressed in the legislation. Advertising dual enrollment options for high school students and enrollment procedures were not addressed either.

Transportation is a significant obstacle to high school students accessing college courses. Although several high schools offer a limited number of college courses on their campus, the

courses support the signature program. If a student is not in a specific signature program, the student may not be able to take the course. “Lower-income students don’t necessarily have transportation [from their high school to the college],” said Sean, “or they are working after school to help support the family.” Even though the opportunity exists, some students cannot take advantage of it. A private donor made transportation arrangements for one high school to shuttle students to the community college. Even with transportation provided course options were limited because the students had to return to their parent school in time for the high school dismissal. Alan was a bit surprised that transportation to the work site was an issue for some students who “had to make some effort to get here.” Transportation can be an issue for students trying to earn credit in the pre-apprenticeship program as well, because “students have to have a car to drive themselves to the job. This could be a problem for low-income families,” explained Isaac.

Senate Bill 740 allows for a 50% tuition reduction for students who take college courses while still in high school, but even this discount does not provide sufficient relief for some students to take advantage of the opportunity. Julia explained, “the free and reduced-price lunch (FARM) kids don’t have to pay tuition. One of the challenges for low-income families, though, is that they still have to pay for books. I am looking for a way to put the Perkins money into textbooks.” There is some relief for students who qualify for the Early College Access Grant. Sean said, “[there is] a pool of state money that is reserved from the Maryland part-time grant, specifically for dual enrolled high school students. The students fill out an application form...for student aid. It’s \$200 a semester, so you are just paying fees.” Even with this assistance, students and their parents are not always aware of their options.

Robert used a grant from the National Science Foundation to fund recruiting efforts targeting parents because “recruiting parents is sometimes more important than recruiting

students... We want them on board. We think this is a great career [transportation and cargo security] that offers opportunities.” Xavier said that one part of his responsibilities under the Perkins Grant is to “advertise and recruit students who are going into their senior year and come up with sessions to inform parents of the offerings and what is required to be part of dual enrollment.” Quinn views part of his job as “selling the idea of the college experience [while still in high school] before you go there [after graduation].” He assists the students in selecting the courses that will best serve the student’s transition into the full college experience and then guides them through the administrative process of enrolling. Many of his students are at a disadvantage because no one in the family has college in their background. Thomas said that “admissions counselors and academic advisors set up Personal Registration Days and go into the high schools and meet with students” to assist them in setting up their dual enrollment courses for the following semester.

Maturity

This theme has two parts – academic maturity and personal maturity. Participants noted that although high school students might be academically capable of completing college courses, they do not bring the same background knowledge to a course as an older student with more experience. Personal maturity assumes that a student will seek assistance from professors when they need help understanding course content or will formally drop a class, rather than stop attending class, if it is too difficult. Professors noted that some high school students still operated with a high school mindset – assessments can be retaken if a student does poorly, assignments can be turned in late for reduced credit, and excused absences do not count as missed classes.

The original “Jump Start” program began in the late 1990’s and targeted high school seniors in public schools who were ranked at the top of their class and had completed their

graduation requirements. Offering them the opportunity to take college courses on campus at a reduced rate was an incentive for them to do something academically rewarding with their time and give them a taste of college life so they could make a smooth transition into being a full-time student. These students were already academically successful, and Sean explained:

Prior dual enrolled students who continued with us after they graduated tended to have a higher GPA than the student body as a whole. They had a higher fall to fall retention rate than the student body as a whole, but with all of this expansion, and SB 740, and because of the population growth, you are getting more of the average student. They are not all high flyers and there are some that are not going to make it.

Sean emphasized that the expansion of the program now allows students from private schools, faith-based schools, and home-schoolers to participate and receive the tuition reduction.

Karen, who advises students who are thinking of attending a four-year university, believes that course “content is not an issue, but we do find that a 16-year-old, or in some cases a 14-year-old, processes information, even if it is in the same textbook, differently from a 20-year-old sophomore in college.” Paige’s experience teaching business courses at Airport High School supports Karen’s observations. She said, “it is challenging to teach high school students about business when they have not had a job. Business requires that they have an understanding of politics and the economy. They don’t have much exposure.” She noted that the high school students who come to the college campus and take the same business class have a “much better pulse of what is going on.”

Oliver noted that, even though some of the college courses taught in the high school require students to achieve a college-credit ready score on a placement exam and have the minimum grade point average to enroll in a college-credit course, this is not a predictable

indicator of a student's maturity level to meet college expectations. He has observed a difference in student attitude when the college course is taught in the high school.

Some of the high schoolers struggle because it is a different culture and less hand-holding. I had two students at Security High School, and these guys did fairly well throughout the semester ... and they disappeared at the very end. They just did not do the final paper and their final assignment. Ultimately, they did not do as well as they could have. So, there is a maturity gap, and I would suggest that for classes in the [high school] building that we have to encourage a different level of maturity because kids are very immature in high school.

Oliver emphasized that there is no hand-holding in the college courses and it is up to the students to seek assistance when they need it.

Bruce, a college student who availed himself of many dual enrollment opportunities, is an example of the problems Paige and Oliver witnessed regarding student maturity. Bruce admits that he did not give "college as much respect as I should have been giving it, so when I hit that roadblock, and did not get the help I needed, I just quit coming to class, which doesn't withdraw you." His grade point average dropped from a 4.0 to a 2.3, and it changed the trajectory of his degree completion plan.

Time Management

Time management can be a challenge for traditional-age college students and other adult learners who have the responsibility to set their own schedule. For high school students, time management is problematic because their schedules have been set for them, often without their input. As college students, dual enrollees are not likely to receive special reminders from professors that their homework is late, papers are due, and there is a test next week.

Julia has instituted new face-to-face and Skype requirements for faculty who teach online dual enrollment courses in the county high schools. She wants students to have a positive experience, so they will continue their education at Northern Community College. Julia explained:

A lot of our faculty are headed out this week to greet their students, introduce themselves, tell them what their expectations are. I think, in the transition from being a high school student, a lot is handed to you and there are a lot of expectations and deadlines. In addition, we do boot camps about being a college student – time management and self-management as well. We want to make sure they have a solid experience that is accompanied with the academic rigor of college life.

There is a special session just for high school students, although similar sessions are provided to traditional college students as well.

Students in the pre-apprenticeship program also have issues with time management. Isaac observed that many students get so involved with their work that they let their academics slide. He said, “Quite often I see kids burning both ends of the candle. Students who work too much even against my advice. Students who don’t finish their school work in a timely manner because they would rather be at work. A lot are sick because they overwork themselves.” Occasionally, Isaac intervenes on behalf of the student if he discovers that the employers are creating the situation.

High school students do not always understand that when they are taking a college course, they must follow college expectations. From his conversations with dual enrollment students, Quinn sees that some still have a high school mindset and students do not always put emphasis on their college classes. The academic advisors do refer students to mental health

counselors if they think it is warranted. As dual enrollees, high school students have all of the privileges of traditional students.

Connor, a current college student, reflected on his dual enrollment experience. He said that time management was an issue for him because he was also taking AP classes and there was so much work that he really needed to manage his time. Connor admitted that he had some high school teachers who would allow students to turn in assignments late and take off a few points. He noted that it is different in college and “you are really lucky to get any credit at all.”

Research Question Responses

The research questions were developed from the literature review which examined the partnerships between community colleges and public school systems to provide college courses to students who were still in high school and the different models of course delivery. The central question was designed to discover how the programs prepared students to be college and career ready. The sub-questions were designed to explore the role of specific stakeholders in supporting the partnerships discussed in the central question. The sub-questions were answered by using the five themes that emerged from an analysis of the codes which were identified while analyzing participant responses and documents. By combining the answers to the sub-questions, a detailed response to the central questions was developed.

Central Question

The central question for my study was: How does the partnership between the county public schools and the community college prepare students to be college and career ready through dual enrollment programs that offer career pathways to post-secondary education? The debate regarding how best to prepare students for the 21st century workplace continues. One of the requirements of Senate Bill 740 is the presentation of an annual report to the Maryland General Assembly and the Governor on the status of dual enrollment across the state.

According to the December 2016 report to the General Assembly, dual enrollment in Maryland is increasing year to year not only for the number of 12th grade students taking advantage of the opportunity to earn college credit while in high school, but the number of underclassmen taking college courses in high school is increasing, also. In the two counties that were examined in this study, students who completed college classes before they graduated high school matriculated into post-secondary education at a rate 14% higher than those who did not (Hennenberger et al., 2016).

In order to earn a high school diploma in Maryland, students are required to take 26 courses: four courses in English, four courses in mathematics, three courses in social studies, three courses in the sciences, one course in health/physical education, one course in the fine arts, one course in technology education, two courses in a foreign language or advanced technology, and other electives. Documents publicly available on the county public school websites indicate that courses have been organized into career clusters, which are available at all high schools, and signature programs, which are unique to each high school.

Articulation agreements between the community colleges and public school systems determine the college courses that may be substituted for high school requirement for graduation or to satisfy course requirements for the career clusters. Several of the signature programs award professional credentials upon completion of a specific sequence of courses. The colleges offer courses on the high school campus, on the college campus, and online. Students who come to the college campus are in classes with traditional college students; online classes may be for high school students only, or they may have a mixture of high school and college students.

The community colleges in this study were eager to support high school signature programs by offering college courses on the high school campus taught by college faculty. These courses supported the signature programs that resulted in certificates in Transportation and

Cargo Security and STARS certification for Geographic Information Systems. A certificate for Business Management is also being developed. The college credits earned through these programs may be applied to a degree or offered as credentials for employment.

