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EXPLORING THE LIMINAL SPACE: DUAL ENROLLMENT AT
MAINE’S COMMUNITY COLLEGES

By
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A DISSERTATION
Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy
(in Education)

The Graduate School
The University of Maine
December 2016

Advisory Committee:

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DISSERTATION ACCEPTANCE STATEMENT

On behalf of the Graduate Committee for Amy Lynn Hubbard I affirm that this manuscript is the final and accepted dissertation. Signatures of all committee members are on file with the Graduate School at the University of Maine, 42 Stodder Hall, Orono, Maine.

Dr. Susan Gardner, Professor of Higher Education               December 9th, 2016
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EXPLORING THE LIMINAL SPACE: DUAL ENROLLMENT
AT MAINE’S COMMUNITY COLLEGES

By Amy Lynn Hubbard

Dissertation Advisor: Dr. Susan K. Gardner

An Abstract of the Dissertation Presented
in Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy
(in Education)
December 2016

Only 39% of matriculated students will earn a college degree or certificate in six years due to inadequate preparation in high school (Center for Community College Student Engagement, 2016). Dual enrollment (DE) courses have been touted as one way to bridge the gap between high school and college (Hanson, Prusha, & Iverson, 2015; Harnish & Lynch, 2005; Johnson & Brophy, 2006; Karp, Calcagno, Hughes, Jeong, & Bailey, 2007; Morrison, 2008; Smith, 2007; Swanson, 2008). Dual enrollment is broadly defined as any course in which a high school student earns college credit (Andrews, 2004; Johnson & Brophy, 2006; Jordan, Cavalluzzo, & Corallo, 2006; Karp et al., 2007; Welsh, Brake, & Choi, 2005). In Maine, a lack of college readiness and a high demand for remedial courses are salient issues that may be addressed through DE access (Governor's Task Force, 2012; Langhauser, 2015; Page, 2016).

The Maine Community College System (MCCS) offers a wide variety of dual enrollment programs designed to meet the specific needs of Maine’s students (Maine Community College System, 2016a, 2016b). This study utilizes the lens of Critical Systems Theory (Watson & Watson, 2011) to determine how the variation in DE courses
within the MCCS influences student access and experiences. Employing a mixed-methods design integrating qualitative and quantitative methods, I compared the perceptions of DE leaders at both the high school and college level to the perceptions of DE students. The data gathered from interviews with DE leaders, student surveys, and student enrollment data suggests that DE programs within the MCCS provide college access to a unique, underrepresented student demographic, yet this access may be unequal due to variation in the relationships between individual high schools and colleges.
DEDICATION

To: George, Sage, and Parker
ACKNOWLEDGMENTS

I started this program nine years ago, as a non-traditional candidate living three hours from campus. Dr. Susan Gardner has accompanied me on this journey from the beginning. She provided a solid foundation, then challenged me knowing exactly when I needed words of encouragement. Her classes were creative and inventive, yet she ensured that the responsibility for learning was my own. Thank you, Susan, for being an extraordinary professor, mentor, and advisor.

Dr. Elizabeth Allan’s kindness and inclusivity helped me to feel integral to the higher education leadership community, despite the barrier of distance. She taught me to broaden the lens I used to view the world, and provided the language to articulate this new perspective. Thank you, Elizabeth, for helping me to become a better person, educator, and leader.

I would like to thank Dr. Sarah Mackenzie, Dr. Leah Hakkola, and Dr. Catharine Biddle for serving on my dissertation committee. As a distance-education student with few close ties to the University, I appreciate your willingness to assume additional responsibilities on my behalf. Jo-Ellen Carr has also supported me in many different ways each semester. The commitment you four have made in helping me accomplish this goal is sincerely appreciated.

I am grateful to the participants and key informants in this study, who provided their time, honesty, and insights. Each student survey reminded me of why I started this project. Each interview provided a new understanding, and I was inspired by the passion participants shared for helping young adults.
Many years ago, The Horatio Alger Association of Distinguished Americans provided me with a scholarship that started me on my academic studies. More important, however, was the gift of learning how to change my narrative from adversity to empowerment. I am grateful to my Horatio Alger Family for providing assistance and guidance.

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CHAPTER 1

INTRODUCTION

The majority of high school students believe they are academically prepared for college, yet only 39% of matriculated students earn a degree or certificate in six years (Center for Community College Student Engagement, 2016). Many students are ill-equipped for the significant obstacles in making the transition from high school to college (Center for Community College Student Engagement, 2016; Vandal, 2010; Venezia, Kirst, & Antonio, 2003). High school and college assessments differ, standards are not aligned between systems (Goldrick-Rab, Faye Carter, & Winkle Wagner, 2007; Venezia et al., 2003), and data systems fail to track student progress across institutions (Venezia et al., 2003). Venezia et al. (2003) referred to this problem as a betrayal of the college dream. The disparity between secondary and postsecondary institutions is historic, and can be attributed to the fact that colleges developed before secondary education institutions (Cohen & Kisker, 2010; Thelin, 1984). As a result, colleges and high schools differ in purpose, governance, structure, funding, and policies regarding access (Cohen & Kisker, 2010; McDonough & Fann, 2007; Thelin, 1984).

Researchers have suggested that the disparity between secondary and postsecondary educational institutions has resulted in the widespread demand for developmental, or remedial courses (Bautsch, 2011; University of Maine System, 2014; Vandal, 2010), and high attrition rates (Duncan & Skelley, 2010; Hoffman, Vargas, & Santos, 2009; Kisker, 2006; McDonough & Fann, 2007; Mokher & McLendon, 2009; Radford, Berkner, Wheeless, & Shepherd, 2010; Venezia et al., 2003). These issues are particularly significant for low-income and minority students, who are more likely to
enroll in developmental courses (Bautsch, 2011; Prescott, 2006; Venezia et al., 2003) and less likely to graduate from college (Kena et al., 2015; Radford et al., 2010; Venezia et al., 2003). First-generation students are also at risk, as college graduation rates are related to the parents’ educational background (Radford et al., 2010; Venezia et al., 2003). These rates may be due, in part, to the strong correlation between a students’ academic track in high school and their parents’ education level (Plimpton, 2007).

Dual enrollment (DE) programs have been found to assist in this transition between high school and college (Hanson, Prusha, & Iverson, 2015; Harnish & Lynch, 2005; Johnson & Brophy, 2006; Karp, Calcagno, Hughes, Jeong, & Bailey, 2007; Morrison, 2008; Smith, 2007; Swanson, 2008). DE programs are broadly defined as any program in which high school students enroll in college courses (Andrews, 2004; Johnson & Brophy, 2006; Jordan, Cavalluzzo, & Corallo, 2006; Karp et al., 2007; Welsh, Brake, & Choi, 2005). DE programs do not include exam based programs like Advanced Placement (AP) or International Baccalaureate (IB), which are not dependent on a relationship between a secondary and postsecondary institution (Karp & Jeong, 2008; Waits, Setzer, & Lewis, 2005). Instead, DE programs rely on collaboration between secondary and postsecondary institutions (Barnett & Stamm, 2010; Hoffman & Robins, 2005; Hoffman et al., 2009; Marshall & Andrews, 2002). Additional benefits to students in DE programs may include higher college aspirations (Bailey, Hughes, & Karp, 2002; Harnish & Lynch, 2005; Hoffman & Robins, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Kena et al., 2015; Morrison, 2008; Smith, 2007; Swanson, 2008), improved rigor in the high school curriculum (Karp et al., 2007), and promoting college for underrepresented students (Hoffman, 2005; Karp et al., 2007).
Despite the abundance of scholarly literature that promotes DE programs (Bailey et al., 2002; Harnish & Lynch, 2005; Hoffman & Robins, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Morrison, 2008; Smith, 2007; Swanson, 2008), there are little data on how students navigate college and high school courses simultaneously (Kanny, 2015; Lerner & Brand, 2006). A handful of studies have even showed unintended consequences of DE programs, including student isolation (Kronholz, 2011), student behavior problems (Karp & Hughes, 2008), course failure (Kanny, 2015), and lack of course rigor (Dougan, 2005; Hughes, 2010; Lewis & Overman, 2008; Mangan, 2014). The National Alliance of Concurrent Enrollment Programs (NACEP) has established standards to ensure rigor in DE courses (Scheffel, McLemore, & Lowe, 2015), yet most DE programs are not fully accredited through NACEP (Mangan, 2014). Although researchers contend support services for DE students are critical (Hughes, 2010; Karp & Hughes, 2008; Lerner & Brand, 2006; Reese, 2008), the level of student assistance provided varies widely between programs (Karp & Hughes, 2008).

Access to DE programs is another concern (An, 2013a; Hoffman, 2003, 2005; Johnson & Brophy, 2006; Karp, Bailey, Hughes, & Fermin, 2004; Lerner & Brand, 2006; Prescott, 2006; Roach, Gamez Vargas, & David, 2015; Taylor, 2015; Taylor, Borden, & Park, 2015). According to researchers, there are multiple definitions of college access (Adelman, 2007; Goldrick-Rab et al., 2007). Adelman (2007) suggested the most effective definition for access is threshold access, or “walking through the door” (p. 49). Whenever a student enters any accredited postsecondary institution and is enrolled long enough to generate a record, that student has access to college (Adelman, 2007). For the purposes of this study, access refers to student access to DE programs and will be defined
by threshold access, or whenever students are able to enroll in a DE course and generate a college transcript.

At the same time, which students are able to access DE programs is largely determined by DE policy (Hoffman, 2005; Karp et al., 2004; Karp & Hughes, 2008; Krueger, 2006; McDonough & Fann, 2007; Museus, Lutovsky, & Colbeck, 2007; Pretlow & Patteson, 2015; Smith, 2007; Taylor et al., 2015). These policies differ between states (Bailey et al., 2002; Hoffman, 2003; Hoffman & Robins, 2005; Karp et al., 2004; Michelau, 2006; Olson, 2006; Pretlow & Patteson, 2015; Taylor et al., 2015) as well as between programs and institutions (Michelau, 2006; Plimpton, 2011). DE policies that impede student access nationwide include regulation of DE instructors’ credentials (Karp et al., 2004), admissions requirements, lack of funding, and course location (Harnish & Lynch, 2005; Museus et al., 2007).

Researchers have also suggested that an unintended consequence of DE policy is preferential access to DE programs for privileged students (Harnish & Lynch, 2005; Howley, Howley, Howley, & Duncan, 2013; Johnson & Brophy, 2006; Karp, 2015; Karp et al., 2007; Karp & Hughes, 2008; Krueger, 2006; Museus et al., 2007; Smith, 2007; Welsh et al., 2005). For example, in many studies of DE programs, the majority of the students were affluent, White students, while students of color and low-income families were underrepresented (Karp et al., 2007; Museus et al., 2007; Prescott, 2006; Smith, 2007; Welsh et al., 2005). Students in rural areas were also disadvantaged due to financial, academic, and social constraints (Johnson & Brophy, 2006; Palaich, Blanco, Berk Anderson, Sharp Silverstein, & Myers, 2006; Roach et al., 2015).
As such, many DE policies that hinder access nationwide are relevant barriers to students in Maine (Governor's Task Force, 2012; Plimpton, 2007). In Maine, distance to a college campus is crucial to DE program access (Governor's Task Force, 2012; Plimpton, 2011; Pour, 2016). Nonetheless, Maine’s DE programs are widespread and have emphasized access for underrepresented students (Fisher & Abbott, 2011; Hoffman, 2005; Hoffman & Robins, 2005; Pour, 2016). Maine’s early DE programs were specifically designed to serve underserved populations and served as a model for future program development (Hoffman & Robins, 2005).

Community colleges have played a crucial role in the development and proliferation of many of these DE programs (Hoffman et al., 2009; Taylor, 2015; Taylor & Pretlow, 2015; Welsh et al., 2005). Community colleges have a distinct role in providing college access for academically unprepared (Center for Community College Student Engagement, 2016; Fenske, Geranios, Keller, & Moore, 1997) and underrepresented students (Harnish & Lynch, 2005; Hoffman, 2003; McDonough & Fann, 2007; Orr & Bragg, 2000). The Maine Community College System (MCCS) has followed national trends in leading outreach to local high schools through two DE programs: Early College for ME provides scholarships and support to high school juniors and seniors (Maine Community College System, 2016c); On Course for College was founded in order to provide access to students from rural areas (Maine Community College System, 2007a), and now provides courses on a college campus, online, at satellite sites, and at local high schools (Maine Community College System, 2014e). Indeed, enrollment in DE programs within the MCCS has grown 71% in recent years (Gallagher, 2015).
Benefits of DE programs to Maine’s students include high college matriculation rates (Plimpton, 2008), low-cost college credits, and the opportunity to ease into the college workload and expectations (Plimpton, 2011). The formation of the Governor’s Task Force on Expanding Early Postsecondary Access for High School Students in Maine represents the commitment of state leaders to expand DE opportunities (Governor's Task Force, 2012). Nonetheless, researchers, educational leaders, and policymakers have recognized that barriers to access for DE programs are insurmountable for many Maine students and changes are necessary (Governor's Task Force, 2012; Plimpton, 2007).

These barriers to access in Maine are multi-pronged. First, despite improvements in high school graduation and matriculation rates, Maine still ranks lowest in New England for the percentage of high school graduates who enrolled in college in the fall (Plimpton, Ekowo & Greenberg, 2011). Second, the percentage of students attending college varies widely by socioeconomic status, with low income students in Maine being much less likely to enroll in college than their higher income peers (Mitchell Institute & Plimpton Research, 2015). Third, many of those who do matriculate may be unprepared for the rigorous academic expectations of college (University of Maine System, 2014). This point is demonstrated by the fact that as many as half of the first-year Maine graduates who attend a Maine college will need to enroll in a developmental course (Fitzsimmons, 2013; Langhauser, 2015; Page, 2016; University of Maine System, 2014). Therefore, Maine researchers and educational leaders contend that programs that promote college readiness, matriculation, and retention are crucial (Governor's Task Force, 2012; Plimpton, 2007, 2011). DE programs are often called upon to meet these challenges (An,
2013b; Ganzert, 2014; Kim & Bragg, 2008; Roach et al., 2015; Struhl & Vargas, 2012), but comprehensive studies that examine their effectiveness in Maine are sparse.

While DE programs are growing nationally and are promoted as a means to college access for underrepresented students (Barnett, Maclutsky, & Watonlander, 2015; Berger et al., 2013; Museus et al., 2007), the relationship between DE program structure and student demographic factors, perceptions, and experiences has not been thoroughly explored. Demographic factors commonly studied by DE researchers include gender, race/ethnicity, and socioeconomic status (Karp & Jeong, 2008; Lerner & Brand, 2006; Museus et al., 2007; Swanson, 2008). In addition, researchers have also explored variables such as the high school academic record (including GPA and standardized test scores), parental education level (An, 2013a; Karp & Jeong, 2008; Swanson, 2008), and geographic location (Johnson & Brophy, 2006).

DE program structure is multi-faceted, representing variations such as purpose, course location, instructor, and program configuration (Barnett & Stamm, 2010; Karp & Jeong, 2008). The program purpose includes goals, target population, and eligibility requirements (Immerwahr & Farkas, 2006; Karp & Jeong, 2008). Thus, program purpose may impact which high school students are enrolled in the course (Immerwahr & Farkas, 2006; Karp & Jeong, 2008). Although DE programs traditionally targeted advanced students, some programs have emphasized opportunities for underrepresented students (Barnett & Stamm, 2010; Fisher & Abbott, 2011; Hoffman, 2005; Hoffman & Robins, 2005; Karp & Jeong, 2008). Traditionally underrepresented students include students from low-income families, racial and ethnic minorities, first-generation college students,
students who struggle academically in high school (Barnett & Stamm, 2010), and rural students (Johnson & Brophy, 2006).

Program structure also differs by course location (Bailey et al., 2002; Barnett & Stamm, 2010; Karp & Jeong, 2008). Courses may be held at the high school or college campus (Barnett & Stamm, 2010; Karp & Jeong, 2008; Marken, Gray, & Lewis, 2013; Sathre & Blanco, 2006). Course location impacts enrollment; classes may include high school students only, or high school and college students together (Karp & Jeong, 2008). DE course instructor varies as well and may be a high school adjunct or college professor (Bailey et al., 2002; Barnett & Stamm, 2010; Hughes, 2010; Karp & Jeong, 2008; Marken et al., 2013).

DE program configuration varies with purpose, funding, and level of support provided to students (Barnett & Stamm, 2010). Some programs are based on individual courses with minimal support (Barnett & Stamm, 2010; Hughes, 2010; Karp et al., 2004; Plucker, Chien, & Zaman, 2006) or sequential courses that may include a progression of DE courses (Barnett & Stamm, 2010). Early/middle college high schools are intensive programs, often located on a college campus, in which students graduate from high school with several college credits or an associate’s degree (Barnett & Stamm, 2010; Plucker et al., 2006).

DE program structure, such as purpose, location, instructor, and configuration has an impact on student experiences (Berger et al., 2013; Fisher & Abbott, 2011; Karp & Jeong, 2008). For example, some researchers noted how students enrolled in DE courses on a college campus perform better in their college courses than students who enroll in off-campus courses (Berger et al., 2013), and had higher educational aspirations (Smith,
Researchers used the term “power of the site” to describe the benefits to high school students when they attend classes on a college campus (Jordan et al., 2006). Benefits included relationships with faculty, a challenging academic environment, and interaction between high school and college students (Jordan et al., 2006). DE instructors have different approaches. College professors required students to take ownership of their learning, while high school teachers provided more support and tried to make the coursework relevant to students’ lives (Berger et al., 2013).

Literature promoting Maine’s DE model, which focuses on underrepresented students, is abundant and emphasizes the perceptions of DE leaders, policymakers, and researchers (Fisher & Abbott, 2011; Governor's Task Force, 2012; Hoffman, 2005; Hoffman & Robins, 2005; Palaich et al., 2006; Plimpton, 2007, 2008, 2011; Plimpton et al., 2011; Plimpton & Quint, 2010). The MCCS has emphasized access and support for underrepresented students, particularly those from rural areas (Maine Community College System, 2007a, 2014b, 2016d). However, DE programs within the MCCS vary widely (Maine Community College System, 2016c, 2016d; Pour, 2016). Furthermore, literature that focuses on perceptions and experiences of Maine’s DE students is scarce (Plimpton, 2007). The relationship between student demographics, DE program structure, and student access and experiences in DE courses within the MCCS has not been thoroughly explored. It is imperative to consider the role of students as stakeholders and participants in implementing program expansion (Immerwahr & Farkas, 2006).
**Research Questions**

This study was guided by the following research questions:

Quantitative Research Questions:

1. What is the relationship between demographic factors such as gender, race/ethnicity, socioeconomic status, high school academic record (including GPA and standardized test scores), parental education level, a student’s rural status as defined by the MCCS Rural Initiative (Maine Community College System, 2007b) and student access to dual enrollment programs at Maine’s community colleges?

2. What is the relationship between the structure of Maine’s community college dual enrollment programs (purpose, location, instructor, and program configuration) and students’ learning experiences (course rigor, student-faculty relationship, and college aspirations, DE course grade) as measured by a student survey?

Qualitative Research Question:

1. What are the perceptions of instructors and administrators of DE CC programs in ME relative to student access and learning experiences?

Mixed Methods Research Question:

1. How do the perceptions of instructors and administrators of DE CC programs in ME relative to student access and learning experiences compare with student perceptions?
Overview of Conceptual Framework

As DE programs are purported to be one way to mend the disparities between secondary and postsecondary educational institutions (Hoffman, 2003, 2005; Hoffman & Robins, 2005; Hoffman et al., 2009; Hughes, 2010; Kirby, 2007; Reese, 2008), this study was guided, in part, by Systems Theory. Systems Theory emphasizes how a group of interacting components (Laszlo & Krippner, 1998; Thornton, Shepperson, & Canavero, 2007) impacts the functioning of the whole (Laszlo & Krippner, 1998; Thornton et al., 2007). The complex web of educational institutions can be viewed as systems of education (Banathy & Jenlink, 2004; Bess & Dee, 2008; Cohen & Kisner, 2010; Kaput et al., 2012; Kirby, 2007; Lynn & Adams, 2002; Thornton et al., 2007; Venezia et al., 2003).

I also drew upon Critical Race Theory (CRT) to explore which students are able to access DE programs. The main goal of CRT is to provide perspectives that emancipate (Glesne, 2011). CRT emphasizes social struggle, justice, and the impact of power and oppression on social systems (Hebert & Beardsley, 2002). This approach aligned with my research questions and goals. For example, researchers support policies to ensure DE access to underrepresented students (Fenske et al., 1997; Harnish & Lynch, 2005; Hoffman, 2003, 2005; Hoffman & Robins, 2005; Hoffman et al., 2009; Johnson & Brophy, 2006; Karp et al., 2004; Karp et al., 2007; Karp & Hughes, 2008; Kirby, 2007; Krueger, 2006; Museus et al., 2007; Plimpton, 2008; Swanson, 2008), yet evidence suggests the majority of students in DE programs are privileged (Harnish & Lynch, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Karp & Hughes, 2008; Krueger, 2006; Museus et al., 2007; Smith, 2007; Welsh et al., 2005).

**Overview of Study Design**

In order to gain a better understanding of DE program structure and student access from the perspective of various stakeholders including students, DE program leaders, and instructors, I utilized mixed methods. In mixed methods design, both qualitative and quantitative methods are used in the same project (Denzin & Lincoln, 1994; Morse, 2003). The specific approach I used was “multilevel research,” a form of triangulation design in which researchers analyze a system by using different methods within each level of a system (Creswell & Plano Clark, 2007). A benefit of mixed methods design is that researchers can focus on the strengths of each method to gain a better perspective of the problem (Johnson & Turner, 2003; McMillan & Schumacher, 2006; Morse, 2003; Onwuegbuzie & Teddlie, 2003). The mixed methods design is fully discussed in chapter three.

**Dissertation Outline**

In the following chapters, I provide an overview of the study, the methods I utilized, and the actual findings and interpretations of them. I begin with chapter two, where I provide the historical basis for the disparity between secondary and postsecondary institutions, an overview of the existing literature on DE programs
nationwide and within the state of Maine, and an overview of Critical Systems Theory. In chapter three I review the methods for data collection, proposed analysis, and limitations of this study. Chapter four includes the findings from the qualitative strand of this study, while chapter five includes findings from the quantitative strand. In chapter six I analyze and discuss the results of merging the mixed-methods, and conclude with implications for policy and practice as well as recommendations for future research.
CHAPTER 2
REVIEW OF THE LITERATURE

In this chapter I provide a review of the literature related to DE programs, including defining DE programs and describing the rationale for the recent, widespread expansion of DE programs. I also discuss the historic gap between high schools and colleges and summarize the scholarly literature on the impact of DE programs on students. I then provide an overview of DE programs in Maine, including DE policy and access to DE programs for underprivileged students within the Maine Community College System. Finally, I provide an overview of the frameworks I utilized in this study, including Critical Race Theory, Systems Theory, and Critical Systems Theory.

**Dual Enrollment Program Overview**

Dual enrollment programs have been touted as one way to overcome the secondary to postsecondary barrier (An, 2013b; Cowan & Goldhaber, 2015; Hoffman, 2003, 2005; Hoffman & Robins, 2005; Hoffman et al., 2009; Hughes, 2010; Kirby, 2007; Reese, 2008). Dual enrollment programs have been widely recognized for their potential to improve college graduation rates by easing the student transition between high school and college (Bailey et al., 2002; Bess & Dee, 2008; Harnish & Lynch, 2005; Hoffman, 2003, 2005; Hoffman & Robins, 2005; Hoffman et al., 2009; Karp et al., 2004; Karp et al., 2007; Karp & Hughes, 2008; Kirst & Venezia, 2001; Kisker, 2006; Krueger, 2006; Marshall & Andrews, 2002; Mokher & McLendon, 2009; Morrison, 2008; Smith, 2007; Swanson, 2008; Venezia et al., 2003). Dual enrollment (DE) can be broadly defined as any program in which high school students enroll in college courses (Andrews, 2004; Johnson & Brophy, 2006; Jordan et al., 2006; Karp et al., 2007; Welsh et al., 2005).
Another term utilized is concurrent enrollment, used specifically to describe courses taught by college-approved high school teachers, within the high school environment (National Alliance of Concurrent Enrollment Partnerships; Pour, 2016). DE courses are not exam-based like other credit based transition programs such as Advanced Placement (AP) or International Baccalaureate (IB) (Karp & Jeong, 2008). AP and IB courses are high school courses with a college curriculum (Community College Research Center, 2012). Another key difference is that AP and IB are not dependent on a relationship between a secondary and postsecondary institution (Karp & Jeong, 2008; Taylor & Pretlow, 2015; Waits et al., 2005).

DE programs have expanded nationwide (Eimers & Mullen, 2003; Hughes, 2010; Karp & Jeong, 2008; Taylor & Pretlow, 2015). Between 2002 and 2011, the number of students in DE courses grew from 1.2 million (Waits et al., 2005) to 2.0 million (Marken et al., 2013). The increase in the number of high school students enrolled in college courses is due, in part, to widespread criticism that the high school curriculum does not adequately prepare students for college (Andrews, 2004; Bailey et al., 2002; Harnish & Lynch, 2005; Johnson & Brophy, 2006; Jordan et al., 2006; Karp & Hughes, 2008; Kirby, 2007; Kronholz, 2011). The consequences of inadequate college preparation are evident. According to the U.S. Department of Education (Duncan & Skelley, 2010), over 40% of students in four-year colleges fail to graduate within six years and close to 70% of students in community colleges fail to complete a two-year program within three years. Issues surrounding low college graduation rates are compounded by scholarly research that reveals disparities in college graduation rates based on race, socioeconomic status (SES), and parents’ educational background (Radford et al., 2010; Venezia et al., 2003).
While 60% of high SES students earned at least a bachelor's degree within 8 years of graduation from high school, only 29% of middle SES and 14% of low SES students completed their degrees within a similar timeframe (Kena et al., 2015). These findings are consistent with reports that, despite high aspirations, low income and minority students are less likely to have access to a college preparatory curriculum in high school (Venezia et al., 2003).

In addition to high college attrition rates, remediation in college is also a significant issue (Bautsch, 2011; Strong American Schools, 2008). According to Bautsch (2011), remedial (or developmental) courses are those below what would be deemed as “college level.” Although financial aid may be used for tuition, these courses tend to be non-credit bearing. Low income and minority students are more likely to enroll in developmental courses than affluent, White students (Bautsch, 2011; Prescott, 2006; Venezia et al., 2003). Moreover, students in developmental courses face an additional financial burden and are more likely to drop out of college. In the 2007-2008 school year, 36% of first-year undergraduate students reported they had taken a developmental course (Snyder & Dillow, 2012). Rates for students in community colleges are much higher; 43% of students in these institutions needed remediation (Bautsch, 2011; Strong American Schools, 2008). Many researchers have noted that such remediation rates are likely conservative estimates (Bautsch, 2011; Snyder & Dillow, 2012; Strong American Schools, 2008). For example, some literature reports that 68% of community college students enroll in at least one developmental course (Center for Community College Student Engagement, 2016).
One explanation for high college attrition rates could be the disparity between secondary and postsecondary educational systems (Harnish & Lynch, 2005; Hoffman et al., 2009; Kisker, 2006; McDonough & Fann, 2007; Mokher & McLendon, 2009; Venezia et al., 2003). The gap between high school and college has also been linked to the widespread demand for developmental courses (Bautsch, 2011; University of Maine System, 2014; Venezia et al., 2003). The source for this disconnect in educational systems is deeply rooted in the history of U.S. education at the secondary and postsecondary levels (Cohen & Kisker, 2010; Kirst & Venezia, 2001; Thelin, 1984).

The Historic Disparity between Secondary and Postsecondary Institutions

Analyzing the development and configurations of educational institutions from an historical perspective reveals how their early establishment led to the gap between K-12 schools and colleges and universities. Cremin (1976) defined configurations of education as the way multiple institutions that educate interact with each other, and noted that these relations may be beneficial or conflicting. Although Cremin broadly defined educational institutions, I will focus on the nature of relations among secondary and postsecondary institutions. The incongruous relationship between public K-12 and postsecondary institutions may impede students as they transfer from one institution to another (Kirst & Venezia, 2001; Lerner & Brand, 2006; Strong American Schools, 2008; Venezia et al., 2003). This phenomenon is unique in that secondary and postsecondary institutions in the U.S. have a much greater disparity between them than in most other nations (Kirst & Venezia, 2001).

Cohen and Kisker (2010) noted, “If the founding of higher education institutions had followed instead of preceded the secondary schools, the colleges might have
developed their curriculum as the natural outgrowth of that which the schools taught the younger students” (p. 148). This significant development – the fact that colleges developed before secondary schools – explains a large portion of the disparity between the institutions (Cohen & Kisker, 2010; Thelin, 1984). Soon after public high schools were established, conflicts between secondary and postsecondary institutions emerged and set the foundation for decades of discord still relevant today (Cohen & Kisker, 2010).

Other important factors that contributed to the historic disparity between secondary and postsecondary education included the fact that there were no external agencies to provide oversight as early colleges were established (Cohen & Kisker, 2010). The federal government made no attempt to regulate the plethora of institutions and variety of institutional types that were created in the early 1800s. Furthermore, education was notably absent from the Constitution, and the federal government chose not to establish an organization to regulate them (Butts & Cremin, 1953). These decisions, early in the foundation of U.S. higher education, resulted in an unsystematic approach to the development of colleges (Cremin, 1980).