Dual Enrollment and the Early College Access Program offer an inexpensive way for students to earn college credit. Senate Bill 740 does not allow the college to collect tuition from the students; instead, the public school system receives a tuition bill and is reimbursed through student payment. Under the arrangement, most students receive a 50% tuition discount; students who qualify for free and reduced-price meals usually pay no tuition at all. This saves students time and money and opens up the possibility of post-secondary education to students who never considered it as an option. In addition, students have the opportunity to explore career fields and acclimate themselves to the academic demands of college courses.

High school students who enroll in college courses have all of the rights and privileges of a college student, to include academic counseling and advice on course selection. Both community colleges send admissions counselors and academic advisors into the high schools to assist students, and their parents, with the registration and course selection process. This is particularly helpful to students who are the first in their family to attend college. Providing students with academic counseling at the beginning of their college journey, even though they are still in high school, helps students to understand the requirements of their field of interests and increases the likelihood of degree completion.

Regardless of class delivery format, Paige and Oliver, both professors of dual enrollment students reported that they treated the students as “college students because they are college students.” The professors emphasized that the students are responsible for reading the syllabus, reading the material, and completing assignments on time. Students who approached college classes with a high school mindset sometimes students learned a difficult lesson. Counselors

also continually reminded students that they were “college students” if they were enrolled in a college course and not a high school student in a college class.

Each high school establishes business connections with partners who support the signature programs. In some cases, this partnership involves internships for college credit. These work opportunities expose students to job options within a career field and give them a chance to reassess their choices and develop soft skills that may be taught in a classroom, but which can only be honed by working in the field. Based on the responses from the students that participated in dual enrollment in high school, the experience was beneficial even when the classes themselves were not directly related to their chosen field of study.

Sub-Question One

The first sub-question was: how do curriculum requirements impact the academic schedule and support the career pathways initiative with dual enrollment? The themes of schedule, curriculum, and obstacles were used to answer this question. Curriculum requirements exist on two levels – the high school and the community college. The high school requirements are in place to support signature pathway programs which are developed by individual high schools. College courses are not required to be part of the high school signature program, but those signature programs that include college courses are taught on the high school campus and scheduled by high school administrators. A review of the associate degree requirements indicates a connection between the high school pathways and the fields of interest at the community colleges.

Sean explained that some of the requirements for the college courses require students to leave their high school campus and miss other classes for “field trips to the airport, to the harbor. They get to see the education and training in action in real life and what goes on in the transportation security industry.” Sean went on to say that, “A new signature pathway in Social

Enterprise began this year in Bay Area High School. Everybody does BPA 111 and BPA 162. We [the college] will pick the four remaining courses in consultation with the school.” Students who continue at Peninsula Community College will have 18 credits toward a degree in business management. The high school schedules the classes for the afternoon blocks after the students have been formally released from high school. Students who want to pursue certificates in transportation and cargo security or social enterprise, and do not attend Airport High School or Bay Area High School, can receive an early release waiver from high school and travel to the college campus and take the courses. An obstacle to participation in on-campus courses is transportation, which students must provide for themselves. If the course is taught online, this obstacle is eliminated for students who are unable to travel to the campus using private or public transportation.

According to Julia, “professors for Northern Community College deliver online courses and a public school teacher is in their classroom, so they have assigned class time, and the teacher acts like a TA in the class.” This arrangement allows the two dual enrollment business courses offered to county high schools to be scheduled at any time during the day that a computer lab is available. Students at the technical high school who want to take the dual enrollment business classes walk across the street to the community college campus. Northern Community College also offers an option where high school seniors can waive all of their senior year and take classes exclusively on the college campus. Students can then pursue any career path they qualify for and any approved dual enrollment courses may be applied to their high school graduation requirements. Although this option gives high school students control over their schedule and their curriculum, transportation may still be an obstacle for students who cannot arrange transportation to and from the community college.

Students approved for the pre-apprenticeship work program may also receive a waiver and be released from high school every other day, or every afternoon, to fulfill the work requirements of their pathway. They receive credit toward a Technical and Professional Associate Degree and completing their apprenticeship program and enrolling in Northern Community college. An obstacle to participation in the pre-apprenticeship program is the requirement that the student have transportation to the work site.

Sub-Question Two

The second sub-question was: how does the high school and college counseling process support dual enrollment programs? Elements of all five themes – schedule, curriculum, obstacles, maturity, and time management – were used to answer this question. During the counseling process, students receive assistance in reviewing the curriculum requirements for their course of study and are scheduled for classes. Counselors help students with the community college application process, the financial aid application process, and placement exam testing. For some high school students, the paperwork and financial requirements might have been an obstacle to enrolling in college courses. The counseling process emphasizes the maturity and time-management that is necessary to be successful in college courses.

Counseling of students about their dual enrollment options takes place in several ways – there are program navigators who work with high school students in a specific high school, there are college advisors embedded in high schools, there are community college advisors on the college campus who counsel high school students, and there are advisors from specific four-year universities assigned to the community college who advise high school students on college course selection.

The Career and Technical Advisor at Northern Technical High School works with students on the soft skills needed to be successful in the trades, explains the dual enrollment

possibilities for the English and mathematics requirements for high school graduation, and works to place students with an appropriate employer. The first year of the pre-apprentice program also counts as the first year of the college's program which ultimately leads to a Technical and Professional degree.

Xavier is the career navigator for the Northern County High School to College enrollment program and is physically located in Darlington High School. Xavier explained his responsibilities to this program this way:

I assist Northern County Public Schools, business pathway teachers with the enrollment of their students, placement of their students with the selection of their courses, advisement of the Northern County Public School teachers on what courses would be offered to students and begin to place those students into specialized class sections opened to students in Northern County Public Schools.

He believes that students trust advisors who can explain how dual enrollment will benefit them financially and with their career aspirations. He then helps with the paperwork necessary to enroll in the college and register for the business pathway courses.

Quinn, an academic advisor for Peninsula Community College, is assigned to Airport High School. Although the high school would like him to focus on the students in the Transportation and Cargo Security Certificate program, Quinn prefers a one-on-one approach that focuses on the student's interests. He helps promote a variety of college options for the students and tells them to consider "the course that is best going to suit you in the transition to the full college experience." Quinn also sells dual enrollment options by explaining its benefits versus the Advanced Placement program, which he believes has become diluted over the years. He has worked with principals who "shove legions of kids into AP, whether they belong there or not, just to make their [school principal's] numbers look good. Then the kids come back with a

score of 1 or 2, and you know something is wrong.” A dual enrollment student, on the other hand, does not get a grade based on one test, but after a semester of satisfactory work, he will receive course credit on a college transcript.

Finally, the pre-transfer advisor from University of the Mid-Atlantic is assigned to Peninsula Community College. Although her primary responsibility is not to high school, dual enrollment students, Karen does meet with these students when they request an appointment to “help them work out a plan and select courses that will support a degree for the university.” A similar advisor is at Northern Community College for students who wish to apply to Timberlake University, which is co-located with Northern Community College.

Sub-Question Three

The third sub-question was: how do instructors of dual enrollment courses describe their experiences teaching high school students in college courses? The answer to this sub-question is informed by the themes of schedule, curriculum, maturity, and time-management. The professors in this study taught dual enrollment students in face-to-face classes in the high schools and on the college campuses, online with high school students only and online in courses open to anyone, and in hybrid classes. All the professors said that they taught the same curriculum regardless of the location or format of the course. Professors, who taught in the high school, indicated the students did not have the complete sense of being in a college class because they never left the building. At a specified time, a bell rang, the students were dismissed from high school, walked to a different wing of the building and were now college students, no longer under the jurisdiction of the public school system. Some students displayed a lack of academic maturity and expected to be able to redo assessments when they received a poor grade, as they were able to do with high school assessments. Oliver, in particular, was insistent in his belief that there needed to be “a concerted and deliberate effort to demonstrate that what was going on

down the hall [in the high school classes] was different than what is going on here [in the college classes].” Once he found a couple of students who skipped his college course “hanging around in the hall” and he found it necessary to explain that they were “wasting time and money and you could fail. This is different than high school – everything is your [the student’s] responsibility.”

All agreed that the lack of real world experience was a bit of an obstacle, particularly in the business courses, and students were at a disadvantage not being in a class with older students who may have had exposure to balancing a checkbook, reading financial news, or working for a paycheck. In addition, Paige believes that it is essential to have a basic knowledge of politics and the economy to fully understand the concepts in businesses courses. To date, her experience with the college classes that she teaches in the high school is that the students have no knowledge, and no interest in either politics or the economy and subsequently are not getting as much out of the course as they could.

Paige also has dual enrollment students in her business classes that are face-to-face on the college campus and online. She noted that “the students here in these classes, they are on it. They have a pulse of what is going on. They can talk about trade and NAFTA and what the president is doing with trade”. Oliver also noticed a difference in the high school students who take their college courses on the college campus. He believes, “there are three buckets of students taking college courses. One is the high school students, and they are divided into two group – the high schoolers in the signature programs and the super achievers who are making their own path. This group includes the home schoolers”. The savvy high school students realize they can take courses on the college campus as part of the Early College Access program and receive the benefits of reduced tuition and early release from their high school to take college courses. Professors reported that they often did not know who the high school students

were in their on-campus or online courses unless the student volunteered the information or there was a reason to ask.

Zach also noticed a difference in his high school-only class of online students and his on-campus, face-to-face class. He finds himself “more fully involved in assisting students in understanding deadlines and things of that nature” in his high school-only online college course. He believes that high school students need some extra attention and reminders regarding due dates. Zach explained that even when he has high school students in his face-to-face class, their inexperience is mitigated by the presence of other students with life experiences who are willing to share their stories, either in person or through discussion board posts.

The professors who participated in this study spoke of some unexpected challenges to teaching high school students in college classes, particularly when done in the high school building. One professor was initially surprised at the immaturity of the students and only later realized that she was teaching high school juniors – and one sophomore – and not seniors. She was concerned that her class was always at the end of the day and “the students are exhausted – they have been in school since 7:00 a.m. and my class is at 12:55 [until 2:20 p.m.]” There were also issues with the physical plant. Paige was not given access to the school network, so she could not use internet sources in the high school like she would for the same course taught on the college campus. She also taught in the classroom of a high school teacher who had a free period at the end of the day and would not leave the classroom while Paige was teaching. Oliver remembered that all of the bathrooms were locked and that students needed to get the key from him – although they did not need a hall pass to use the bathroom during class time. Zach was surprised to learn that even with a 50% discount of tuition, and state grants to those who qualified, a number of his students had financial issues and could not raise the \$25 needed to pay administration fees and often could not afford textbooks.

Sub-Question Four

The fourth sub-question was: how does the local community partner with the school system to provide real-world opportunity to students in dual enrollment programs? The themes of scheduling and maturity are prevalent in participant responses that helped formulate the answer to this question. In Peninsula County, involving the local community in the creation of signature pathway programs was a critical element in deciding which signature course of study individual high schools would adopt, according to Sean. Corporations, or agencies, provided speakers, sponsored field trips, or offered internship possibilities. Several high schools require college courses to complete the program and receive a professional certificate.

Defense High School, which offers a program in Homeland Security, brings in speakers from the National Security Agency, Federal Bureau of Investigation, Transportation Security Agency, Customs and Border Control, and the Defense Information Systems Agency to name a few. Northrop Grumman and Lockheed Martin arrange tours of their cyber security laboratories, and a commander at a nearby military institution orchestrated an 11-day trip to the United Kingdom so students could experience for themselves how allied nations conduct national security operations. Students at Defense High School may also apply for internships with the Secret Service to obtain first-hand knowledge of the operations of agency that is in charge of providing security to top government officials of the United States.

The proximity of Airport High School to air, rail, and sea transportation hubs, and to corporate headquarters and tourist attractions in a nearby metropolis, translates into numerous opportunities to observe industry in action. Field trips for students in the transportation and cargo security program include visits to the corporate headquarters of a multinational business company, Baltimore-Washington International Airport, a Coast Guard yard and logistics center, port terminals engaged in loading and unloading operations, and the nuclear-powered ship

Savannah. An internship is a requirement of this certificate program and Airport High School partners with several companies in the local area, one of which is Global Transport.

Business partners who provided internship opportunities to students noted an increase in personal maturity of those who participated in the program. This was evident in both the area of soft skills, such as learning how to interact with customers, and in developing professional knowledge necessary for the skilled trades or cargo security operations. Students working in the finance program developed networking and technical skills necessary for job placement and students in the trades were put on a path toward Master Certification.

Robert, the program administrator of the Transportation and Cargo Security program at the college, said the business partnerships are critical to the success of the program. Alan, the vice-president of Global Transport, said his company “decided to engage for several reasons hoping there would be benefits for both sides.” Alan concedes that the transportation and cargo security industry is not well known and the partnership with the signature program is an opportunity to “build relationships so high school students are exposed” to the business. He added, “we bring them [students] in and give them a different look into the different facets of our business – we have air, ocean, an import and an export side.” Alan’s goal is to give the students as much exposure as possible to his niche industry, which includes bringing the students to the port and having them work on the vessels. By the time students are done with their internship at global transport, they have worked in a warehouse, an office, a vessel, and have developed some interpersonal skills – some have been offered employment, even before they have graduated from college.

At Darlington High School in Northern County, a group of financial enterprises support the Academy of Finance Signature program by providing classroom resources and presentations, scholarship money, and summer internships. The goal is expose students to the financial

services industry and develop the technical, networking, and personal skills necessary to be successful. Northern Technical High School relies on its partnership with professional associations such as the Heating and Air Conditioning Contractors of Maryland and the Electrical Contractors Association to provide pre-apprenticeship opportunities that will provide a path for students to earn their Master certification and an associate degree.

Leonard, an advisor at Northern Community College notes that, “the pre-apprenticeship program would not exist without the business partners. There isn’t enough time to follow up on all of the curriculum requirements and job training tracking.” The business partners, who are tradesmen, have connections through their trade organizations which ensure the curriculum is kept up to date. Leonard adds, “it is a long chain of business relationships that really promotes getting more of these guys [students] into the trades.”

Homeschooled students are also able to take advantage of business partnerships through counselors who work with the umbrella organization which provides oversight to homeschooled students’ academic progress. Bruce, who knew he wanted to be a medical professional – maybe a doctor - was able to “shadow a cardiologist, a physical therapist, a physician’s assistant, a surgeon. I got to see open heart surgery. This nurse had all of these connections, and I got to see everything. It was amazing.” Bruce admits that he initially thought about being a doctor, but after his exposure to the different medical professions, he realized he wanted to work with people and is studying to be a nurse practitioner.

Sub-Question Five

The fifth sub-question was: how do participants in dual enrollment programs describe the positive and negative impact of their experience on their post-secondary education? Scheduling, maturity, and time management were recurrent themes in the focus group discussions among the students. Overall, participants believed that their experience with dual enrollment was positive

and everyone recommended high school students take advantage of this opportunity if they were able to do so. Most of the students agreed that being exposed to the expectations of college while they were still in high school better prepared them for the academic rigors of college life, especially regarding time management. All of the participants in this study were enrolled as full-time college students – four attended community colleges, two matriculated at four-year universities after high school.

A review of video footage from interviews with students who completed the transportation and cargo security program shows that their dual enrollment experience was very positive. Jessica said, “the program changed my life and what I thought I wanted to do. When I got my certificate, I realized I had done a good bit of college. I am going to get my Associate Degree in Supply Chain Management and then transfer to [a four-year university] for my bachelor’s degree”. Jack was offered a job when he received his certificate and decided to pursue a field in aviation, most likely in Air Traffic Control. Sam did his internship in the south working with supply rigs for oil platforms and is considering his options.

Three of the four students in the Academy of Finance signature pathway program at Darlington High School continued with a business curriculum in college. Abigail is a finance major and believes that her experience in her dual enrollment courses made the transition into college easier, especially with respect to time management. She learned to use the syllabus as a tool and said, “it explains everything and helped me to do everything ahead of time.”

Brad agreed with Abigail that the dual enrollment course helped him to understand the level of work that professors expect from college students. Brad said, “I had projects due at certain times. I did a lot of assignments early”. He enrolled in a second dual enrollment course in spring of his senior year and earned NAFTrack certification. Brad planned to finish an associate degree in business management at Northern Community College and was recently

hired at a credit union, which he hopes will give him real-world experience and serve as the basis for a career in finance.

Peter also enrolled in college business courses in high school to earn NAFTrack certification, and to learn more about how to run a business. His goal is to have his own business in the future, and he is in the business track at Northern Community College. Peter did not think dual enrollment taught him much about time management because he felt he had plenty of time to complete all of his work based in the course load he had in high school. Peter also indicated that college is not for everyone and students should not feel pressured in to taking a dual enrollment course if they want to enter the work force after school.

Francesca was motivated to take her dual enrollment courses in business to prepare herself for the college experience. Even though she is a nursing student at a four-year university, Francesca said, “I still need to know finance.” She added, “Taking the college course helped me manage my time better and get all of my work done on time. It also helped me with my critical thinking skills.”

Helena is also a nursing student, and she explained that she took a college class while still in high school “because it was relevant to my major and it was something I needed to get out of the way.” Helena was not in a signature program but was able to take advantage of Early College Access because she had enough credits to graduate high school. She attended a psychology class on the college campus with traditional-age college students and felt the experience prepared her to be a full-time college student. Helena is enrolled in a Transfer Studies degree but will transfer to a nursing program in a four-year university before completing an associate degree.

Bruce credits his dual enrollment experience with helping him mature as a person and as a student. As a home-school student Bruce became bored with his high school curriculum

because he did not feel challenged by the courses. Taking advantage of open enrollment in Peninsula Community College for anyone over 16, Bruce enrolled in six courses that met on the college campus during his junior year in high school. From the beginning, he was in classes with traditional-age college students and several home-school students from his county. His favorite memory as a young college student was that “professors don’t care if you are in high school or 75 years old, they see you as a student. When I told people that I was in high school, they didn’t care”. He did learn two valuable lessons – ask for help when you are falling behind or don’t understand the material, and if you stop going to class, you will fail the course. Bruce is now on track to graduate with an associate degree in nursing and transfer to a state university to complete his Bachelor of Science in Nursing.