**Secondary Schools**

The development of the comprehensive high school was often described as the final rung on a ladder that connected students from early childhood to college (Butts & Cremin, 1953; Cremin, 1976, 1980). Although many historians utilize the ladder analogy, there are different perspectives of how the ladder worked. Though the initial purpose of public high schools was not to prepare students for college, high schools had two impacts on higher education (Cohen & Kisker, 2010). One, students attended high school first, which increased the age of students entering college; and, two, high schools improved the
educational aspirations of the student body. Thelin (1984) noted how university-builders did not anticipate how dependent they would be on secondary educational institutions.

Tyack (1967) emphasized high school as filling the gap between the common elementary school and college. The missing rung on the ladder, according to Charles W. Eliot, was the high school. As President of Harvard College in the late 1800s, Eliot reformed undergraduate education by establishing an elective system (Thelin, 1984). In 1890, Eliot noted there was no system of secondary education in the American Union and proposed more schools and common standards to address the gaps (Tyack, 1967). Eliot suggested that colleges could control secondary school instruction through college admissions requirements (Tyack, 1967). He espoused the idea that secondary schools would adapt their curricula to meet the requirements of colleges.

In the late 1800s, college leaders imposed authority on secondary schools by controlling the admissions requirements (Cohen & Kisker, 2010; Tyack, 1967). College admissions officers became gatekeepers (Tyack, 1967). Eliot led the creation of the first College Entrance Examination Board in 1901 in order to further standardize the admissions process, which perpetuated the pattern of student sorting into categories of acceptability to the colleges (Tyack, 1967). Just a few years later, beginning in 1905, intelligence scales were created and adopted to measure intelligence, aptitude, and achievement. Sorting of high school students was closely tied to the development of achievement tests in an effort to bring a scientific approach to education (Cremin, 1988).

Another response to early high schools was that some college leaders inspected high schools in an early form of accreditation (Cohen & Kisker, 2010; Thelin, 1984; Tyack, 1967). Secondary and postsecondary educational systems were briefly linked as
the College Board set uniform standards for each academic subject (Venezia et al., 2003). The College Board also issued standards aimed at helping high school students get ready for college entrance examinations.

In 1909 the Carnegie Unit was defined. The Carnegie Unit represented an articulation agreement between high schools and colleges that represented standardized content as well as length of course (Thelin, 1984; Tyack, 1967). This creation was another example of how college leaders regulated, and exerted their authority on, secondary schools. Colleges leaders also addressed increased dissatisfaction with the preparation of students from public secondary schools by developing developmental programs (Cohen & Kisker, 2010). While some colleges addressed the preparation issue by relying heavily on private preparatory schools for a pool of college ready students, others lowered their admission standards.

Alternatively, Butts and Cremin (1953) suggested the state university completed the ladder in which qualified students could climb from the common elementary school, to public high school, to public state university (in some states tuition-free). Urban and Wagoner (2004) emphasized how many students never reached the top, stepping off into the world of work. Regardless of the variety of perspectives on the educational ladder, it is clear that the relationships between elementary and secondary schools were intended to be formal. Conversely, the connections between high schools and colleges were not, save the potential criticism if high school graduates were not college ready.

Community Colleges

In the 1920s, junior colleges originated as extensions of local high schools (Orr & Bragg, 2000). The idea to integrate the two systems was proposed at the same time as
curricular offerings in the first two years of college were viewed as redundant to high school work (Kisker, 2006). Attempts to merge high schools and colleges in a 6-4-4 model were promoted by Leonard Koos in the 1930s and 1940s (Kisker, 2006). Koos focused on combining the last two years of high school and the first two years of college into a junior college. While some scholars and educators contended that integrating high school and junior colleges would support students academically and would be financially beneficial for states and institutions, other scholars advocated for separate junior colleges (Kisker, 2006). Regardless, efforts to unify the two systems failed (Kisker, 2006). This idea was largely unsuccessful due to the separate governance and funding structures for K-12 and higher education institutions. These efforts were renewed in the 1950s as higher education was viewed as a public good (Cohen & Kisker, 2010).

The Higher Education Act of 1965 forced state level alignment of colleges and consolidation (Cohen & Kisker, 2010). During this time, junior colleges were referred to as community colleges, which expanded significantly with the opening of an additional 457 colleges (American Association of Community Colleges, 2016). Although the community colleges were expanded to serve local needs (American Association of Community Colleges, 2016) and provide access to low SES students, they also served as a screening tool to filter students away from selective universities (Beach, 2011). Despite this legislation and some gains, there was widespread disagreement between institutions and a lack of cooperation. According to Cohen and Kisker (2010), individual campuses maintained their independence; this point is significant because if higher education institutions themselves, within state systems, were unable to work together, it is not
surprising that forming seamless relationships between high schools and colleges has remained a difficult feat.

Less than 10 public high schools followed a 6-4-4 model until the early 1970s when LaGuardia Community College and educators in the Bronx section of New York College pioneered the Middle College High School (Kisker, 2006). This program focused on students who were at risk of dropping out of high school and is considered to be one of the most successful examples of high school-community college collaboration (Kisker, 2006). Although this specific model was replicated throughout the country, it never became part of a large-scale reform initiative (Kisker, 2006).

Table 1 summarizes the differences between higher education and secondary education institutions. This concise comparison of the development, access, systems, governance, and funding reflects the striking contrasts between the two systems. Ironically, the similarities between both institutions represent aspects that are detrimental to the student population, such as an undefined and dynamic purpose and the tendency to sort students. While K-12 education sorts students by SES and serves as gatekeeper to college access, the fact that minority and low-income students are more likely to attend community colleges represents sorting at the college level (McDonough & Fann, 2007). Students likely face difficulties in transitioning from one system to another given the lack of structures that facilitate a seamless transition plan.
Table 1. A Comparison of Higher Education and Secondary Education Institutions

<table>
<thead>
<tr>
<th>Development</th>
<th>Higher Ed</th>
<th>Secondary Ed</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bottom up, community based, Piecemeal</td>
<td>Top down, state &amp; federal control</td>
<td>Purpose unclear, changing</td>
</tr>
<tr>
<td>Access</td>
<td>Began- elites</td>
<td>Mass education</td>
<td>Sorting</td>
</tr>
<tr>
<td></td>
<td>Then move to mass- but still only a few attend, even fewer finish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>NOT a system, not connected</td>
<td>System, regulated by states, fed (NCLB), public, concrete legislation</td>
<td>Public &amp; private, Some blends</td>
</tr>
<tr>
<td>Governance</td>
<td>Independent</td>
<td>Dependent</td>
<td>Subject to &amp; act on society</td>
</tr>
<tr>
<td>Funding</td>
<td>Tuition, philanthropy, Government grants, financial aid</td>
<td>Direct funding funneled through states, districts</td>
<td>Limited</td>
</tr>
</tbody>
</table>

Note. Sources: (Cohen & K isker, 2010; M cDonough & Fann, 2007; Thelin, 1984)

Implications

There are many consequences that can be attributed to the gap between secondary and postsecondary institutions (Goldrick-Rab et al., 2007; Kirst & Venezia, 2001; Venezia et al., 2003). For example, there is little incentive for collaboration between K-12 systems and higher education institutions. While policy in K-12 is determined by many political forces at the local, state, and federal levels, higher education policy is largely autonomous (Kirst & Venezia, 2001; Taylor et al., 2015). The disparities between elementary, secondary, and postsecondary educational institutions is evident also in their mission and funding structure (Fenske et al., 1997). Education for students in grades ranging from kindergarten through grade 12 is mandatory. The cost for education is shared among local taxpayers, the state, and the federal government. Access to college education, on the other hand, is largely determined by SES (Astin & Osequera, 2004;
Howard, 2001; McDonough & Fann, 2007). While financial aid is available, college tuition rates provide a significant source of funding to colleges and have risen sharply (Cohen & Kisker, 2010).

Hoffman (2005) noted, "Today's systems are jerrybuilt and small. States are negotiating among incompatible systems to combine funding streams, reconcile Carnegie Units and college credits, work out class schedules, and ensure high quality- to say nothing of attempting to earn buy-in from teachers, professors, and taxpayers" (p. 26). High school assessments, coursework, and standards do not meet those set by colleges and universities so students leave high school without a clear understanding of what will be expected of them in college (Goldrick-Rab et al., 2007; Venezia et al., 2003).

This disjuncture can impede successful transitions between the systems and diminishes educational opportunities for many students, particularly for those who are traditionally underrepresented in higher education (Venezia et al., 2003). According to Karp (2015), "Despite the increased importance of college, the structure of our education system continues to reflect the needs and assumptions of previous generations: high school graduation was seen as sufficient for most, college was only for some, and consequently there was no need to systematically connect the two sectors" (p. 104). For example, despite the K-12 system of education, remediation is still as necessary as it was 100 years ago due to high school grade inflation and increased numbers of students receiving a GED (Cohen & Kisker, 2010). Additionally, as secondary and postsecondary institutions are independent of each other, no one is held accountable for the barriers to access that students face in transitioning to college (Venezia et al., 2003).
Benefits of DE Programs

Dual enrollment programs have been proposed as an effective solution to bridge the historic gap between secondary and postsecondary institutions (Fisher & Abbott, 2011; Hoffman, 2003, 2005; Hoffman & Robins, 2005; Hoffman et al., 2009; Hughes, 2010; Kirby, 2007; Morrison, 2008; Reese, 2008). Researchers have found that DE programs facilitate transition to college, reduce the financial burden of college, and increase college aspirations (Hanson et al., 2015; Harnish & Lynch, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Morrison, 2008; Smith, 2007; Swanson, 2008). Participants in DE programs are more likely to enroll in college (Lichtenberger, Witt, Blankenberger, & Franklin, 2014) and tend to be more successful in college than non-participants (An, 2013a, 2013b; Bailey et al., 2002; Crouse & Allen, 2014; Ganzert, 2014; Hoffman & Robins, 2005; Jones, 2014; Roach et al., 2015). DE has also been promoted as a means to increase rigor in high school curriculum, assist low-achieving students in meeting standards, provide more opportunities for students in schools with limited resources, and reduce high school drop-out rates (Karp et al., 2007).

Many additional benefits of DE programs, to both high schools and colleges, have been described. DE programs have been reported to increase professional development opportunities for high school and college faculty, serve as a college recruitment tool (Harnish & Lynch, 2005; Jones, 2014; Scheffel et al., 2015; Taylor et al., 2015), promote relationships between secondary and postsecondary institutions (Scheffel et al., 2015; Stephenson, 2014), and reduce duplication of curricula (Harnish & Lynch, 2005). Other researchers touted broad implications such as providing a well-trained workforce (Smith,
and reducing the tax burden on taxpayers by eliminating duplication of high school and college credits (Johnson & Brophy, 2006; Stephenson, 2014).

**The Role of Community Colleges in DE Programs**

A key component in many DE programs is the secondary schools’ relationship with neighboring community colleges. Approximately 98% of community colleges nationwide provide DE opportunities to high school students (Marken et al., 2013). Community colleges and public school systems are the largest and most broadly serving public educational systems in the United States, and will continue to grow (Orr & Bragg, 2000). These institutions have been widely recognized for their role as a starting point for college based on their open-access philosophy (Mullin, 2010; Orr & Bragg, 2000). Community colleges have a unique role in the K-16 education system (Kisker, 2006; Orr & Bragg, 2000), as they are positioned at the mid-point between these two historically distinct segments in education, secondary and postsecondary (Mullin, 2010), and are logical educational partners because of their existing relationships with local high schools (Taylor & Pretlow, 2015). Community colleges are also characterized by their affordability, variety, and flexibility of programming, and the capacity to analyze individual students’ academic skills and provide specific support to complement preparation students received in high school (Orr & Bragg, 2000). An additional benefit is their service to local neighborhoods (Cohen & Brawer, 2008; Hoffman et al., 2009; Orr & Bragg, 2000; Taylor & Pretlow, 2015). According to Cohen and Brawer (2008), access to college depends on proximity; having a community college as a neighborhood institution provided college access to more students.
In response to policy reform initiatives in the late 1990s, which encouraged high school and community college cooperation (Jordan et al., 2006; Welsh et al., 2005), two-year colleges were among the first to provide DE opportunities (Hoffman et al., 2009; Taylor & Pretlow, 2015). Community colleges reorganized during this time to minimize barriers to student access and ensure a seamless transition from high school to college (Cohen & Brawar, 2008). This effort was a natural extension of the mission of community colleges, as they have historically served secondary schools by filling in the preparation gap between high school and college level work (Orr & Bragg, 2000), emphasized outreach to local high schools (Fenske et al., 1997; Hoffman et al., 2009; Taylor & Pretlow, 2015), and have designed programs to facilitate the college transition for underprepared students (Fenske et al., 1997). As such, community colleges have led the proliferation of DE programs (Welsh et al., 2005).

Initially, DE programs were a means for advanced students to gain accelerated coursework (Hoffman et al., 2009; Lords, 2000; Taylor & Pretlow, 2015). While programs for academically talented high school students had been in place, community colleges specifically led the way in providing access to students who were struggling in high school (Hoffman et al., 2009; Lords, 2000). Underrepresented students are concentrated at two-year colleges (Hoffman, 2003; McDonough & Fann, 2007). In addition, community colleges have become a primary means for high-risk youth to earn a two-year degree or transfer to a four-year program (Orr & Bragg, 2000). DE programs allow community colleges to recruit a broader range of students (Mokher & McLendon, 2009), particularly those who began their academic program at that college while still in high school (Hoffman et al., 2009). Two-year colleges became the strongest advocate for
DE programs as a way to increase enrollment and generate revenue (Mokher & McLendon, 2009). Community colleges provide access to college for students who are least likely to attend college, therefore focusing on the relationship between high schools and community colleges is relevant to studies of DE (Harnish & Lynch, 2005).

**Drawbacks of DE Programs**

While there is ample research that provides evidence of the many benefits of DE programs to high school students (Bailey et al., 2002; Harnish & Lynch, 2005; Hoffman & Robins, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Morrison, 2008; Smith, 2007; Swanson, 2008), little data exist on how students adapt to the different norms, habits, expectations, and study skills of their college courses while concurrently fulfilling the role of high school student (Kanny, 2015; Lerner & Brand, 2006). How high school students in DE programs navigate both disparate systems simultaneously has also not been explored in depth (Kanny, 2015).