Summary

This chapter provided the results of the experiences of 20 participants from two community colleges in different parts of Maryland. It included data that explain the roles a variety of stakeholders had in providing dual enrollment opportunities to high school students. The purpose of this qualitative multiple case study was to explore how administrators, advisors, professors, and business partners worked together to provide high school students the opportunity to be college and career ready through dual enrollment opportunities and real-world experience. Face-to-face interviews, focus groups, an analysis of documents and archived public information, and within-case and cross-case analysis demonstrated the roles and responsibilities of each stakeholder in the creation of opportunities to that led to high school students being career and college ready according to the mandate of Senate Bill 740. A synthesis of the information obtained from all data sources led to the development of five themes – schedule, curriculum, obstacles, maturity, and time management – which helped answer the central questions and five sub-questions of this study.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this qualitative instrumental multiple case study was to explore the partnership between two county school systems and two community colleges in Maryland and explain how various stakeholders created pathways for high school students to earn college credit before they graduated high school. This partnership assisted students in their transition to a post-secondary environment that prepared them for the needs of the 21st-century workplace. This study provides a significant contribution to the literature on the potential of community colleges, in concert with the business community, to expand the academic and work opportunities available to high school students, especially those who might not have fully considered their post-secondary options. Included in this chapter are a summary of the findings, a discussion of the findings and their implications relative to the relevant literature and theory, the methodological and practical implications of this study, an explanation of the study delimitations and limitations, and recommendations for future research.

Summary of Findings

Data for this study was collected from individual interviews with 14 participants and focus groups interviews with six participants. The participants were administrators, advisors, professors, business partners, and recent graduates who earned college credit in high school from two community colleges in Maryland. Legal documents, articulation agreements, and school websites were also reviewed to understand the rights and responsibilities of all stakeholders. Data was compiled using open-coding and further analyzed to develop themes. Themes that were directly related to the research were scheduling, curriculum, obstacles, maturity, and time management. A within-case and cross-case synthesis, together with a detailed analysis of the findings in this study, suggest directions for future research and issues that should be addressed

regarding the impact of dual enrollment on the college completion agenda and workforce development.

The central research question for this study asked: “How does the partnership between the county public schools and the community college prepare students to be college and career ready through dual enrollment programs that offer career pathways to post-secondary education?” After reviewing the transcripts of the individual interviews, it was evident that the participants had separate and distinct roles in the partnership. The development of signature programs in the high schools, and the willingness of the community colleges to support these programs with dual enrollment courses provided pathways to professional certificates or an associate degree. The legislative language in Senate Bill 740 made it possible for students to earn college credit while in high school at little to no cost.

All administrators and professors who participated in this study agreed that high school students, enrolled in college courses taught in their high school, were receiving the same instruction as traditional college students in college courses taught on the college campus. The students also had to meet the same expectations as traditional college students. In addition, they were eligible to receive the same services, and use the same college facilities, as traditional students. The dual enrollment experience helped students understand their responsibilities when they became full-time college students.

All of the business partners who participated in this study agreed that the opportunities provided to students through the professional certificate signature program, or pre-apprenticeship program, prepared students for the workforce. The business partners reported that students who had internships, or pre-apprentice placements, and entered the workforce immediately after high school, began with a higher starting salary than those who did not participate in these programs.

The first sub-questions asked: “How do curriculum requirements impact the academic schedule and support the career pathways initiative with dual enrollment?” The themes of schedule, curriculum, and obstacles were used to answer this question. The community college dictates the curriculum requirements for certificate programs, but the high school schedules students. Students who cannot take college courses in their high school might find that transportation to the college campus is an obstacle to achieving this credential.

The impact on the high school schedule for students taking dual enrollment courses depends on the program the students choose and the county where they live. In one county, students are released early, and attend the community college with traditional-age college students on the college campus or the students move to a designated “college space” in their high school and take college classes with their high school peers. A professor from the community college teaches these courses. In another county, students take dual enrollment courses online during the traditional high school day with a teacher who moderates the course and functions as a teaching assistant for the professor. Both methods of course delivery support the signature programs and provide a pathway to a professional certificate or a specific field of interest at the community college.

The second sub-question asked: “How does the high school and college counseling process support dual enrollment programs?” Elements of all five themes - schedule, curriculum, obstacles, maturity, and time management - answer this sub-question. Counselors help students with the community college application process, the financial aid application process, and placement exam testing. For some high school students, the paperwork and financial requirements might present an obstacle to enrolling in college courses. During the counseling process, students receive assistance in reviewing curriculum requirements for their course of study and are scheduled for classes. The counseling process emphasizes the maturity and time-

management that is necessary to be successful in college courses. Quinn sums it up this way, “I tell kids to run, don’t walk, to my office when they start to get in trouble with a course.”

The common thread in the counseling process was that students had to meet specific requirements to participate in dual enrollments courses. Both colleges had specific registration dates scheduled in the high school to assist students who wanted to take college classes. Those who chose to enroll in dual enrollment classes which were not connected to a signature program were advised to enroll in general education classes that would apply to any degree. In addition, the high schools in this study had permanent counselors assigned to them with specific responsibilities to guide students in the signature programs – one was a community college employee, one was a community college adjunct professor paid through a grant, and one was a Workforce Coordinator employed by the school system. All of these counselors had a direct connection to the community college and supported the dual enrollment programs. Students had easy access to the counselors, who could help them navigate the administrative details of being a college student.

The third sub-question asked: “How do instructors of dual enrollment courses describe their experiences teaching high school students in college courses?” The answer to this sub-question is informed by the themes of schedule, curriculum, maturity, and time-management. One professor, who taught college classes in the high school, noted that her courses are always scheduled at the end of the day and the students “are exhausted – they have been in school since 7 a.m., and my class is from 12:55 to 2:25.” All of the professors in this study taught dual enrollment students both in the high school and on the college campus and indicated the curriculum was the same. They agreed that students who took their college courses in the high school were not academically mature and maintained a “high school mindset”. Although the

students were under the jurisdiction of the community college, they found it difficult manage their time and to adjust to college expectations of quality and timeliness of their assignments.

In contrast, the professors noted that high school students, who were dual enrolled in classes on the college campus, seemed to “have a pulse of what was going on” and were "super achievers." The professors did not know which students were still in high school unless the students chose to reveal that information. My personal experience with dual enrollment students in on-campus college courses reflects the experience of the professors in this study – the students were invested in the course for personal and professional reasons, and I did not know they were high school juniors and seniors until they told me.

The fourth sub-question asked: "How does the local community partnership with the school system provide a real-world opportunity to students in dual enrollment programs?" The themes of scheduling and maturity prevailed in the responses and helped formulate an answer to this question. High school signature program coordinators scheduled speakers from the National Security Agency, Federal Bureau of Investigation, Transportation Security Agency, Customs and Border Control, and the Defense Information Systems Agency to name a few. Scheduled field trips included observations of port and flight operations and a Coast Guard logistics center. Business partners noted an increase in personal maturity in those who participated in the program.

The involvement of the local community was critical in deciding which signature program the high school adopted. From the perspective of the business partners, this was a win-win situation. The business partners had the opportunity to give something back to their community, expose students to potential employment options, mentor them, and potentially hire them full-time. Through internship and pre-apprenticeship opportunities, students learned the soft skills necessary to interact with customers and the responsibility of arriving on-time to work,

in addition to the technical requirements of the job. The work experience complemented the classroom experience.

The fifth sub-question asked: “How do participants in dual enrollment programs describe the positive and negative impact of their experience on their post-secondary education?”

Scheduling, maturity, and time-management were recurring themes in the focus group discussions. None of the focus group members encountered difficulties scheduling their college courses while they were in high school and found the guidance provided by counselors to be generally helpful. All of the participants in the focus group enrolled full-time in a degree program after they graduated high school and agreed that they had a positive dual enrollment experience. One student noted that the experience helped him mature as a person. Most of the students believed their dual enrollment experience helped them with time management in college. Others believed that the experience helped them define their career aspirations. Several students elected the dual enrollment option with their signature pathways to obtain professional certifications – a goal they achieved.

Discussion

The empirical evidence from this study explains how a variety of stakeholders support dual enrollment initiatives which create a pathway for college and career readiness for high school students. This study examines high school signature programs with dual enrollment components and the workforce options available in a technical high school. The study applies the theoretical framework of child development to a student’s passage from high school to college and how stakeholders work as a unit rather than individually to support the pathways to college or the workforce.

Empirical Foundations

Educational reform in Maryland began 35 years ago in response to the publication of the National Commission on Excellence (1983). This report highlighted the growing increase of high school graduates who had neither the academic skills to be successful in college nor the technical skills to be successful in a trade. Maryland strengthened the curriculum requirements for a high school diploma by reducing the number of electives a student could take and adding three competency exams to the high school diploma requirements. In the process, comprehensive high schools eliminated job training programs, and drop-out rates began to increase.

The research demonstrated that the school systems and the community colleges in this study not only took measures to improve college readiness among high school students, they also provided a pathway for students to begin their college career before they graduated high school. Project Jump Start gave qualifying high school seniors the opportunity to take college courses on the college campus during the regular academic day. The students paid reduced tuition and received a college transcript with courses that could be used to meet the general education requirements of a two-year or four-year degree.

More recent reforms of the educational system in Maryland reflect the need to have a workforce to meet the demands of the 21st-century workplace. The emphasis shifted to post-secondary education and the completion agenda with the goal of a professional certificate or a college degree (Frank & Fitzgerald, 2013). The Maryland legislature passed the College and Career Readiness and College Completion Act in 2013 which provided the framework for community colleges to partner with the public school systems. In order to earn a high school diploma, students needed to earn 26 credits, which included a fourth year of English and math.

The research highlighted the unintended consequences of changing the curriculum in comprehensive high schools from one which offered both college preparatory classes and preparation in the skilled trades to one which pushed students into post-secondary education at a four-year university. As a result, there was a shortage of skilled labor in Maryland and students who were not interested in academics dropped out of high school at 16. Documents from the Maryland Legislature and public school websites outline the framework for cooperation between the community colleges and public school systems to create dual enrollment opportunities that lead to a professional certificate. This credential prepares students for further study in areas such as transportation and cargo security, cybersecurity, and business management or for entry into the workplace.

Karp (2015) wrote that it was incumbent upon the high schools and colleges to reevaluate their curriculum and create pathways for success so students could take advantage of the opportunity to take college classes before they graduated high school. The success of the signature programs reviewed in this study confirms Karp's assertion. Both Northern and Peninsula Community College are involved in agreements to expand professional certificate options available to high school students.

One of the goals of the College and Career Readiness and College Completion Act of 2013 was to make college more available, and more affordable to students from low-income families, minority groups, non-native speakers of English, and first-generation college students (Frank & Fitzgerald, 2013). A report to the Maryland State Legislature indicated that many of the students taking advantage of the opportunity to earn college credit in high school at a reduced cost were white, female, non-FARM eligible students (Hennenberger et al., 2016). The report to the legislature does not address individual partnerships between the school system and community college to bring college courses to the students. This case study did not examine the

demographic information of individual students; however, the high schools that offer college courses in support of a professional certificate are all Title I schools. The schools have at least a 50% minority population, a minimum of 32% of the students receive free and reduced-price breakfast and lunch, and up to 65% of the students come from households where English is not their first language. The partnerships between these high schools and the community college support the spirit of the legislation. This research suggests that the report by Hennenberger et al. (2016) does not present an accurate picture of dual enrollment initiatives.

Career readiness is not confined to jobs which require a college degree but also refers to being ready to work in the skilled trades. Northern Community College is entering into more articulation agreements with trade organizations and the technical high school to expand the opportunities available to students who wish to go into carpentry, construction, masonry, and other skill-based careers. Peninsula Community College is creating space to train plumbers, HVAC technicians, forklift operators, and electricians. Both colleges are responding to the shortage of skilled labor in the 21st-century workplace and a new emphasis on professional credentials, which may or may not include a college degree.

There is disagreement on what constitutes being college-ready. In the past, the focus has been on test scores (Duncheon, 2015, Edmunds et al., 2017). According to stakeholders in this study, high school students are not always required to take standardized tests in order to take college courses. If a course has no prerequisites, the student may be able to enroll for the class as a non-degree candidate or the student can obtain a waiver from the professor. Beginning with AY 2019-2020, Peninsula Community College will no longer require standardized test scores to enroll in the college.

A good work ethic and time management skills may be a better indicator of college readiness than test scores (Bonner & Thomas, 2017; Duncheon, 2015; Governor's P-20, 2010).

Based on interviews with counselors, professors, and students who participated in this study, time management is critical to success in college classes. The results of this study confirm that students who were able to manage their schedules and keep track of assignment due dates were able to adjust to the expectations of a college course. In high school, students may retake three assessments each quarter to improve their grade, an option that does not exist in college. For this reason, evaluating college readiness based on high school grades may not be an effective strategy.

Another aspect of being college ready is the ability to navigate the admissions and enrollment process (Duncheon, 2015). The results of this research support this assertion and indicate that community colleges have assumed this responsibility. Two models for counseling dual enrollment students on the admissions and enrollment process emerged from one-on-one interviews with college counselors. The most common model is that community college counselors go to the high schools at specific times during the school year and assist students with the paperwork requirements of admissions and course enrollment. The college counselors ensure that students obtain all of the appropriate signatures – a high school guidance counselor, parent, and principal – before students enroll in college courses. Beginning with the 2018-2019 academic year, Peninsula Community College began a series of orientation sessions for high school students, and their parents, to familiarize them with the services on campus that can help high school students be successful in their college courses. Northern Community College has plans to institute a similar program in the 2019-2020 academic year.

A second model assigns college counselors to the high schools. Both Airport High School in Peninsula County and Darlington High School in Northern County have counselors assigned to them. These counselors are available full-time to students in the signature programs, as well as other students who want to take general education college courses. The counselors in

both high schools assist students with the college application and course enrollment process. They will also speak to parents, if necessary, to help them understand the benefits of dual enrollment for their children and address other concerns.

As stakeholders in the dual enrollment partnership between the school system and community college, faculty perspectives are important. According to Jones (2017), it is in the best interest of the community college to have their faculty teaching the dual enrollment courses to ensure they are as rigorous as the same courses taught on the college campus to traditional-age students. The results of this study support the position stated by Jones. Peninsula Community College sends its professors to the high school to teach face-to-face classes. Northern Community College professors also teach the dual enrollment courses given in the high school.

Ferguson, Baker, and Burnett (2015) found that professors who taught only high school students in their dual enrollment courses believed the course was more stringent than the same course offered to traditional-age college students. Tinberg and Nadeau (2013) discovered that some dual enrollment students in a community college English 101 course were not prepared for the rigor of college classes due to their inexperience or lack of prior knowledge and subsequently performed poorly in the course.

Professors who participated in one-on-one interviews in this study and taught college courses to high school students at the students' high school disagreed with Ferguson, Baker, and Burnett (2015). They stated there was no difference in content or requirements in the courses they were teaching to the dual enrollment students in the high school and the courses they were teaching on the community college campus. This was true regardless of the format - face-to-face, hybrid, or online. According to the professors, the problem is not stricter guidelines, but that high school students do not have the same prior knowledge or experience as traditional-age college students. This perception supports the finding of Tinberg and Nadeau (2013) which

points to a lack of prior knowledge as one reason high school students do poorly in college classes rather than course requirements.

According to the literature, the ability to earn college credit at a reduced, or no cost is a motivator for some students who did not believe that a college education was possible (Dare et al., 2017; Guerra-Garcia, n.d.; Kilgore & Wagner, 2017; Sáenz & Combs, 2015). Video interviews of students who earned a professional certificate in Transportation and Cargo Security through dual enrollment did not cite cost as a reason for taking college classes in high school. Instead, their motivation was the potential of a job in a career field they enjoyed and the possibility of transferring their credits to a four-year degree. The potential of earning career certification also motivated the students in the focus group to participate in dual enrollment in high school. Several participants in the focus group were interested in completing their general education requirements before committing to a full-time course of college studies. This motivation supports other findings that students of all backgrounds take dual enrollment courses for self-fulfillment opportunities before they officially begin their post-secondary education (Dare et al., 2015).

Theoretical Foundations

Bronfenbrenner's (1974) ecological systems theory was used to explain how the implementation of Senate Bill 740 impacted different environmental systems for students who participated in dual enrollment courses and signature programs. Bronfenbrenner's (1974) theory traces the development of an individual as he moves from his immediate family (microsystem), to interacting with people in the community, school or church (mesosystem), is impacted by organizations to which he does not belong (exosystem), and finally, functions in a society according to its values (macrosystem). This study expands upon Bronfenbrenner's approach

because it is applied to the development of a program, rather than an individual, and begins with the macrosystem and works backwards to the microsystem.

The macrosystem in ecological systems theory reflects the social and cultural values of the society and is the outer ring of the theory. In this case, the Governor's P-20 Task Force established the value – the need for a better educated workforce which led to passing legislation which required cooperation between the community colleges and school systems. These requirements surround the relationship between the business partners and the academic institutions (exosystem); the connections between the administrators, counselors, and professors (mesosystem); the curriculum offered to the students; and ultimately, the intended beneficiary – the student (microsystem).

The exosystem, the third ring in Bronfenbrenner's (1974) theory, is the interaction of groups that affect the student but do not involve the student directly. Likewise, in this exosystem, Senate Bill 740 includes a career readiness mandate. The school systems and community colleges coordinate with business partners to provide real-world work opportunities for the students. This study partially affirms the exosystem designation of Bronfenbrenner. Although it is true that the student is not involved in creating the connection between the business community and the academic community, the student does go through an application process for placement in either an internship program with a business or a pre-apprenticeship program with a skilled tradesman. The skills the students acquire as they navigate the exosystem should contribute to their ability to be successful in the 21st-century work place.

In the mesosystem, the second ring in Bronfenbrenner's (1974) theory, students make direct connections with others outside of the classroom. These connections are made possible by the cooperation between the community colleges and the public schools to provide the opportunity to take college classes while still in high school. With the implementation of Senate

Bill 740 high school students who elect to take college courses interact with college administrators, counselors, and professors. Students interact with administrators when they apply for admission to the community college and complete paperwork for enrollment and financial aid, if applicable. They meet with counselors to schedule classes or to plan a long-term course of study that will align with a college degree. Students also interact with their professors, although the students control the frequency, and content of the discussion. The students are gaining “college knowledge” while still in high school which should prepare them for full-time post-secondary education.

The immediate environment, or microsystem, is the high school where the student is currently enrolled. The high schools in this study had programs in place for students who wanted to take individual college courses, college courses as part of a certification program, or pursue a pre-apprenticeship option. There is a fourth choice – the student may choose to be a traditional high school student and not take advantage of the opportunities available through Senate Bill 740. Non-participation does not contradict the premise of ecological systems theory, however, because the core of the study is the cooperation between the colleges and the school systems to provide opportunities to students rather than how the student negotiates the various systems to prepare for entry into the workforce.