In one extreme example of an unintended consequence of this merging of systems, Kronholz (2011) met with a student whose high school had a dress code. Before travelling to the college campus for his DE course, the student had to change into clothes to blend in with the college student population. He had to change into his uniform before returning to his high school. Kronholz (2011) further noted how attending classes on a college campus could be an isolating experience for a high school student. According to Lerner and Brand (2006), “Students ‘straddle’ two different systems, working at the intersection of both means knowledge of both systems is important” (p. xi).
Data also reveal how some students were unable to successfully navigate the dual expectations of high school and college (Kanny, 2015; Karp & Hughes, 2008). Kanny (2015) noted that students described drawbacks of DE courses including poor grades, negative interactions with other college students and faculty members, and a lack of support. Some colleges have also struggled with behavioral problems with high school students as some had enrolled in DE courses as a chance to get away from the high school during the day (Karp & Hughes, 2008). As a consequence, increased student screening has emerged as a way to ensure successful partnerships between the high school and college. Furthermore, the increased demand for DE programs has enabled increased selectivity in enrollment (Karp & Hughes, 2008).

DE course rigor has also been scrutinized (Dougan, 2005; Hughes, 2010; Lewis & Overman, 2008; Mangan, 2014; Scheffel et al., 2015). One concern is that high school students lack the maturity to effectively participate in class and complete required coursework (Dougan, 2005; Ferguson, Baker, & Burnett, 2015; Howley et al., 2013; Tinberg & Nadeau, 2011). In other DE classes, students have performed poorly, grades have been lower, and faculty have struggled to maintain course integrity (Hughes, 2010). Anecdotal evidence suggests professors have had to remediate because students have not mastered basic skills and may not be ready for rigorous coursework (Mangan, 2014). Others have contended that DE courses taught at the high school rely on memorization and thus do not represent a true college level experience (Mangan, 2014).

The National Alliance of Concurrent Enrollment Partnerships (NACEP) offers an accreditation program with standards to ensure DE program quality and rigor (National Alliance of Concurrent Enrollment Partnerships, 2014a). NACEP was founded in 1999
by leaders of DE programs in an effort to ensure quality of DE courses during a time of rapid expansion. At least 92 DE programs have earned NACEP accreditation in the areas of curriculum, faculty, students, assessment, and program evaluation (Scheffel et al., 2015). NACEP accreditation serves to demonstrate to students and school districts that the DE courses are comparable to college courses (Scheffel et al., 2015). However, the DE partnerships that are accredited represent a small percentage of all DE programs (Mangan, 2014).

Karp et al. (2004) implied that states find it difficult to balance equitable access to DE programs and maintaining academic integrity. On the other hand, researchers have asserted that equitable access to DE programs and maintaining course rigor need not be mutually exclusive given appropriate support for students as they navigate high school and college simultaneously (Hughes, 2010; Karp & Hughes, 2008; Lerner & Brand, 2006; Reese, 2008). While many researchers agree that DE students need additional assistance (Cowan & Goldhaber, 2015; Hughes, 2010; Karp & Hughes, 2008; Lerner & Brand, 2006; Reese, 2008), some high school students may have limited or no access to college services (Karp & Hughes, 2008). Other DE programs have allowed students to utilize college services, but distance to campus and a lack of an orientation program were likely reasons why students did not utilize potential opportunities for support and integration into the college experience. Karp and Hughes (2008) noted that high school support services alone were unlikely to reinforce the college aspirations of DE students and concluded that DE programs unintentionally require high levels of motivation.

Conversely, some examples of positive relationships included college professors providing weekly progress reports and a program in which students had a designated high
school class solely for the purpose of supporting college coursework (Karp & Hughes, 2008). Other specialized programs that address barriers to enrollment and provide student support have demonstrated partnerships can result in student success (Scheffel et al., 2015; Stephenson, 2014). For example, early college high schools offer a more comprehensive approach than DE courses and represent an example of a model program where the focus is on underrepresented students, institutions work together, community partners are incorporated, and students receive comprehensive support that includes help with the college application and financial aid process (Berger et al., 2013). These examples of student support programs demonstrate how an integrated systems approach can facilitate transition. However, examples of this cohesive approach to DE programs tend not to be widespread (Karp & Hughes, 2008). A better understanding the challenges students face as they straddle both secondary and postsecondary educational institutions could provide valuable insights to better address student needs.

**College Education in Maine**

The current context of education in Maine as it relates to postsecondary access for underprivileged students reflects national trends, and supports the impetus for expanding DE programs. Maine's high school graduation rate improved slightly between 2006 and 2014 from 84.44% to 86.48% (Maine Department of Education, 2016). While 85% of Maine’s high school juniors and seniors express college aspirations, there is a significant gap between high school graduation rates and college enrollment patterns (Plimpton, 2007). Only 62% of graduating seniors enrolled in college in the fall of 2014 (Mitchell Institute & Plimpton Research, 2015). Of those students who did enter college, many
needed developmental courses, which can serve as an indicator of college readiness (Bautsch, 2011; Langhauser, 2015; Page, 2016; University of Maine System, 2014).

In response to Public Law 2011, Chapter 615, “An Act to Require the Maine Community College System, the University of Maine System and the Maine Maritime Academy to Report the Number of Students Enrolled in Remedial Courses,” data on remediation at Maine’s state colleges are presented annually (University of Maine System, 2014). These publicly available reports focus on Maine high school graduates who matriculate directly from high school. The name of the secondary schools are reported, as well as the number of students from each of these schools requiring remediation in Math and/or English (University of Maine System, 2014). In the fall of 2012, an average of 12% of college freshmen attending a public four-year college in Maine enrolled in developmental classes (University of Maine System, 2014). While this average decreased to 10.4% for the fall of 2015, the University of Maine and University of Maine at Presque Isle did not offer remedial courses (Page, 2016), which may account for some of the change. Data are disaggregated by campus and vary widely. While 54.5% of Maine’s high school graduates at the University of Maine at Machias enrolled in developmental classes, only 16.2% needed remediation at the University of Maine at Farmington (Page, 2016). In the fall of 2012, 50.7% percent of first-year students entering Maine’s community colleges needed at least one developmental course, while 43.6% enrolled in a developmental course in the fall of 2015 (Langhauser, 2015).

Maine’s public higher education institutions must also report retention rates for students enrolled in developmental courses (Page, 2016). Approximately 66.8% of students enrolled in developmental courses within the University of Maine System in the
fall of 2014 returned to the same university or transferred to another university in the fall of 2015 (University of Maine System, 2014). While graduation rates are not yet available for students who enrolled in September 2012 at Maine’s four-year universities, approximately 42.6% of Maine’s community college students in the fall 2012 cohort who enrolled in developmental courses either remained in college, graduated, or transferred by the fall of 2015 (Langhauser, 2015). Maine’s overall college graduation rates reveal that only 57% of students will earn a bachelor’s degree within six years (Mitchell Institute & Plimpton Research, 2015) and 26% will earn a two-year degree or certificate within three years (these figures were calculated based on the percentage of first-time students who completed a degree or certificate from the college in which they initially enrolled; National Center for Education Statistics, 2016).

The impact of these statistics may portray a bleak picture of college attainment levels of Maine’s adults. While 39.9% of working-age adults in Maine have a college degree, Maine lags behind New England’s average of 45.8% and has the lowest percentage of college graduates in all of New England (Lumina Foundation, 2015). Per-capita income is correlated with this level of educational attainment. For example, 53% of working-age adults in Cumberland County have a college degree (Lumina Foundation, 2015) and had the highest per-capita income in the State of $49,781 (Bureau of Economic Analysis, 2015). At the same time, Piscataquis, Oxford, and Washington counties had per capita income of less than $35,000 (Bureau of Economic Analysis, 2015), with less than 30% of adults with a college degree (Lumina Foundation, 2015). These trends reflect national data, and represent the financial consequences of fewer adults in the workforce
with a college degree (Plimpton, 2007). Programs to assist in college attainment and completion are therefore vital to Maine, its people, and its future.

**Maine’s Dual Enrollment Programs**

Maine’s DE programs have expanded significantly (Gallagher, 2015) and have been widely recognized as a model because of the extensive program support and a focus on underrepresented students (Fisher & Abbott, 2011; Hoffman, 2005; Hoffman & Robins, 2005). Between 2005 and 2010, the number of DE courses increased by 75% (Plimpton, 2011). During the 2010-2011 school year, in particular, high school juniors and seniors took 1,796 DE courses. This growth may not equate to access, however. Indeed, during that time, only 6% of all juniors and seniors in Maine’s public high schools took such courses (Plimpton et al., 2011). According to recent estimates, Maine’s community colleges have had the greatest enrollment increases from 1,651 students in 2010-2011 to 2,824 students in 2014-2015, while institutions in the University of Maine System have seen gains from 1,400 to 1,700 students between the fall of 2013 and the fall of 2015 (Gallagher, 2015). While these figures represent progress, it is important to note that individual students may enroll in more than one course. This may, in part, explain some of the discrepancy between student and course enrollment data.

The Senator George J. Mitchell Scholarship Research Institute has contributed significantly to the literature on DE programs in Maine. A survey of Maine’s 129 public high schools reported the following benefits to students from Maine’s DE programs: (a) offering an inexpensive or free way to earn college credit, (b) demonstrating college readiness, (c) building self-confidence, (d) increasing course rigor, and (e) facilitating the college transition (Plimpton, 2011). In a more detailed study conducted in 2008, the
Mitchell Institute reported characteristics, outcomes, and observations of 690 students enrolled in early college classes (Plimpton, 2008). Students rated their early college experience positively. This report also included some direct quotes from students. Two students noted their high school classes were not challenging or interesting, but felt renewed interest in school when they took college courses. Others described how they developed more disciplined work habits as a result of their experience. Students valued the opportunity to adapt to a college structure and became more confident in their ability to attend college.

These themes were reflected in the overall survey results. DE participation increased college aspirations and subsequent enrollment in those surveyed (Plimpton, 2008). While the overall college going rate of all high schools included in the survey was 60%, 80% of students in DE courses enrolled in college the fall after graduation. This disparity may suggest that participation in DE courses has a positive impact on matriculation rates. The majority of students enrolled in DE courses (72%) were first-generation college students. These students were largely successful in their college courses, 83% earned a 2.0 grade point average (GPA) or higher (Plimpton, 2008). These benefits all demonstrate ways in which Maine’s students can achieve success through access to DE programs.

Conversely, students with lower high school GPAs were more likely to fail their DE classes, while students with higher GPAs earned better grades in their college courses (Plimpton et al., 2011). Data were not available to determine whether socioeconomic status (SES) or student’s rural status were linked to student success. In addition, data
were not disaggregated to differentiate between programs offered at two-year and four-year colleges.

In 2011, Maine Governor Paul LePage established the Governor’s Task Force on Expanding Early Postsecondary Access for High School Students in Maine (Governor's Task Force, 2012). This group was comprised of leaders from secondary and postsecondary institutions, the Maine Department of Education, the Maine State Legislature, and the Mitchell Institute. The Task Force was asked to identify barriers to accessing DE programs, and to recommend necessary policy changes to address these obstacles. The Governor’s Task Force reported that significant barriers in access to DE programs remain including funding, transportation and scheduling, district capacity, access to information, and policy (Governor's Task Force, 2012). These findings are consistent with studies conducted by the Mitchell Institute (Plimpton, 2007, 2011). Plimpton (2011), however, reported that lack of student interest was also a concern.

Programs Within the Maine Community College System

The Maine Community College System (MCCS) was established in 2003 (Maine Community College System, 2014d) and is comprised of seven two-year colleges located throughout Maine (Maine Community College System, 2014a). The MCCS includes the following community colleges and their locations: Central Maine (Auburn), Southern Maine (South Portland and Brunswick), York County (Wells), Kennebec Valley (Fairfield and Hinckley), Eastern Maine (Bangor), Western Maine (Calais), and Northern Maine (Presque Isle). DE programs within MCCS include On Course for College (Maine Community College System, 2016d), Early College for ME (Maine Community College System, 2016c), and other individually established DE partnerships (Taylor et al., 2015).
The MCCS refers to courses taught at a local high school by college approved high school teachers as concurrent enrollment, while all other programs taught by college faculty are considered traditional DE (Pour, 2016).

For juniors and seniors with a high school GPA of B or better, the program “On Course for College” within the MCCS offers free or reduced-cost college courses on campus, online, at an outreach center, or at a local high school (Maine Community College System, 2016d). “Early College for ME” is a transition program offered at 80 high schools in Maine (Maine Community College System, 2016c). Responsible juniors in good standing are selected by their high school to receive a community college scholarship of up to $2000 over two years and enroll in college courses during their senior year of high school (Maine Community College System, 2016c). Students must take a college placement test to be admitted (Maine Community College System, 2014c). Participating students receive support and advising on college admissions and the financial aid process (Maine Community College System, 2016c). According to the Maine Community College System (2016c), 8,253 students have been served by the Early College for ME program since it began in 2003.

**Gateways and Gatekeepers to Access**

Many factors that facilitate or impede college access are also relevant to access to DE programs, thus these are discussed simultaneously. For the purposes of this study, access is defined by threshold access, or whenever a student enrolled college long enough to generate a transcript (Adelman, 2007). Because students enrolled in DE programs within the MCCS generate a college transcript (Maine Community College System, 2016c, 2016d), access to DE programs infers college access as well, although this does
not guarantee college matriculation. Factors that serve as gateways or gatekeepers include: effective guidance counselors, SES and parental education level, rural status, policy, admissions requirements, and funding.

**High School Guidance Counselors**

Access to college and to DE programs in Maine may be facilitated through one key constituency. High school guidance counselors may have a significant role in helping students prepare for and enroll in college (Hanson et al., 2015; Lee, 1987; McDonough & Fann, 2007; McKillip, Rawls, & Barry, 2012; Woods & Domina, 2014). Without access to critical information, even high achieving students are unable to navigate the barriers to college entrance (Woods & Domina, 2014). Researchers found that when guidance counselors had smaller caseloads, students were more successful in navigating the high school-to-college pipeline (Woods & Domina, 2014). However, guidance counselors in schools that serve underrepresented students are more likely to have larger caseloads (Woods & Domina, 2014).

Guidance counselors have a significant influence on first-generation and low SES students in particular by promoting or discouraging students from pursuing college (Woods & Domina, 2014). Students from low SES backgrounds may tend to rely on information from their high school counselors because their parents and siblings did not attend college (Goldrick-Rab et al., 2007). These students are less likely to receive information and counseling about financial aid and are less likely to file the necessary paperwork to apply for federal student aid. Conversely, high-income students receive quality information from a variety of sources (Goldrick-Rab et al., 2007).
Researchers noted that students who need the assistance in preparing for the college the most are the least likely to have access to an effective school counselor, including first-generation, lower SES, racial and ethnic minorities, rural, and lower achieving students (Lee, 1987; McKillip et al., 2012). Maine’s Legislature has set the guidance counselor to student ratio in high schools to be no more than 250:1 (Maine Legislature, 2003), but it is unclear how or if this limit is enforced. According to Immerwahr and Farkas (2006), guidance counselors have the ability to promote or discourage students from participating in accelerated learning opportunities like DE programs. When students are encouraged, and are successful, they benefit from a subculture that promotes college readiness and often enroll in more courses (Immerwahr & Farkas, 2006).

**Socioeconomic Status and Parental Education Level**

Income dictates where families live, which, in turn, affects where students attend schools (McDonough & Fann, 2007). Schools with children from wealthy families are more likely to have a culture promoting college (McDonough & Fann, 2007). Schools that serve children from low- to middle-class families emphasize workforce readiness and high school graduation and college information is not widely promoted (McDonough & Fann, 2007). Similarly, Johnson (2006) explained that students who are academically unprepared for college level work are blamed for their knowledge gap while the larger issues of inequity in the education systems themselves are ignored. While researchers have spent a significant amount of time exploring inequity at the individual level, there is a need to focus on societal inequality (McDonough & Fann, 2007).
Students who come from affluent families benefit from educational programs because they have the resources to navigate barriers to access (McDonough & Fann, 2007). Yet intervention programs, such as DE programs, benefit disadvantaged students most (An, 2013a). For example, An (2013a) reported that first-generation students who enrolled in DE courses were more likely to earn a college degree than students who did not. On the other hand, students with college-educated parents were likely to attend college and earn a degree, regardless of whether they took DE courses (An, 2013a).

Parental education level (Plimpton, 2007, 2008, 2015) and SES (Plimpton, 2015; Vander-Zanden, 2004) are relevant issues for Maine’s students. In an essay published in the Journal of Maine Education, Vander-Zanden (2004) described how inequity in SES directly impacts the quality of education of Maine’s students. Each of the four towns on Mount Desert Island has a different economic structure and population base. Mount Desert and Bar Harbor are wealthy towns that attract tourists. Southwest Harbor is a fishing community while Tremont is the poorest and relies primarily on a construction business. The resources provided to their respective elementary schools reflect the disparity in funding. This inequity is exacerbated as students merge at Mount Desert Island High School. According to Vander-Zanden (2004), “The hierarchy of the four towns, acting through the citizens that believe in it and already manifested in each students’ knowledge and skill base, decides in what classes the students enroll” (p. 12). She further noted how the quality of instruction was also disparate; students in general education classes faced structure and discipline while honors classes encouraged creativity. Not surprisingly, this tracking system ensured that students followed the same
career paths as their parents. Honors students pursued college while general education students entered the work force in low-wage, seasonal jobs.

The trends described by Vander-Zanden (2004) were reflected in detailed studies of barriers to college access for Maine’s students (Plimpton, 2007, 2015). A student’s academic track in high school is important (Plimpton, 2007). In Plimpton’s studies, general and vocational students tended to receive less encouragement and support to attend college, while students in the college preparatory track often felt more prepared for college. There was a high correlation between parent education level and academic track of their student. Some parents support and encourage their student to be the first in the family to attend college, while others discourage their students because they lack information and experience (Plimpton, 2007). Furthermore, in addition to teacher recommendation, parental preferences in her study were influential in determining student placement in college preparatory courses (Plimpton, 2007).

The scholarly literature confirms that financial barriers to access are not unique to Maine. Goldrick-Rab et al. (2007) noted disadvantaged students were more likely to follow vocational versus academic pathways, take fewer math and science courses, and attend schools that do not have college preparation and counseling programs. The Mitchell Institute noted that Maine families do not have adequate information to guide them through the financial aid process (Plimpton, 2007). As a result, students who are eligible for financial aid do not complete the necessary application. According to Walpole (2003), differences between students from low SES and high SES backgrounds “are cumulative, result from many forces-including individual agency-and are shaped by SES differences such as parental interaction styles and expectations, school structure,
school experiences and expectations, as well as college costs and financial aid availability” (p. 47).

Even with adequate support to navigate the financial aid process, low-income students face significant gaps between aid and college costs. Plimpton (2015) conducted an economic analysis of the costs of college attendance. After accounting for financial aid and part-time work, in order to attend a community college full-time for two years, students with family income below $30,000 needed an additional $3,440, students with family income between $30,000 and $60,000 needed an additional $1,938, and students with incomes between $60,000 and $80,000 had no shortage with part-time work, and students with incomes above $80,000 could afford to attend without working. Using the same model for a four-year degree within the University of Maine System, students with family income below $30,000 needed an additional $17,680, students with family income between $30,000 and $60,000 needed an additional $14,676, and students with incomes between $60,000 and $80,000 had a shortage of $820 (Plimpton, 2015).

Rural Status

Related to SES in the State of Maine is geography. More specifically, Maine was rated as the most rural state in the nation in 2010; approximately 61% of Maine residents live in rural areas (Wickenheiser, 2012). There are multiple definitions of rurality, and researchers acknowledge that there are many differences in communities categorized as rural, urban, or suburban (Byun, Meece & Irvin, 2012). The Census Bureau defines rural areas as those with populations lower than 2,500. Urban areas, which include those densely populated with 50,000 or more people, include Portland, Bangor, and Lewiston. Communities with populations between 2,500 and 50,000 are identified as
urban clusters. Maine has 24 urban clusters (Wickenheiser, 2012). Structural disadvantages to students who live in rural areas include lower socioeconomic status (SES), fewer parents with a college degree, lower educational expectations, and limited access to career counseling and a college preparatory curriculum (Byun, Meece & Irvin, 2012). On the other hand, rural communities offer strong social connections that may help to offset some of the limited financial resources. Nevertheless, students from rural areas are less likely to attend college and earn a college degree than nonrural students (Byun et al., 2012).

A significant barrier to college and DE program access is transportation to and distance from the college campus (Governor's Task Force, 2012; Plimpton, 2011). While Maine’s high school students may participate in a variety of DE programs offered through the University of Maine System, the Maine Community College System, community and technical education high schools, and some private colleges (Plimpton, 2008), student access to these programs is limited by geographic location.

The University of Maine has attempted to address this issue by designing the Academ-e program designed to span geographic boundaries (University of Maine, 2016). Academ-e was Maine’s first online DE program, though participants are required to attend an orientation session on the University of Maine campus before the start of the school year (University of Maine, 2016). Academ-e serves an example of how a program can simultaneously facilitate and hinder DE access, as travelling to Orono, where the campus is located, may be prohibitive for potential students. In addition, internet access has also been a barrier to some students for accessing online course options (Plimpton, 2011). Despite recent advances in expanding Internet access, families living in urban and
suburban areas still have greater access to high-speed Internet connections in their homes than those living in rural areas due to the lack of infrastructure in rural areas as well as demographic factors such as age and income (Boase, 2010).

Although online courses are available through Academ-e and other programs, 87% of Maine's early college courses are offered at the college campus (Plimpton et al., 2011). Despite many options for students, efforts are uncoordinated. Different institutions have different admission requirements. Participation may be restricted to students with a certain grade point average, standardized test score, or teacher recommendation. According to a survey from Plimpton et al. (2011), high school leaders indicated it would be helpful to have compiled information on college offerings and related policies.

In order to bridge the educational divide between Maine's rural and urban areas, the MCCS developed the Rural Initiative (Maine Community College System, 2007a). In the summer and fall of 2007, MCCS then President John Fitzsimmons toured rural Maine and met with community and business leaders to discuss how the community college system could address the needs of Maine's rural economies. Between Maine's seven community colleges and their nine off-campus centers, 92% of Maine residents live within 25 miles of a community college (Maine Community College System, 2007a). For the purposes of the rural initiative, a committee of representatives from the Maine Department of Education, Maine Department of Labor, and the MCCS determined that all areas of Maine would be considered rural except those with populations over 10,000, or contiguous to towns and cities with populations over 10,000 (Maine Community College System, 2007b). For the purpose of my research, I have used the MCCS definition of rural (as described in Appendix A), as this local definition takes into account
Maine’s unique geography. MCCS has identified and listed 57 urban communities, all other communities are part of the MCCS Rural Initiative (Maine Community College System, 2007b).

One theme that emerged from Rural Initiative meetings was the importance of community colleges to rural areas (Maine Community College System, 2007a).

According to the Maine Community College System (2007a), “The choice for many rural Maine people (especially those who are low-income or the first in their family to consider higher education) is not between a community college and another institution; it’s between a community college and nothing” (p. 4). The “On Course for College” DE program was introduced as part of the Rural Initiative of MCCS in 2007. The goal of this program was to provide approximately 500 new dual enrollment courses (250 specifically earmarked for rural students), enhanced on-line and ITV offerings, and offer courses at local high schools which represented approximately $60,000 in scholarships for rural Maine high school students (Maine Community College System, 2007a).

**Policy**

While DE programs in Maine have been touted as a promising practice to improve discouraging college enrollment and persistence patterns (Plimpton, 2007, 2008, 2011; Plimpton et al., 2011), it is also true that DE policies play a significant role in determining which students can access and reap the benefits of DE programs (Hoffman, 2005; Karp et al., 2004; Karp & Hughes, 2008; Krueger, 2006; McDonough & Fann, 2007; Museus et al., 2007; Smith, 2007; Taylor et al., 2015). Policy is largely determined by individual states, and researchers vary in their assessment of what constitutes a DE policy. Several reports claim 38 states have DE policies (Hoffman, 2005; Karp et al.,

Researchers agree that DE policies vary significantly between states (Bailey et al., 2002; Hoffman, 2003; Hoffman & Robins, 2005; Karp et al., 2004; Michelau, 2006; Olson, 2006). At the same time, a written state-level policy does not guarantee consistent implementation or program success (Michelau, 2006). DE policies can help to facilitate alignment between high schools and colleges to improve DE program quality. According to Karp et al. (2004), policy may inhibit access to programs by regulation of DE instructors’ credentials. For example, policies such as admissions requirements and a lack of funding may hinder program access (Harnish & Lynch, 2005; Museus et al., 2007). I discuss each of these limitations in turn below.

**DE Admissions Requirements.**

Nationwide, almost 80% of state policies regulated which students can access DE courses (Taylor et al., 2015; Michelau, 2006). Additional requirements may include an application form, class rank, course prerequisites, and letters of recommendation from an administrator (Michelau, 2006). Other DE course prerequisite language was ambiguous and subjective and included terms such as “mature, responsible, qualified, and academically talented” (Michelau, 2006). DE admissions practices often conflict with policy recommendations, which promote access to underserved students (Michelau, 2006; Museus et al., 2007).

According to Museus et al. (2007), while DE programs hold great promise for increasing postsecondary educational opportunity, they also have the potential to exacerbate persisting
inequities in college access. If policymakers are not conscious of the potential unintended consequences of DE policies and programs, opportunities for involvement in these programs could be inadvertently limited to relatively affluent and other traditional student populations, thereby contributing to increases in college access and success among already advantaged student populations and excluding those students who have historically been the victims of educational inequity (p. 6).

Current research emphasizing issues of access has reflected the unintended consequences of DE policy. Most students enrolled in DE courses had high GPAs and were already college-bound (Harnish & Lynch, 2005; Karp et al., 2007; Museus et al., 2007; Welsh et al., 2005). Analyses of demographics of DE students revealed that White students were disproportionately represented, while students of color were underrepresented (Karp et al., 2007; Museus et al., 2007; Prescott, 2006; Smith, 2007; Welsh et al., 2005). A similar pattern was found when examining SES. Students from affluent families were more likely to enroll in DE programs, while students from low-income families comprised a smaller proportion of enrollment figures (Karp et al., 2007; Museus et al., 2007; Prescott, 2006; Welsh et al., 2005).

Academically strong and highly motivated students are likely to attend and be successful in college, regardless of enrollment in DE programs (Karp et al., 2004). At the same time, researchers found that the most disadvantaged students (male, low-SES students) benefitted more from DE programs than their advantaged peers (Karp et al., 2007). Green (2001) noted how college transition is a particularly significant issue with which African American youth contend.
Other examples demonstrated how DE programs were not addressing the needs of underserved populations and further reflect unintended consequences of DE policy. In one instance, schools boasted that their DE students were “the cream of the crop” (Harnish & Lynch, 2005, p. 82). In this study, DE instructors did not support policies that strictly screen potential DE students, but did not challenge this system. In other states that targeted students with high academic achievement for their DE programs, the result was a diminished pool of resources for students in Career and Technical Education programs (Karp et al., 2007). These ideals were reflected in many of the DE programs reviewed; top students were able to navigate barriers to DE access, while marginalized students were excluded (Harnish & Lynch, 2005; Johnson & Brophy, 2006). According to (Taylor et al., 2015), students who most need DE programs are least likely to be able to navigate the barriers imposed by policy including registration and minimum eligibility requirements. These studies reflect that concern.

**Funding.**

A second area of DE policy that allows or prohibits access is funding. DE policies can help to facilitate alignment between high schools and colleges to improve DE program quality; however, few state policies provide additional funding to support these partnerships (Taylor et al., 2015). In addition, financial resources are a significant barrier to DE programs in Maine (Governor’s Task Force, 2012; Plimpton, 2011). Sixty-seven percent of high schools reported that students pay for a portion of the costs associated with their DE courses (Plimpton, 2011). In the past few years, the proportion of grant funds and school budget funds dedicated to defray student expenses has decreased (Plimpton, 2011). Though DE courses can serve as a means to save on college costs, if
individual students do not have the financial means to enroll in DE courses, fees may
serve as a gatekeeper to DE access (Plimpton et al., 2011).

In the last decade, the average increase in tuition, fees, and room and board at
Maine’s colleges was 42% (Plimpton, 2011). As SES is the most influential factor in
college access (McDonough & Fann, 2007), rising costs directly impact Maine’s poor
and working class families. Financial aid has not grown in tandem with increased costs;
students have responded by incurring more debt (Plimpton et al., 2011). Maine’s per
capita income has not increased to keep pace with higher college costs, and is the lowest
in New England ($40,745); far below the New England average of $56,642 (Bureau of
Economic Analysis, 2015). These trends impact student enrollment in college. In Maine,
48% of students who are economically disadvantaged attend college directly after high
school, while 72% of students who are not economically disadvantaged matriculate
(Mitchell Institute & Plimpton Research, 2015).

**Unintended Consequences of DE Programs**

Despite abundant claims that DE programs provide expanded access to college for
a broader range of students (Fenske et al., 1997; Hoffman, 2003, 2005; Hoffman &
Robins, 2005; Hoffman et al., 2009; Jordan et al., 2006), there is evidence to demonstrate
that access to DE programs is largely limited to privileged students (Harnish & Lynch,
2005; Johnson & Brophy, 2006; Karp et al., 2007; Karp & Hughes, 2008; Krueger, 2006;
Museus et al., 2007; Smith, 2007; Welsh et al., 2005). This issue is significant, as
scholarly research reveals disparities in college graduation rates based on race, SES, and
parents’ educational background (Radford et al., 2010; Venezia et al., 2003). This
research is consistent with reports that document that, despite high aspirations, low
income and minority students are less likely to have access to a college preparatory curriculum in high school and are more likely to need developmental courses in college (Venezia et al., 2003).