Five disciplines inform Senge's (2006) organization learning theory – a shared vision, systems thinking, mental models, team learning, and personal mastery. This study focused on the shared vision aspect of the theory, which Senge argues is most successful when it starts from the bottom up and gives voice to all groups. Looking at dual enrollment only from the perspective of Senate Bill 740, it may appear that the cooperation between the colleges and the school systems was the result of a top-down initiative. A close examination of the history of dual enrollment tells a slightly different story and affirms the assumptions set forth by Senge.

Dual enrollment opportunities for students in Peninsula County schools predate the passage of Senate Bill 740 by 15 years. Individual high school principals approached the community college and asked for dual enrollment courses to be given in their schools and community college administrators collaborated with the schools to develop options. Signature programs, with their business community partners, also predate Senate Bill 740 by at least ten years. The vision already existed, Senate Bill 740 created an environment for the two organizations – the school system and the community college – to work together and formalize the dual enrollment partnership throughout Maryland.

Northern Community College also has a long standing relationship with the public school system to extend dual enrollment options to high school students. However, until recently students had to take their college courses on the college campus. The college is actively pursuing a greater presence in the high schools, most notably with the creation of a cyber-security certificate program. In addition, the college is also expanding opportunities for those in the skilled trades by entering into more articulation agreements with professional organizations.

Senge's (2006) theory is an action model. It is possible to look at only one component of the theory, but all five components interact with each other to explain that organizational learning is an on-going process. The results of this study illustrate the role of team learning and systems thinking in the process of creating opportunities for students. Peninsula Community College hosts monthly meetings during the academic year which bring together academic department heads from the college, curriculum coordinators from the public school system, counselors, and representatives from the Maryland State Department of Education. The purpose of the meetings is to share best practices, challenges, and solicit new ideas to improve course offerings. The implementation of the Social Enterprise program at Bay Area High School is an example of the continuing collaboration among stake holders to bring more college options to

students in their high school and affirms the importance of a bottom-up approach to institute positive change.

More and more students in Maryland will graduate high school with college credits, professional credentials, or both. This will require post-secondary educational institutions to reexamine how such students will be categorized if they choose to matriculate in a two-year college or four-year university. For example, will the students be considered first-year students or transfer students? Will they be required to live in the dormitories or allowed to live off-campus? Are they eligible for freshman scholarships? Are they eligible to participate in interscholastic sports? Systems thinking (Senge, 2006) states that an organization has to look beyond how it functions internally to its place in the “big picture”. By extension, the dual enrollment partnership between the community college and the school system is one part of the post-secondary academic journey. The community college cannot require other academic institutions to accept the college credits which a student earned while still in high school. Additional legislation may be required to align the curriculum requirements of associate degrees with the requirements of bachelor’s degrees.

Implications

This study was conducted to explore the partnership between the high schools and community colleges in Maryland and to explain how a variety of stakeholders created pathways for high school students to earn college credit while still in high school through dual enrollment programs. The goal of these programs was to assist students in their transition into a post-secondary environment and prepare them for the needs of the 21st-century workplace.

Theoretical

Bronfenbrenner’s (1974) ecological systems theory and Senge’s (2006) organizational learning theory provided the theoretical framework for this research. Bronfenbrenner’s theory

was based on the development of an individual as he passes through an environment that at first consists of his immediate family and then expands to include his immediate community and then society at large. Senge's theory focuses on five disciplines that contribute to organizational learning. In Senge's view the process is most successful when it starts from the bottom-up and everyone has the opportunity to have their voices heard.

The all-encompassing influence in Bronfenbrenner's theory is society and its cultural values. An educated workforce that responds to the needs of society was the cultural value that informed this study. Senate Bill 740 was the legislation that put into motion procedures to provide opportunities to high school students in Maryland to obtain a post-secondary education at a reduced cost. The goal was to produce high school graduates that would be college and career ready. My recommendation is that each school district consider the needs of their student body and the employment opportunities in their county as they consider the dual enrollment opportunities that will be offered to students. The school districts should also keep in mind that the legislation called for students to be career-ready, as well as college-ready, and not neglect education in the skilled trades.

At the center of Bronfenbrenner's theory is the individual, who interacts with an ever-expanding circle of people and organizations. Dual enrollment students will encounter administrators, counselors, and professors as part of the college experience. These stakeholders should continue to have the same standards for high school students in college classes as for traditional college students in college classes. Students in specific programs may also encounter members of the business community. These connections are critical to fulfill the goal of being career-ready, in addition to college-ready.

This study focused on the aspect of Senge's theory which considers the importance of a shared vision. As applied to Senate Bill 740, both the school system and the community college

have to see the value of dual enrollment to have programs that will benefit the students and the educational institutions. The partnerships in this study pre-date the passage of the College and Career Readiness Act, so it is clear that the school system and community college share the goal of offering students the opportunity to earn college credit before they graduate high school. My recommendation is to extend this vision to four-year universities and create clearly defined pathways to align the curriculum in the community college fields of interest with university majors.

Empirical

There are a number of qualitative studies on dual enrollment that focus on the perspectives of administrators (Howley, Howley, Howley & Duncan, 2013; Pretlow & Patterson, 2015), students' perceptions of college readiness (McDonald & Farrell, 2012) or describe the advantages and disadvantages of a specific dual enrollment program (Woodcock & Beal, 2013). This study explained the role of administrators, instructors, counselors, and business partners in developing and implementing dual enrollment programs that placed students on a path to post-secondary certification or degree completion.

The Transportation and Cargo Security certificate program at Airport High School is an example of a dual enrollment program that is aligned with an associate degree in business management at Peninsula Community College. The high school principal approached the college with the idea of offering dual enrollment courses on the high school campus that would support an existing signature program of International Trade, Transportation, and Tourism. The college used an existing curriculum of six courses to offer a professional certificate program and placed a college advisor in the high school. The college also staffed the courses with professors and connected students with business partners to gain first hand, real-world work experience. Airport High School is a Title I where over 70% of the students receive free or reduced-price

lunch. Many of the students would not have considered, nor would have been able to take, college courses if they were not offered at the high school.

Most of the high schools in the two counties where this study took place do not have dual enrollment courses which complement the signature programs offered at the high school. The colleges do work with the school system to provide dual enrollment opportunities in the high school when they are approached by the school system to do so. This implies that the first step to bringing dual enrollment courses to the high school has to be taken by the school system as evidenced by the creation of the Homeland Security and Global Enterprise certificate programs in the Peninsula County public school system. The rigor of the signature programs is strengthened by adding a dual enrollment option. In addition, the college courses should align with an associate degree field of interest so students are able to continue their post-secondary education at the community college with up to 18 college credits completed toward their degree.

Academic credentials are one aspect of being prepared to enter the 21st century workforce – a second aspect is real-world experience. The success of the International Trade, Tourism, and Transportation signature program is in part due to the internship component that places students in a work-related environment. The Homeland Security signature program is connected to agencies and businesses that offer work opportunities related to national security to students in the program. Future partnerships should also consider the ability of the business community to support certificate programs with work opportunities for students.

Practical

There are five practical implications of this study which deserve further consideration. The first issue is the requirement to recruit and process college professors to teach college courses in the high schools. Second, the discrepancies between the academic calendars of the school system and community college need to be addressed. Third, although students may

qualify to enroll in college courses based on their age, grades, or standardized test scores, they may not have the maturity or background knowledge to be successful in college. Fourth, the state institutions of higher education should have a common agreement regarding the classification of new high school graduates who enter college with dual enrollment credit. Finally, given current workforce requirements more emphasis should be placed on post-secondary education in the skilled trades.

The change to a 4 x 4, A day-B day block schedule in the high schools facilitates the delivery of dual enrollment courses at the high school while accommodating the new high school graduation requirements in Maryland. Given the transportation challenges some students encounter traveling from their high school to the college campus, bringing the professors to the high schools is a viable alternative from the perspective of the school system. As more high schools develop dual enrollment components to their signature programs, there is an increased demand for professors to teach the courses. Recruiting and processing college professors to teach in the high school requires a long lead time because of background checks and other administrative procedures in place when working with minors.

Two recommendations present themselves as way to address this issue without hiring additional faculty to teach in the high schools – students could be transported to a central location for their college courses or they could take their college courses online. Peninsula Community College has several satellite campuses in the county that offer college courses. High school students could take their college classes at a satellite college campus. This arrangement also addresses the concerns of “maturity” and not being a “real college student” since high school students would be in class with traditional-age students and the courses would not be taught at the high school.

The school system could provide transportation to the off-site campus location. The precedent for midday transportation already exists with students who attend their assigned high school for half of the day and one of the county technical centers for the other half of the day. High school students could also take their college courses online in sections that are open to all students. This option would expose high school students to a variety of learners. The interaction with students from various backgrounds could also mitigate the lack of real-world experience that high school students bring to classroom discussions.

A second area of concern is the difference in the academic calendars of the public school system and the community college. By law, public schools in Maryland may not start classes until after Labor Day and the fall semester ends the third week in January. In contrast, the fall semester for the community colleges begins the third week in August and ends with final exams the second week in December. High school students who take their classes on the college campus comply with the college schedule, so the calendar conflict does not have an effect on them. High school administrators who want professors to teach college courses on the high school campus should consider one of two, 13-week options to ensure students have the same number of contact hours as their on-campus counterparts and end the semester at the same time as on-campus students.

The first option is a 13-week course that meets three times a week for 75 minutes. This scenario accommodates the two-week late start and accounts for lost time in the schedule that occurs when the public schools are closed, such as teacher professional days, but the college campus is open. The second option is to offer 13-week courses in an online format. The high school could assign online students to classrooms with the appropriate technology to facilitate completing the coursework during the academic day.