Students from rural areas may be further disadvantaged as they tend to have unmet needs due to academic, financial, and social limitations (Johnson & Brophy, 2006; Palaich et al., 2006). The culture of rural areas is a factor that is often overlooked, and may discourage students from leaving home after high school (Fisher & Abbott, 2011). Schools with low SES students may emphasize high school graduation, work, or community college as the only viable postsecondary option (McDonough & Fann, 2007). In addition, a lack of proximity to college negatively impacts student familiarity with college, thus diminishing aspirations (McDonough & Fann, 2007).

Despite efforts to promote college access via DE for economically disadvantaged students in rural areas, wealthy students may still be those most likely to participate (Johnson & Brophy, 2006). Johnson and Brophy (2006) revealed how affluent students took advantage of the cost savings opportunities and admitted they participated in DE programs to save money on future tuition costs. Their study reflects an unintended consequence of these kinds of DE policies. According to McDonough and Fann (2007), a new body of research looks at the impact of geography on college enrollment and persistence. Rural students are least likely to attend college even though this group of students has high school graduation rates. Not surprisingly, rural students are more likely to face economic challenges to college access. Rural high schools may not attract high quality faculty, offer a variety of college preparatory courses, or have the means to integrate technology (McDonough & Fann, 2007).
Barriers to college access for rural students are particularly relevant to Maine, where geographic boundaries are a driving force in cultural attitudes about college (Harney, 2004). The economic divide between Maine’s urban and rural counties has been growing over the past 30 years (Long, 2012). These trends are reflected in economic output and per capita income: urban counties in Southern Maine, York, Cumberland, and Sagadahoc fare best (Bureau of Economic Analysis, 2015). At the same time, rural counties such as Somerset and Aroostook counties have high secondary graduation rates (84.25% and 87.59% respectively) (Maine Department of Education, 2016), yet low college degree attainment among the working age population (26.7% and 29.8% respectively (Lumina Foundation, 2015).

McDonough and Fann (2007) noted that outreach programs offer hope but are inequitable because they cannot serve all students consistently and are not integrated with K-12 institutions. Moreover, a culture of low expectations has hindered efforts to provide additional opportunities to underrepresented youth (Palaich et al., 2006). According to Harney (2004), Executive Director of the Maine Compact for Higher Education, promoting higher education in Maine will require changing values, culture, expectations, and behaviors of Maine’s citizens. Rural and first-generation students may also face resistance from their family members, who may fear outmigration (Fisher & Abbott, 2011).

Critical Race Theory

Critical Race Theory can be used as one lens through which to analyze DE programs and the impact of policy on facilitating or impeding college access for students of low SES, students of color, and first-generation students. The main goal of Critical
Theory is to provide perspectives that emancipate and is based on the ontology of historical realism, which reveals how ideology distorts reality (Glesne, 2011). According to Glesne (2011), critical theorists explore how these distorted values are oppressive, accepted as the norm, and perpetuated by societal structures. Key components of Critical Theory include the historical basis of social struggle, seeking justice, and revealing how power and oppression impact social systems (Hebert & Beardsley, 2002).

Critical Race Theory (CRT) was initially developed by legal scholars who wanted to integrate Critical Theory into discourse related to race and racism (Ladson-Billings, 1998; Yosso, 2005). According to Yosso (2005), CRT is used to challenge the implicit and explicit ways race and racism impact social structures. The five main tenets of CRT include: (a) racism as endemic; (b) an interdisciplinary approach (borrowed from liberalism, feminism, Marxism); (c) a commitment to social justice; (d) the goal of challenging dominant ideologies; and (e) situating race and racism within the context of people’s everyday lives to create counter narratives (Lynn & Adams, 2002; Yosso, 2005; Yosso, Villalpando, Delgado Bernal, & Solorzano, 2001). Just as theory can explain, CRT provides a means to empower (Yosso, 2005). CRT tries to achieve social justice by revealing how stories differ between Whites and People of Color (Bell, 2003).

The legal scholarship movement (Lynn & Adams, 2002) provided the literature and vocabulary to analyze inequity in education that is a function of race and racism (Dixon & Rousseau, 2005; Lynn & Adams, 2002). CRT was introduced in education in 1994 (Ladson-Billings, 2005) as William Tate and Gloria Ladson-Billings merged CRT and education to reveal inequality in U.S. schools (Lynn & Adams, 2002).
Yosso et al. (2001) noted:

Our working definition of Critical Race Theory in education is to develop a theoretical, conceptual, methodological, and pedagogical strategy that accounts for the role of race and racism in U.S. education and works toward the elimination of racism as part of a larger goal of eliminating other forms of subordination such as gender, class, and sexual orientation. (p. 90)

CRT has also been used to describe the experiences of the “Other,” or individuals who inhabit a liminal space between two worlds (Ladson-Billings & Donnor, 2005; Rollock, 2012). For example, the liminal space of alterity describes how others are excluded due to racial structures that perpetuate privilege for the dominant group (Ladson-Billings & Donnor, 2005; Rollock, 2012). An alternative view of the liminal space of alterity suggests that these alternative perspectives provide a valuable, wider lens that is unavailable to the White majority (Ladson-Billings & Donnor, 2005). One example of the intersection between CRT and education is how White privilege, under the guise of neutrality, supports the notion of “color blind” college admission policies that neglect to acknowledge the K-12 inequity in schooling (Yosso, Parker, Solorzano, & Lynn, 2004). According to Bell (2003), "Color-blindness also provides a way to evade very real issues of discrimination and unequal power, and thus denies the need to actually address the racism that exists in our society" (p. 15). The use of stories in CRT, however, can provide a means by which students of color can provide their own perspective on their educational experiences (Dixon & Rousseau, 2005; Ladson-Billings, 1998).

Inequities attributed to race in education include the better opportunities afforded to students from affluent families (McDonough & Fann, 2007). These inequities have
proven to be pervasive and range from microaggressions, such as lower teacher expectations, to macro- forms of racism, such as school-wide programs that inhibit students from adequately preparing for higher education (Yosso, 2005). Another form of the larger impact of racism is how the perspectives of scholars of color are largely ignored (Yosso, 2005).

**Critical Race Theory and Access**

The use of CRT as a lens to explore access to DE programs is supported by research that indicates SES is the most influential factor in college access, as K-12 educational systems act as a gatekeeper to vital academic preparation and college counseling (McDonough & Fann, 2007). The consequence is a system that perpetuates the status quo as White students earn degrees at a much higher rate than underrepresented students including students of color, low-SES, and first-generation students (McDonough & Fann, 2007; Venezia et al., 2003). This disparity is an example of how education is contradictory in its nature; schools purportedly empower at the same time that they oppress (Yosso, 2005).

Relating back to DE, then, DE policy can either facilitate or impede college access for students from low-SES households, students of color, and first-generation students (Hoffman, 2005; Karp et al., 2004; Karp & Hughes, 2008; Krueger, 2006; McDonough & Fann, 2007; Museus et al., 2007; Smith, 2007). If DE enrollment programs are promoted as a means to address the high college attrition rate of minorities, low-SES students, and first-generation college students, then logic says that these programs should be enrolling a diverse group of students.
Many researchers agree that access to DE courses for a broad range of students should be a priority (Fenske et al., 1997; Harnish & Lynch, 2005; Hoffman, 2003, 2005; Hoffman & Robins, 2005; Hoffman et al., 2009; Johnson & Brophy, 2006; Karp et al., 2004; Karp et al., 2007; Karp & Hughes, 2008;Kirby, 2007; Krueger, 2006; Museus et al., 2007; Plimpton, 2008; Swanson, 2008). Program evaluation has not reflected these beliefs, however. For example, some of the most prominent DE studies have not considered diversity (Eimers & Mullen, 2003; Kim & Bragg, 2008). Other researchers have found a lack of a system in place to track students to determine if DE increased access (Harnish & Lynch, 2005). This divergence between intent and practice is an example of how race and racism impact structures and discourses in higher education (Solorzanos & Yosso, 2002).

The use of CRT as a lens to explore the issue of access to DE programs shifts the focus to ensure underrepresented students are the primary focus. This approach recognizes how racism is inherent in the social structures of the U.S. and challenges inequity in institutions such as education (Lynn & Adams, 2002). According to Lynn and Adams (2002), CRT can be used to assess the impact of race and racism on the educational pipeline from K-college.

**Systems Theory**

DE programs rely on a relationship between secondary and postsecondary secondary educational systems, wherein a system can be defined as a group of interacting components (Laszlo & Krippner, 1998; Thornton et al., 2007). Many researchers collectively refer to the various educational institutions as systems of education (Banathy & Jenlink, 2004; Bess & Dee, 2008; Cohen & Kissier, 2010; Kapt et al., 2012; Kirby,
Systems thinking emphasizes a comprehensive approach that focuses on how each part affects the functioning of the whole (Laszlo & Krippner, 1998; Thornton et al., 2007).

General Systems Theory was developed by Ludwig von Bertalanffy as a means to integrate sciences in the mid-1920s (Laszlo & Krippner, 1998). Boulding (1956) asserted the main objective of General Systems Theory was to be a generalist in communicating with others, noting that specialists will value a multidisciplinary approach if he or she can appreciate the similarities between empirical fields. Boulding expanded the main tenets of Systems Theory to include the humanities and provided the foundation for the application of Systems Theory to social systems (Laszlo & Krippner, 1998). Furthermore, researchers studied the relationships between people and their interactions with societal processes. Human perception studies followed the systems approach because of the interdisciplinary nature of human behavior. For example, researchers argued the perspective of individuals within a system were valuable when using Systems Theory to analyze social systems (Watson & Watson, 2011).

Systems Theory represents a transdisciplinary perspective that recognizes the complexity of the world (Banathy & Jenlink, 2004). This complexity is also reflected in human systems and the social systems they create (Sterman, 1994). Schools are a product of and reflect these social systems (Banathy & Jenlink, 2004; Kapt et al., 2012; Stollar, Poth, Curtis, & Cohen, 2006; Watson & Watson, 2011). Systems Theory is a well-established framework used to analyze and solve problems in schools (King & Frick, 1999; Senge, 2012; Stollar et al., 2006; Thornton et al., 2007). The application of systems thinking to education was heavily influenced by Senge (2006, 2012), who noted that
many unseen forces work to maintain the status quo in education, which are based largely on past practices in schools (Sparks, 2001).

Senge (2012) asserted that the field of education has not been as adept as the private sector in applying systems thinking to improve institutions. Education systems have multiple layers of organization, and operate at different time scales (Kaput et al., 2012). For example, higher education institutions are complex, multilevel, centralized and decentralized, and responsibilities are not clearly delineated (Cohen & Kisker, 2010). In addition, the reciprocity within and between educational systems contributes to this complexity (Stollar et al., 2006). Researchers have only recently explored how a complex systems approach can be applied to education research (Banathy & Jenlink, 2004; Kaput et al., 2012). Senge (2006) asserted that a systems-thinking approach can be used to sift through this complexity, though Systems Theory has been underutilized and sometimes misapplied in education (Banathy & Jenlink, 2004).

A systems perspective enables researchers to explore the interconnected levels of education systems, the mutual interdependence of each of these levels, and boundaries of these systems (Banathy & Jenlink, 2004). In order to study education as a complex system, research is needed at multiple levels and from many different perspectives. As educational programs are evaluated, a holistic approach is needed to ensure change is viewed within the context on the larger organization (Thornton et al., 2007). Researchers can then use this information to build models and frameworks. This large-scale analysis must investigate the organization of schools, how people interact in the system, and how they will move into and out of the system (King & Frick, 1999). While a strength of
higher education research on college transition is that scholarly literature has been broad and interdisciplinary, research on the pathways leading to college has been scarce (Goldrick-Rab et al., 2007). Systems Theory asserts that everything that happens in organizations is linked (Bess & Dee, 2008; Johnson, 2006), which can help to assess how inequity in K-12 schools is linked to inequity in college. Senge (2006) referred to structures that exist in systems that serve as barriers to change, as individuals within systems are unaware of these unseen forces, these patterns repeat themselves. Johnson (2006) took this notion one step further by noting that Systems Theory exposes how patterns of oppression and privilege are inherent in educational systems, and are self-perpetuating. One consequence of inequity in public schools is an undereducated underclass where, “For over a decade, it has been more likely that an African American boy growing up in an American inner city will go to prison than to any form of tertiary education” (Senge, 2012, p. 45).

**Critical Systems Theory**

Critical Systems Theory (CST) is an approach that merges both systems and Critical Theory in order to understand the complexity of organizations as well as address social justice issues (Watson & Watson, 2011). CST was pioneered by Jackson, Ulrich, and Flood (Bausch, 2001). Jackson emphasized enlightening stakeholders about their role in the social world, Ulrich focused on the study of contexts, and Flood addressed critiques of Systems Theory through a critical approach (Bausch, 2001). While each theorist provides a unique perspective, common themes include transparency about the imbalance of power in systems, social awareness by citizens, and emancipation (Bausch, 2001). CST is also referred to as Critical Systems Thinking, and emphasizes the strengths
of both Critical and Systems Theory and their practical application in analyzing complex situations (Flood, 1990; Jackson, 2010; Ulrich, 2003).

As CRT blends Critical Theory with sociological frameworks related to race and racism (Ladson-Billings, 1998; Yosso, 2005), this approach aligns with the integrated nature of DE programs. According to Watson and Watson (2011), “Critical Systems Theory brings a systems-thinking lens to help educational researchers understand the complex nature of educational systems and problems, while incorporating critical perspectives in both methodology and broader research objectives such as emancipation and social justice” (p. 63). A benefit of this blended theory is that it can be used to identify and facilitate collaboration between stakeholders as groups work together to change the system (Watson & Watson, 2011). A core value of CST is its emphasis on ensuring equal participation in systems (Watson & Watson, 2011).

CST can be used to reveal patterns of oppression in education (Watson & Watson, 2011). For example, poor students may be taught by poor quality teachers, therefore these students may not be as prepared for rigorous academic coursework as their privileged peers (McDonough & Fann, 2007). In this manner, schools may reproduce class structures (McDonough & Fann, 2007). Johnson (2006) offered insight into analyzing how educational systems reproduce the status quo: students who are academically unprepared for college level work are blamed for their knowledge gap; thus, the larger issues of inequity in the education systems themselves are ignored. At the same time, students who come from affluent families tend to benefit from enrichment programs because they may be more adept at navigating barriers to access. Johnson (2006) asserted
that the purpose of ideology is to make the status quo (privilege) seem normal and legitimate.

CST may provide a lens to analyze how students access and navigate two systems to help determine if DE programs are, indeed, building bridges between secondary and postsecondary systems or if the burden of adaptability rests on the student. According to McDonough and Fann (2007), it is important to “look at the whole system of education, the educational experience of individuals across this system, and the key indicators and transitions that make up equality and inequality in education” (p. 82). These issues are particularly relevant for underprivileged students, who often face significant barriers to an equitable education (Astin & Osequera, 2004; McDonough & Fann, 2007; Walpole, 2003).

As lack of access to effective counseling (Hanson et al., 2015; Lee, 1987; McDonough & Fann, 2007; McKillip et al., 2012; Woods & Domina, 2014), SES (Plimpton, 2015; Vander-Zanden, 2004), parental education level (Plimpton, 2007, 2008, 2015), rural status (Governor's Task Force, 2012; Maine Community College System, 2007a; Plimpton, 2011), and DE policy (Governor's Task Force, 2012) all serve as barriers to DE program access in Maine, analyzing which students are able to navigate these barriers may provide valuable information to policymakers and program leaders. The MCCS has a unique role in this system. Maine’s community colleges have low graduation rates (26% of students graduate within three years) (National Center for Education Statistics, 2016) and high rates of students enrolled in developmental courses (43.6% of students were labeled as “not college ready”) (Langhauser, 2015). At the same time, community colleges represent the component of the higher education system that

**Conclusion**

Despite the abundance of claims suggesting dual enrollment (DE) programs are successful (Bailey et al., 2002; Governor's Task Force, 2012; Harnish & Lynch, 2005; Hoffman & Robins, 2005; Johnson & Brophy, 2006; Jordan et al., 2006; Karp et al., 2007; Morrison, 2008; Plimpton, 2007, 2008, 2011; Smith, 2007; Swanson, 2008), researchers have acknowledged significant gaps in the literature (Harnish & Lynch, 2005; Reese, 2008; Swanson, 2008). Moreover, researchers critical of DE programs are scarce (Dougan, 2005; Mangan, 2014). Programs and access vary widely, regardless of policy (Michelau, 2006).

Community colleges nationwide, however, have emphasized college access for underrepresented students (Harnish & Lynch, 2005; Hoffman, 2003; McDonough & Fann, 2007). The MCCS is no exception and has provided outreach to high school students through the Early College for ME (Maine Community College System, 2016c), On Course for College (Maine Community College System, 2016d) and other DE programs (Taylor et al., 2015). The Mitchell Institute (Plimpton, 2007, 2008, 2011) has made significant contributions to the literature on DE programs in Maine, but results did not differentiate between DE programs at community colleges and universities (Plimpton, 2008, 2011). While studies included survey responses from high school and student representatives, there was no analysis of these qualitative data to determine themes or
patterns (Plimpton, 2008, 2011). More recent studies have not been conducted, and data that are available are limited and aggregated (Gallagher, 2015).

Although Maine has been recognized for its efforts to enroll underrepresented students (Fisher & Abbott, 2011; Hoffman & Robins, 2005), little is known about students as individuals, the barriers they face to enrolling in courses within the MCCS, student experiences within the variety of DE program structures, and how students navigate between both high school and college courses simultaneously.
CHAPTER 3
METHODS

As a response to the gaps in the literature as well as to determine how student access and experiences differ in DE programs within the MCCS, this mixed-methods study was guided by the following research questions:

Quantitative Research Questions:

1. What is the relationship between demographic factors such as gender, race/ethnicity, socioeconomic status, high school academic record (including GPA and standardized test scores), parental education level, and student’s rural status as defined by the MCCS Rural Initiative (Maine Community College System, 2007b) and student access to dual enrollment programs at Maine’s community colleges?

H01: There is no significant relationship between gender and access to dual enrollment programs at Maine’s community colleges

H02: There is no significant relationship between race/ethnicity and access to dual enrollment programs at Maine’s community colleges

H03: There is no significant relationship between socioeconomic status and access to dual enrollment programs at Maine’s community colleges

H04: There is no significant relationship between high school academic record (including GPA and standardized test scores), and access to dual enrollment programs at Maine’s community colleges

H05: There is no significant relationship between parental education level and access to dual enrollment programs at Maine’s community colleges
H\textsubscript{06}: There is no significant relationship between students’ rural status as defined by the MCCS Rural Initiative (Maine Community College System, 2007b) and access to dual enrollment programs at Maine’s community colleges.

2. What is the relationship between the structure of Maine’s community college dual enrollment programs (purpose, location, instructor, and program configuration) and students’ learning experiences (course rigor, student-faculty relationship, and college aspirations, DE course grade) as measured by a student survey?

H\textsubscript{01}: There is no significant relationship between the structure of Maine’s community college dual enrollment programs and course rigor.

H\textsubscript{02}: There is no significant relationship between the structure of Maine’s community college dual enrollment programs and the student-faculty relationship.

H\textsubscript{03}: There is no significant relationship between the structure of Maine’s community college dual enrollment programs and student college aspirations.

H\textsubscript{04}: There is no significant relationship between the structure of Maine’s community college dual enrollment programs and student grade in their DE course(s).
Qualitative Research Question:

1. What are the perceptions of instructors and administrators of DE community college programs in ME relative to student access and learning experiences?

Mixed Methods Research Question:

1. How do the perceptions of instructors and administrators of DE CC programs in ME relative to student access and learning experiences compare with student perceptions?

Methodology

In order to understand the structure of DE programs in Maine and if these facilitate or impede student access, I conducted a study utilizing mixed methods. A mixed methods design is one in which both qualitative and quantitative methods are used in one project (Denzin & Lincoln, 1994; Morse, 2003). According to Onwuegbuzie and Leech (2006), mixed methods studies require both quantitative, qualitative, and mixed methods questions within the same inquiry. Furthermore, quantitative and qualitative research questions are most compatible when questions are open-ended and the goal is to describe a particular context. As such, the research questions were addressed by quantitative methods, qualitative methods, and mixed methods. Each approach is described as a strand, and the integration of the qualitative and quantitative strands has the potential to provide high quality research outcomes (Johnson, Onwuegbuzie, & Turner, 2007).

In mixed methods research, the core, or base project, serves as the primary approach and additional data are used to enhance the findings (Morse, 2003). Mixed methods researchers may choose how data are weighted (Creswell & Plano Clark, 2007).
As the primary purpose of my study was to describe, an inductive approach was used; thus, the core methods were the qualitative strand (Merriam, 2002; Morse, 2003). To denote emphasis placed on each database, capital letters are used to represent greater emphasis, while lower case letters represent less emphasis (Creswell, 2014). A plus sign indicates that both quantitative and qualitative data will be collected at the same time (Creswell, 2014), therefore the notation for this study was QUAL+quan. By collecting quantitative and qualitative data simultaneously, the strengths of both qualitative and quantitative research offset the weaknesses of each to provide a more comprehensive understanding of the problem (Johnson & Turner, 2003; McMillan & Schumacher, 2006; Morse, 2003; Onwuegbuzie & Teddlie, 2003). Furthermore, using supplemental research strategies provided a better understanding of the research questions to overcome the limitations of each method (Creswell, 2014; Creswell & Plano Clark, 2007).

**Mixed Method Design**

While there are many different types of mixed methods approaches, triangulation design is the most common (Creswell & Plano Clark, 2007). This design is used when the researcher wants to expand, validate, or compare and contrast quantitative results with qualitative findings. As quantitative and qualitative data are collected simultaneously, analyzed individually, then converged during the interpretation phase of the study, this approach has also been referred to as concurrent triangulation design (Creswell & Plano Clark, 2007). Specifically, I used a variant of the triangulation design called "multilevel research." In multilevel research, different methods are used to address different levels within a system to provide an overall analysis (Creswell & Plano Clark, 2007).
Multilevel sampling techniques are commonly used in studying educational settings in which units of analysis are nested within each other (Teddlie & Yu, 2007). The nested units of analysis in this study included student data and the perceptions of adults involved in DE programs. The quantitative strand included a student survey and enrollment data. A quantitative survey of DE students (high school students and graduates) who took courses at Maine’s community colleges was used to determine how DE program structure impacted their experiences in their course(s). This survey was also used to collect some demographic data to explore which students were able to access DE programs within MCCS. Additional insights from a college graduate were also included as a post hoc unit of analysis. Through an emergent process, I was also able to identify a key informant within the MCCS who assisted in seeking and obtaining data on high school student enrollment, which supplemented student survey data. Due to the sensitivity of some of the data provided, the key informant’s identity was maintained confidential.

The qualitative strand included interviews of DE program leaders and DE instructors at both the secondary and postsecondary levels. This strand was used to explore how program structure facilitated or impeded access for underrepresented students. By comparing the results of both strands, I provide a thorough overview of DE programs within MCCS. This approach is represented in Figure 1.
Qualitative Research Strand

Qualitative research is a set of practices by which an observer transforms the world by making it visible through a series of representations (Denzin & Lincoln, 2011). Phenomenology informs qualitative research by emphasizing how individuals interpret experiences (Merriam, 2002). Qualitative researchers explore how individuals make meaning of things in their natural settings (Denzin & Lincoln, 2011; Merriam, 2002). Researchers use multiple interpretive practices are used to gather data (Denzin & Lincoln, 2011). The goal is to create a bricolage, or collection of representations to depict situations (Denzin & Lincoln, 2011).

Key characteristics of qualitative research include the goal of understanding how individuals construct meaning based on their experiences, the researcher as the primary instrument, and a descriptive product (Merriam, 2002). According to Denzin and Lincoln (1994), “The interpretive bricoleur understands that research is an interactive process shaped by one’s personal history, biography, gender, social class, race, and ethnicity and those of the people in the setting.” (p. 5). The product of qualitative research is
descriptive because the form of representations can vary; examples include field notes, interviews, photographs, and memos (Denzin & Lincoln, 2011).

In order to better understand how the structure of DE programs at Maine’s community colleges impacts student access and experiences, I conducted qualitative interviews of DE program leaders. These leaders included individuals who were directly involved in DE policymaking, program planning, recruiting students, and evaluation of DE programs. I also interviewed high school and community college instructors and guidance counselors who worked directly with DE students.

**Pilot Study: Qualitative**

In preparation for this research and to better understand DE programs in Maine, I conducted pilot studies in the spring of 2012 and again in the spring of 2014. In these pilot studies, I contacted several individuals who are involved with implementing and researching DE programs within the State of Maine. I spoke with program leaders within the University of Maine System and Maine Community College System (MCCS), a representative from the Maine Department of Education, a guidance counselor, and a researcher. I used insights from these informal interviews, in part, to refine the focus of my study. For example, it was evident that DE programs within the entire state of Maine were dissimilar and beyond the scope of this research study. The MCCS, with a focus on access, was a better fit for my conceptual framework.

I also used these interviews to help determine which participants would best represent multiple perspectives and provide the thick, rich descriptions characteristic of qualitative research (Creswell, 2014). Some political themes emerged from these early pilot interviews. It soon became apparent that while DE policy must be a key component
of my research project, politics were beyond the intended scope and could detract from the research questions. Since my focus was student access and experiences, I decided to include only participants who were directly involved in DE programs within either the MCCS or at the high school level.

The initial pilot interviews were also useful in developing the interview protocol. For example, I initially asked very specific and detailed questions and thus received narrowly limited responses. I modified my approach and discovered that leading with a general question such as asking participants to describe the individual programs they were involved in, resulted in a detailed response. Participants were eager to discuss programs and student demographics specific to their region. As such, I developed interview questions for this study that gave participants an opportunity to thoroughly describe the specific details of their programs and focus on areas that they felt were most poignant. Participants in the pilot interviews also relayed stories about challenges and successes. These stories ranged from small-scale anecdotes within the high school or college to system-wide challenges and successes. As such the interview questions for this project were adjusted to tease out responses at the individual program level as well as within the context of the MCCS. It was also evident in the pilot interviews that the opportunity for participants to share their general perceptions resulted in aspects of DE programs and policies I had not considered, so I added an open-ended question to the interview protocol.

**Sampling Techniques: Qualitative**

I utilized both purposeful and snowball sampling techniques to contact potential participants. Purposeful sampling is helpful when seeking information-rich key
informants (McMillan & Schumacher, 2006; Teddlie & Yu, 2007), as well as to seek representative and different types of cases to achieve comparability (Teddlie & Yu, 2007). In addition, snowball sampling can be used when researchers rely on participant referrals to find individuals with particular attributes and insider knowledge (McMillan & Schumacher, 2006). I used high school and community college websites to search for DE program leaders, in addition to contacting individuals I knew through my career experience as a high school teacher, an education professional, and a graduate student at the University of Maine.

**Representative Sample.**

As my goal was to see how program structure impacts access for underrepresented students, sampling methods were designed to ensure that various DE programs structures were represented including programs that varied by their purpose, course location, instructor, and program configuration (Barnett & Stamm, 2010; Karp & Jeong, 2008). Program configuration reflects individual courses (Barnett & Stamm, 2010; Hughes, 2010; Karp et al., 2004; Plucker et al., 2006) to intensive DE programs emphasizing student support (Barnett & Stamm, 2010; Berger et al., 2013; Plucker et al., 2006; Pour, 2016). In seeking DE interview participants, I sought individuals who were leaders and instructors representing the wide variety of DE program structures offered by the MCCS.

The historic, significant economic divide between affluent, urban Southern Maine counties and rural Northern Maine communities (Long, 2012) was also taken into consideration in the selection of participants to ensure geographic diversity. At the same time, I utilized the MCCS Rural Initiative Rural Definition (Maine Community College
System, 2007b) to seek participants from both rural and urban areas. The Maine Department of Education, and the Maine Department of Labor determined that communities would not be considered rural if they have a population of over 10,000, or are contiguous to areas with populations over 10,000 (Maine Community College System, 2007b). All other communities are considered rural (Appendix A). The MCCS rural definition (Maine Community College System, 2007b) reflects US census reports, which identifies Maine as the most rural state in 2010 despite the growth of urban centers (Wickenheiser, 2012). While the purpose of qualitative research is not to generalize (McMillan & Schumacher, 2006; Merriam, 2002), I nonetheless sought participants who represented students throughout Maine.

**Participants.**

Sample sizes in qualitative studies vary widely (Creswell, 2014; McMillan & Schumacher, 2006). However, Creswell (2014) noted that while there are no specific guidelines for sample sizes, phenomenology typically ranges from three to ten participants. As such, I interviewed 10 participants. In Table 2, I present the pseudonyms of the participants as well as the location of their institution and the demographics of the student population served by their institution. Pseudonyms and general titles were used to ensure the confidentiality of participants. To ensure no specific community college within the MCCS could be identified, the location of the institution is identified only as rural or urban based on the MCCS definition (Maine Community College System, 2007b).