A third area of concern is the personal and academic maturity of high school students in college courses. Although high school students are receiving the same course content in the college courses taught at the high school as traditional-age college students are receiving on the college campus, they most likely do not have the background knowledge to process the material. By remaining in the high school for their college courses, the students do not get the benefit of interacting with others beyond their peer group. My experience in teaching high school students in college courses on the college campus is that older students add depth to the discussions, even if they are traditional-age college students and only one or two years older than the high school students.

The existing law and admissions requirements of the community colleges in this study allow students who are 16-years old to enroll in college courses as non-degree seeking students. Students may be required to take a placement before enrolling in specific courses but beginning level general education courses typically do not have pre-requisites other than a minimum score on the ACCUPLACER test. Without changes to the course requirements, it is difficult to address the issue of student maturity other than to speak with students, and their parents, about the expectations of college professors. Ironically, Peninsula Community College plans to eliminate testing as a pre-requisite for college admission which may only exacerbate the issue of the maturity of high school students enrolled in college courses.

A fourth area of concern is how institutions of higher education in Maryland classify new high school graduates with dual enrollment credit on a college transcript. High school students who enroll in college courses are considered college students, even though they have not graduated from high school. This can present problems for students who enter the university system after high school, particularly if they have accumulated more than 25 college credits. There is no agreement among the four-year state universities on how to classify first year

students who matriculate with a large number of college credits. Are they transfer students? Are they upper classmen? Will they be required to live on campus? Will they receive preferential registration? Will the credits apply toward degree requirements or only fill elective requirements?

Senate Bill 740 has been in effect for five years and there is no uniform way to address students who enter the four-year universities with college credit earned in high school. The next step is for community colleges and the four-year universities to develop universal procedures for accepting transfer credit. The most practical way to begin this process is to establish common course equivalents and degree requirements between the community college and four-year universities, similar to the way the public school systems and community colleges create articulation agreements. In addition, there should also be a standard procedure on how to treat new high school graduates attending four-year universities with college credit, even if they have earned an associate degree.

One of the goals in offering dual enrollment classes was to reduce the cost of college by offering high school students reduced tuition. Another was to give students the opportunity to earn college credits that would transfer to an associate or bachelor's degree, reducing the time and money needed to graduate. Some colleges in Maryland will no longer accept transfer credit from college courses that were taught on the high school campus, or classes that only enrolled high school students.

The state cannot impose requirements on private colleges and universities in Maryland to accept college credit earned in high school, but they can be encouraged to do so. The State Commission on Higher Education, however, should establish rules for public universities regarding the transfer of college credits earned by high school students. Absent such directives, the high schools and community colleges could change the delivery of online college classes by

not restricting sections to “high school students only.” The colleges could also offer more courses in regional centers that are more accessible to high school students. It is not feasible to open college courses taught in the high school to the general public unless there is a way to restrict access to the building by students who are not enrolled in the high school where the classes are taught.

A fifth, and final, area of concern is post-secondary education in the skilled trades. Although Senate Bill 740 emphasizes college and career readiness, the focus appears to be on professional careers rather than trade careers. In Maryland, only one skilled tradesman is entering the workforce for every four that leave through retirement or a change in career. Northern Community College is actively seeking to attract people into the trades to respond to the needs of employers. Peninsula Community College is renovating a large space that will accommodate HVAC, plumbing, warehouse operations, and other skilled labor certification courses. The community colleges should take a more active role in recruiting students into the skilled labor force as a viable career option. Peninsula Community College should consider offering an associate degree in Technical and Professional Studies, similar to the program at Northern Community College, geared toward offering those in the trades the education necessary to manage their own business. The public school system should also present trade occupations as a post-secondary option to students rather than focus solely on enrolling students in academic institutions for post-secondary education.

Delimitations and Limitations

Delimitation in this study is the purposeful decision of the researcher to limit and define the boundaries. A case study design was chosen because the researcher wanted to describe the partnership which was created between the community college and public school system to fulfill a legislative mandate. In this qualitative multiple case study, this researcher chose two

community colleges, and the school systems with whom they partnered, based on the colleges' support of signature programs in the high school, the dual enrollment possibilities for students who were not in signature programs, the support the community gave to students through real-world work experience relating to their studies, and their transfer process to a four-year university.

There were several limitations in this study that were beyond the control of the researcher. The first limitation was that the public school system in Peninsula County would not allow the researcher access to current students in the signature programs, coordinators of the signature programs, administrators or curriculum coordinators from the Board of Education, or a list of community sponsors. After this denial was received, the researcher was limited to using information from the perspective of the community college administrators, professors, counselors, business partners, and the websites of the public school systems.

A second limitation was that the community colleges have overlapping, but not identical, pathways to degree completion. The degree in Professional and Technical Studies was not available to tradesmen at Peninsula Community College. An articulation agreement between several trade organizations and Northern Community College awarded 20 college credits which satisfied core requirements for the Professional and Technical Studies degree.

A third limitation of this study was that the partnerships examined involved Title I high schools and a magnet school which had existing relationships with the community colleges, the business community, or both in their respective counties. The passage of Senate Bill 740 was the impetus to strengthen the connection and more clearly define pathways to degree completion. None of the schools in this study had to initiate a new plan.

A fourth limitation was the experience of the participants, specifically the administrators, counselors, and professors in this study. Most of the individuals from the colleges who were

involved in the creation of the partnerships had retired, left the area, would not respond to correspondence, or withdrew from the study. The researcher did speak with the appropriate individuals, based upon their title and job description, who were quite knowledgeable, but they were not part of the partnership creation process.

A fifth limitation of the study was the composition of the focus groups. All of the focus group participants enrolled in college full-time immediately after receiving their high school diploma, but not all of them continued with the program they studied in high school. The researcher was not able to include students who went into the workforce or pursued technical training. The focus group participants did, nevertheless, provide a rich description of their experiences with dual enrollment.

Recommendations for Future Research

Senate Bill 740 had its origins in the Governor's Workforce Council and was put in place to address the needs of the 21st-century workforce in Maryland. Recognizing the need for post-secondary education as a prerequisite for the anticipated jobs, Senate Bill 740 created an environment for obtaining the necessary education, at a reduced cost, while still in high school. Although the title of the bill involves college and career readiness, the bulk of the initiatives between the community college and the public school system seems to be on "college" rather than "career." The bill requires the Maryland State Department of Education publish an annual report on the status of dual enrollment each year to track student participation by gender, ethnicity, household income, and other factors. The legislation has not been in place long enough for the report to include four-year college completion rates.

Several areas of qualitative research might be pursued in the future to judge the effectiveness of the legislation and the cooperation between the school system and the community college that it requires. It would be useful to know if students who participated in

certificate programs in high school were able to transfer their college credits and apply them toward college degree requirements, continued with the same field of study in college, were employed in a job related to their degree, and if they believed their high school dual enrollment experience prepared them for college and a career.

A qualitative study on high school culture, particularly in Title I schools, might be useful to determine if more students pursued college classes because of their ability to access the classes without leaving their high school. Also, were students more likely to take college courses available at the high school, rather than attending on a college campus, if they did not have to forfeit aspects of their high school life, such as sports and extra-curricular activities.

Maryland has been phasing-in the drop-out age from 16 to 18 for students who do not have a high school diploma. A quantitative study on the impact this change has had on dual-enrollment might indicate that formerly at-risk students might pursue college classes in high school because they no longer have the option to leave school before they are legal adults.

Finally, a quantitative study comparing the success of students who received college credit for their achievements in Advanced Placement courses versus students who took college courses while still in high school could further validate the value of the dual enrollment initiative. Advanced Placement courses tend to draw the most academically gifted or motivated students, but the results of the Advanced Placement exam at the end of the academic year determine if the student will eventually receive college credit. In contrast, the high school students who meet the admissions requirements of the community college and prerequisite requirements of the courses they would like to take will earn college credit if they are successful during the term of the course. As more colleges in Maryland either do not accept Advanced Placement scores or will only give placement versus academic credit for AP scores, dual enrollment may prove to be more beneficial to all students.

Summary

The purpose of this study was to explore the partnership between the public school system and the community college in providing opportunities to take college courses before students graduated high school. One of the goals of this partnership is to prepare students to be college and career ready for the 21st-century workplace. Another goal is to provide an opportunity for students, who might not have considered pursuing post-secondary education, the chance to take college courses while still in high school that could lead to a professional certificate or transfer credits that can be applied to a post-secondary degree.

The school systems coordinated with the community colleges to determine which courses would be eligible for dual enrollment. Some high schools went further and developed unique signature programs, with a dual enrollment component. The 4 x 4 block schedule, prevalent throughout the school systems in this study, allows for the scheduling of college courses at the high school or for the early release of students to take college courses on the college campus.

The high school and college counseling process supports dual enrollment programs by bringing counselors to the high schools to assist with the college application process, selecting and scheduling classes, applying for financial aid when applicable, and advising students on their responsibilities as college students. In some cases, college counselors are permanently assigned to the high school. Motivated high school students, who participate in dual enrollment programs that are aligned with the requirements of fields of interest in the community college, or majors in a university, do indeed save time and money. They benefit from the reduced tuition rate available to high school students and can use the courses on their college transcripts to fulfill degree requirements when they matriculate into a post-secondary institution. Pre-apprenticeship students benefit as well, because their work experience can earn them 20 college credits. In addition, they can become master tradesmen in three years instead of four.

College professors delivered the same material in the courses they taught at the high school as they did in their courses taught on the college campus. They did note that students in the courses taught at the high school did not always have the sense that they were college students. The professors felt that high students who took college courses on the college campus were more mature and benefitted from having traditional-age college students in their classes. Professors in both face-to-face courses and online courses shared this sentiment. The researcher's experience teaching high school students in on-campus college classes corroborates the sentiment of the professors in this study.

The partnership between the academic institutions and local businesses create real-world work opportunities for students who might discover a passion for a career they did not know existed. As a result of their experiences, students earned professional credentials which gave them advanced standing in the workforce, if they chose that option, rather than further formal education.

Students who took college courses before they graduated from high school agreed that the experience prepared them for the rigors of being a full-time college student, particularly in the area of time management. Students who sought professional certification, earned it. Several students are working in their chosen fields while attending college and believe the opportunities they had in high school prepared them for the workforce. The high school students in the researcher's college classes also believe they are learning time management skills, in addition to being pro-active in seeking assistance when they are having difficulties meeting course expectations.

The requirements of Senate Bill 740 acknowledge the need for the educational system to address the needs of the modern workforce to be college and career ready. At the same time, it allows individual counties to develop their own programs rather than have the state impose a

solution. Although a single roadmap for designing and implementing dual enrollment programs may be appealing at the state level, it would not leave room for counties to address their specific needs for a trained and educated workforce.

The results of this study highlight the efforts of two counties to provide education options that include professional certifications which allow students to enter the workforce without earning a college degree. A change in the Maryland law which prohibits students under 18 from leaving high school, unless they have graduated, increases the likelihood that students will have more opportunities to enter the workforce with the skills and education necessary to be successful.

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APPENDIX A: IRB APPROVAL LETTER**LIBERTY UNIVERSITY.**
INSTITUTIONAL REVIEW BOARD

July 17, 2018

Susan Terranova

IRB Approval 3349.071718: A Dual Enrollment Partnership between Community Colleges and High Schools: A Case Study

Dear Susan Terranova,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

6. Collection of data from voice, video, digital, or image recordings made for research purposes.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP

Administrative Chair of Institutional Research

The Graduate School

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APPENDIX B: CONSENT FORM

Peninsula Community College

CONSENT FORM

A Dual Enrollment Partnership Between Community Colleges and High Schools: A Case Study

Susan Terranova
Liberty University
School of Education

You are invited to be in a research study on the partnership between a public-school system and the community college. This study focuses on signature programs and dual enrollment options that lead to college credit for high school students. You were selected as a possible participant because of your role in this partnership as either an administrator, instructor, counselor, business sponsor, or program graduate. Please read this form and ask any questions you may have before agreeing to be in the study.

Susan Terranova, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to understand the partnership between the public-school system and the community college in providing dual enrollment opportunities to high school students.

Procedures: If you agree to be in this study, I would ask you to
Participate in a 60-minute one-on-one interview that will be recorded or
Participate in a 60-minute focus-group discussion that will be recorded.

Risks: The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Benefits: Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include an understanding of how cooperation between a school system, a community college, and the business community can offer real-world experience to high school students in their journey to be prepared for post-secondary education or the world of work.

Compensation: Alumni of dual enrollment programs will be compensated with a meal during the focus group interview.

Confidentiality: The records of this study will be kept private. In any sort of report, I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participants will be assigned a pseudonym. I will conduct the interviews in a location where others will not easily overhear the conversation.

- Data will be stored on a password locked computer and may be used in future presentations. After three years, all electronic records will be deleted. Paper documents will be stored in a locked filing cabinet and destroyed after three years
- Interviews will be recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.]
- I cannot assure participants that other members of the focus group will not share what was discussed with persons outside of the group.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University, Peninsula Community College, or the Peninsula County Public School System. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Contacts and Questions: The researcher conducting this study is Susan Terranova. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at sterranova@liberty.edu. You may also contact the researcher's faculty advisor, Dr. John Duryea, at jduryea@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 1887, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

The researcher has my permission to audio-record me as part of my participation in this study.

Signature of Participant

Date

Signature of the Investigator

Date

APPENDIX C: CONSENT FORM
Northern Community College

CONSENT FORM

A Dual Enrollment Partnership Between Community Colleges and High Schools: A Case Study
Susan Terranova
Liberty University
School of Education

You are invited to be in a research study on the partnership between a public-school system and the community college. This study focuses on signature programs and dual enrollment options that lead to college credit for high school students. You were selected as a possible participant because of your role in this partnership as either an administrator, instructor, counselor, business sponsor, or program graduate. Please read this form and ask any questions you may have before agreeing to be in the study.

Susan Terranova, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to understand the partnership between the public-school system and the community college in providing dual enrollment opportunities to high school students.

Procedures: If you agree to be in this study, I would ask you to
Participate in a 60-minute one-on-one interview that will be recorded or
Participate in a 60-minute focus-group discussion that will be recorded.

Risks: The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Benefits: Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include an understanding of how cooperation between a school system, a community college, and the business community can offer real-world experience to high school students in their journey to be prepared for post-secondary education or the world of work.

Compensation: Alumni of dual enrollment programs will be compensated with a meal during the focus group interview.

Confidentiality: The records of this study will be kept private. In any sort of report, I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participants will be assigned a pseudonym. I will conduct the interviews in a location where others will not easily overhear the conversation.

- Data will be stored on a password locked computer and may be used in future presentations. After three years, all electronic records will be deleted. Paper documents will be stored in a locked filing cabinet and destroyed after three years
- Interviews will be recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.]
- I cannot assure participants that other members of the focus group will not share what was discussed with persons outside of the group.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University, Northern Community College, or the Northern County Public School System. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Contacts and Questions: The researcher conducting this study is Susan Terranova. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at sterranova@liberty.edu. You may also contact the researcher's faculty advisor, Dr. John Duryea, at jduryea@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 1887, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

The researcher has my permission to audio-record me as part of my participation in this study.

Signature of Participant

Date

Signature of the Investigator

Date

APPENDIX D: RECRUITMENT EMAIL

TO: jasmith@aacc.edu

From: sterranova@liberty.edu

Subject: Research Study

Dear Mr. Smith,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctorate in Education. The purpose of my research is to investigate the partnership between the community college and the school system in providing dual enrollment opportunities to high school students. I am writing to invite you to participate in my study.

If you are an administrator, counselor, or a professor, who has or has taught, high school students in your college courses and are willing to participate in this research you will be asked to participate in a one-on-one interview that should take about 60 minutes. Your participation will be completely anonymous, and no personal, identifying information will be collected.

To participate, please reply to this email at sterranova@liberty.edu to set up a time for the interview.

I will email you a consent document which contains more information about my research. Please bring the consent form with your signature to our meeting. You may also email it to me at sterranova@liberty.edu.

Sincerely,

Susan Terranova
Doctoral Candidate

APPENDIX E: CODES

Source: A – administrator
 B – business partner
 C – counselor
 D – document
 F – focus group
 P – professor

| | | | |
|---------------------------|------------|-------------------------|------------|
| 4 x 4 block | A, F, P | Graduation credits | A, D, F |
| Absence | A, C, F, P | HS academic day | F, P |
| Availability of professor | A, F | HS activities | C, F, P |
| AA degree | A, C, D, F | HS mindset | F, P |
| Background knowledge | B, P | HS principals | A, C |
| Books | A, P | Interaction w/professor | A, F, P |
| Calendar match | F, P | Internship/apprentice | A, B |
| Career credentials | A, B, C, F | Jobs | C, P |
| Career goals | B, C, D, F | Jump Start | A, C, P |
| Course content | A, F, P | Location of course | A, F, P |
| College campus | A, F, P | Online format | C, P |
| College expectations | F, P | Parents | A, C |
| College offerings | A, B, F | Placement testing | A, P |
| College process | A, B, C | Recruiting | A, C |
| Contact time | A, F, P | School culture | A, P |
| Credentials -faculty | A, B, P | Self-help/counseling | A, F |
| Credit (AP, Art, DE) | A, C, F, P | Signature programs | A, C, D |
| Due dates | F, P | Soft skills | A, B, C |
| Early dismissal | A, C, F | Transferability | A, C, D, F |
| Experience | B, F, P | Transfer studies | C, F |
| Face-to-face format | C, P | Transportation | A, B, C |
| Failure | C, F, P | Tuition | A, D, F |
| FARM | A, C, D | Waiver | C, D, F |
| Field of Interest | A, B, C, D | Work schedule | B, P |
| Grades | A, F, P | | |

APPENDIX F: THEMES

| THEMES | CODES |
|-----------------|--|
| CURRICULUM | AA degree; Career credentials; Credentials (faculty); Course content; Credit (AP, Art., DE); Field of interest; Graduation credits; Internship/Apprenticeship; Signature programs; Transferability; Transfer studies |
| MATURITY | Absence; Background knowledge; Career goals; Experience; Failure; Grades; Jump Start; Placement testing; School culture; Self-help/counseling; Soft skills |
| OBSTACLES | Books; College campus; College process; FARM (Free and Reduced Meals); Face-to-face format; HS academic day; Jobs; Online format; Parents; Recruiting; Transportation; Tuition |
| SCHEDULE | 4 x 4 block; Availability of professors; Calendar match; College offerings, Contact time; Early dismissal; Graduation credits; HS principal; Location of courses; Waiver |
| TIME MANAGEMENT | College expectations; Due dates; HS activities; HS mindset; Interaction with professors; Work schedules |