Regardless of the location of the institution, 92% of Maine’s population live within 25 miles of a community college campus or satellite site (Maine Community College System, 2007a). Most of the community colleges represented serve students...
from both urban and rural areas. In addition, colleges are identified by letter in the table below to show that in some cases, the perceptions of high school guidance counselors, instructors, and community college leaders from the same institution are represented. In this way, participants from multiple levels of one institution are represented as an additional form of multilevel research (Creswell & Plano Clark, 2007). However, themes were not disaggregated by individual institutions as the goal was to compare different programs and program types, not different institutions.

Table 2. Dual Enrollment Interview Participants

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Title</th>
<th>Location of Institution (By MCCS definition)</th>
<th>Demographics of Student Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sue</td>
<td>CC Adjunct/ HS teacher (retired)</td>
<td>Rural, College A</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Michelle</td>
<td>HS Guidance Counselor</td>
<td>Urban, College A</td>
<td>Urban (prior experience with Rural)</td>
</tr>
<tr>
<td>April</td>
<td>CC DE Coordinator</td>
<td>Urban, College A</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Deanna</td>
<td>DE Instructor/HS Teacher</td>
<td>Urban, College B</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Nancy</td>
<td>CC Leader</td>
<td>Urban, College B &amp; many colleges</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Jen</td>
<td>HS Guidance Counselor</td>
<td>Urban, College B</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Brad</td>
<td>CC Adjunct/HS Teacher</td>
<td>Urban, College B</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Beth</td>
<td>CC Faculty/DE Coordinator</td>
<td>Rural, College C</td>
<td>Rural</td>
</tr>
<tr>
<td>Selena</td>
<td>CC DE Coordinator</td>
<td>Urban, College D</td>
<td>Urban &amp; Rural</td>
</tr>
<tr>
<td>Lynn</td>
<td>CC DE Coordinator</td>
<td>Urban, Many Colleges</td>
<td>Urban &amp; Rural</td>
</tr>
</tbody>
</table>

Interviewing is frequently utilized as it is a powerful tool with many forms, particularly when the goal of research is to understand (Fontana & Frey, 1994). Key informant interviews are a specialized form of in-depth interviews used when participants
have specialized knowledge (McMillan & Schumacher, 2006). The goal of an interview is to provide a means by which the informant can describe the social world from his or her perspective, on their own conditions (Boeije, 2010). As my research was inductive, I conducted semi-structured interviews to allow insights to emerge throughout the dialogue (Glesne, 2011). Specifically, I conducted topical interviews with individuals directly involved with developing, leading, and teaching DE courses.

Each participant received an email with an invitation to participate (see Appendix B). Participants who responded were provided with consent information approved by the IRB (see Appendix C), which was also reviewed before starting the interview. Participants were offered the opportunity to review the interview script (see Appendix D) in advance. All interview questions in the script were aligned with the research questions and theoretical framework (see Appendix E). All interviews were conducted between January 2015 and January 2016 via Skype or telephone and lasted between approximately 40-80 minutes. With approval from the participants, I recorded the interviews and transcribed them verbatim.

**Analysis: Qualitative**

Qualitative data analysis involves segmenting data into categories and then reassembling these parts to meaning of the data from a theoretical perspective (Boeije, 2010; Leech & Onwuegbuzie, 2007). Constant comparison is a common approach to qualitative analysis, in which the dataset is divided into smaller meaningful parts, which are identified as codes (Leech & Onwuegbuzie, 2007). Codes can be identified deductively (prior to analysis), and inductively (during analysis) (Leech & Onwuegbuzie, 2007). Using the analytic approach of constant comparison, after analysis of each
interview codes were reviewed to see if new codes were needed or if categories needed revision (Boeije, 2010). All outcomes were considered to be interim results and were used to compare to the next source of data.

**Coding.**

The theoretical framework of CST, which is derived from both systems and Critical Theory (Watson & Watson, 2011), guided the analysis process of the qualitative portion of the study. As such, a priori codes were included in the open coding process. A priori codes, (which are also referred to by some researchers as themes) come from the theoretical understanding of the phenomenon being studied, professional literature, and personal experiences (Bernard & Ryan, 2010). As such, a priori codes included: barriers to DE access, as K-12 systems of education act as gatekeepers to academic preparation and college counseling (McDonough & Fann, 2007; Venezia et al., 2003), and a core value of CST is equal participation in systems (Watson & Watson, 2011); cultural attitudes about college, as traditional belief systems are accepted and perpetuated as the norm (Glesne, 2011; Harney, 2004; Hebert & Beardsley, 2002; Palaich et al., 2006; Senge, 2012); and unintended consequences, as intent and practice become disparate (Johnson & Brophy, 2006; Solorzano & Yosso, 2002). As educational systems are interconnected, interdependent, and bounded (Banathy & Jenlink, 2004), I also used the a priori codes of systems positive and systems negative to explore how secondary educational systems in collaboration with the MCCS serve as gateways and gatekeepers to underprivileged students as they access and navigate DE programs.

While a priori codes help guide analysis, codes must be also derived empirically and induced from data collected, as it is impossible to predict all themes before data
analysis (Bernard & Ryan, 2010). As such, inductive codes were an integral part of the open coding process. Some major inductive codes included niche, to refer to the specific student population DE programs served; autonomy, to refer to the independence of individual schools and programs; and remediation, to describe any situation in which high schools students were not prepared for college level work.

**Spiral of Analysis.**

Specifically, Boeije (2010) described a spiral of analysis based on the constant comparative method. This approach reflects how data collection and analysis are alternated and the process is repeated as necessary: (a) open coding to generate a list of codes; (b) axial coding to describe and list categories; (c) selective coding to reassemble and link categories, and (d) development of a conceptual model. Throughout each step of this iterative process, the goal is data saturation, or when newly collected data do not offer new insights (Boeije, 2010).

In open coding, researchers summarize text using a phrase, which encourages organization of the data as well as a thematic approach as the text is broken down into discrete pieces and a list of preliminary codes is generated (Boeije, 2010). Open coding was completed using the online application Dedoose (Dedoose Version 6.1.18, 2015). Dedoose is a web-based software program designed specifically to manage qualitative and mixed methods research projects (Dedoose Version 6.1.18, 2015). Interview transcripts were uploaded to a secure account within the program, and chunks of the text from each interview were assigned to the a priori and inductive codes as themes emerged.

In axial coding, the data are focused and reorganized by establishing which codes are more significant. A preliminary hierarchy is established as sub-codes are assigned to
the main codes and patterns emerge (Boeije, 2010). After preliminary coding of all interviews during axial coding, the data were exported to a document and reassembled by each individual code assigned. At this stage of analysis, some chunks of data appeared within multiple codes, some codes were condensed as sub-categories, and other codes were deemed minor or beyond the scope of this study. Significant codes were uploaded into Dedoose and text within each code was analyzed again as major patterns and recurring themes emerged.

In selective coding, the categories are connected to provide a representation of the phenomena being studied (Boeije, 2010). The data within each major category were summarized and findings were generated using a conceptual map as a working document to represent how each finding had its own significance, yet was also connected to other findings in the study. This conceptual map was used to create the organizational structure of the qualitative findings chapter. In this final phase of qualitative data analysis, themes and explanations were synthesized as data were reassembled (Boeije, 2010).

As the spiral of analysis requires the researcher to review each new case within the context of prior analysis (Boeije, 2010), I used the lens of CST in the development and revision of codes throughout the process. Appendix E includes an analysis of qualitative interview questions: the relationship between interview questions to the quantitative portion of the study, the theoretical framework guiding each question, and a priori codes and inductive codes when relevant.

Quantitative Research Strand

Quantitative research is used when the researcher’s goal is to explore relationships between variables (Denzin & Lincoln, 1994; McMillan & Schumacher,
While qualitative methods were dominant in this mixed-methods study, quantitative methods were used to provide multiple perspectives and a deeper understanding of the phenomenon (Johnson et al., 2007). In order to ascertain how student experiences in DE programs within the MCCS varied based on program structure, non-experimental quantitative research methods were utilized. Non-experimental research designs are used to describe situations that have occurred and to study the relationships between factors (McMillan & Schumacher, 2006). Specifically, comparative research designs are used when the goal is to compare two or more groups within the phenomena being studied (McMillan & Schumacher, 2006). In this study, I compared the experiences of students enrolled in DE courses on a college campus or satellite site outside of the school day (traditional DE) and students in DE courses in high school during the school day (concurrent enrollment).

**Pilot Studies: Quantitative**

In the fall of 2010, I conducted two student interviews as part of a pilot study to develop my skills as a researcher. While these interviews were valuable and insightful, I realized that qualitative methods to represent the student voice would severely limit my sample size. In order to determine the relationship between DE program structure, student access, and experiences, it was necessary to reach a larger population of students. As such, I recognized that quantitative methods were more suitable and I decided to conduct a pilot survey.

I drafted sample research questions for a survey of DE students and conducted a second pilot study in January 2014. This pilot study took place during a DE course at a high school during the school day, and the survey was administered in paper-based
format. I observed students as they completed the survey. It took approximately 20 minutes to complete. Afterwards, I asked some students to reflect on the survey administration and questions. These students indicated that the survey questions were easy to understand, the questions were relevant to their experiences, and the time to complete the survey was manageable. Students stated that they would prefer an electronic version of the survey, as the high school they attended provided laptops for all students.

The pilot survey consisted of only close-ended responses. However, when I read student responses to the survey I realized that the information I obtained when using this approach yielded minimal, vague information compared to the rich data I had obtained from students when conducting pilot interviews. I modified the final student survey for this research project to include some open-ended responses based on questions I had asked during the interviews. In addition, the pilot study was conducted in a controlled environment in which I had background information about student demographics and the partner secondary institution, so I added additional questions to capture this information for the final student survey.

**Research Instrument: Quantitative**

The primary instrument in the quantitative strand of this study was a student survey (see Appendix F). Per McMillan and Schumacher (2006), surveys may be classified as both a type of research design as well as a data collection strategy. Surveys are useful in describing attitudes, beliefs, and opinions. The purpose of surveys is to make generalizations about a population based on the sample (Creswell, 2014). The goal of the survey in this study was to explore which students are enrolled in DE programs within the MCCS and how their experiences varied based on program structure.
Researchers can include both open- and closed-ended questions on a survey (Johnson & Turner, 2003). Open-ended questions are useful when researchers want to capture characteristic differences between respondents (McMillan & Schumacher, 2006). As such, survey questions in my study related to student experiences and their perceptions were open-ended. Selected response questions, or close-ended format is used to collect demographic information and categorical data (McMillan & Schumacher, 2006).

The survey questions were guided by the pilot studies and the scholarly literature. All questions were aligned with the research questions and theoretical framework (see Appendix G). For example, state policies in the form of minimum eligibility requirements can serve as barriers to DE access and include: GPA, class rank, standardized test scores, application form, course prerequisites, and letters of recommendation (Michelau, 2006). In my survey, selected response questions were used to ascertain if students faced obstacles to enrollment, which barriers they faced, and the structure of their DE course(s).

Additional demographic data were also collected in order to determine which students were able to access DE courses. As DE policy can impede college access for students from low SES households, students of color, and first-generation students (Hoffman, 2005; Karp et al., 2004; Karp & Hughes, 2008; Krueger, 2006; McDonough & Fann, 2007; Museus et al., 2007; Smith, 2007), variables that measure these student characteristics were included on the survey, as well as gender, race/ethnicity, and SES (Karp & Jeong, 2008; Lerner & Brand, 2006; Museus et al., 2007; Swanson, 2008), high school academic record (including GPA and standardized test scores), and parental education level (An, 2013a; Karp & Jeong, 2008; Swanson, 2008).
My goal was also to use the survey to determine if the student participants were attending a rural or urban high school based on the name of their high school and its geographic location. The intent was to use this information to determine if a student’s location within an area identified as rural by the MCCS Rural Initiative (Maine Community College System, 2007b). For example, transportation has been identified as a significant barrier to DE access for Maine students (Governor's Task Force, 2012; Maine Community College System, 2007a; Plimpton, 2011). Furthermore, students from rural areas tend to be seen as disadvantaged (Johnson & Brophy, 2006; Palaich et al., 2006) when rural students are least likely to attend college (McDonough & Fann, 2007).

**Sampling Techniques: Quantitative**

I used purposeful sampling techniques to focus on a specific population, that of students enrolled in DE programs in Maine’s Community Colleges. Purposeful sampling in quantitative research is a form of nonprobability sampling employed when the researcher wants to study a population that represents certain characteristics (McMillan & Schumacher, 2006). While purposeful sampling in qualitative research emphasizes seeking information-rich participants, in quantitative studies the researcher relies on his or her judgment to select representative samples of participants who fit certain parameters (McMillan & Schumacher, 2006; Teddlie & Yu, 2007). In this study, I sought students who had completed at least eight weeks of one DE course of any type at any Maine Community College, regardless of whether students earned credit in the course. DE has been previously defined as any program in which high school students enroll in college courses (Andrews, 2004; Johnson & Brophy, 2006; Jordan et al., 2006; Karp et al., 2007; Welsh et al., 2005). As such, students were not eligible to participate if they enrolled only
in 4-year DE courses or Advanced Placement or International Baccalaureate courses, because these are exam-based programs and are not dependent on a relationship between a secondary and postsecondary institution (Waits et al., 2005). To ensure student responses were focused only on courses within the MCCS, students were asked to identify the specific college each time they described their DE courses(s).

**Survey Participants.**

Researchers often choose a sample size based on a fraction of the population, such as 10% of the target population (Creswell, 2014); however, in this study, a key informant within the MCCS (personal communication, March 14, 2014) explained that the exact number of the DE population was unknown. Furthermore, researchers conducting mixed methods research sometimes compromise between the requirements of quantitative and qualitative samples, which Teddlie and Yu (2007) referred to as “the representativeness/saturation trade-off” (p. 87). As such, more emphasis was placed on the saturation of the qualitative samples and less emphasis was placed on the representativeness of the quantitative sample.

First, I asked interview participants to help with survey distribution. In addition, I contacted 84 high school administrators, teachers, guidance counselors, DE instructors, and other DE program leaders (who were not participants in my interviews) throughout the State of Maine to assist with disseminating the survey link and encouraging participation between January of 2015 and March of 2016. The primary contact tool was via email (see Appendix H). I also contacted individuals who were identified as key informants by telephone. As DE program structure varies widely, I worked with individuals to determine which approach for survey distribution would best fit each
student population. For example, one participant, an adjunct professor, agreed to conduct a paper survey in class, which resulted in ten out of ten surveys completed. In another instance, a high school guidance counselor agreed to mail surveys and a self-addressed stamped envelope to eligible students. Forty surveys were mailed, two students responded. Another guidance counselor requested 20 paper surveys, but no responses were received. An informed consent form was embedded in the surveys and was provided to students for both the online and paper based surveys (see Appendix I).

In December of 2015, I recognized that the student voice might not be adequately reflected in my study due to a low response rate. With the help of leaders within the Maine Community College System, I revised my proposed methods. I also consulted with my advisor and obtained permission from the IRB to seek additional data sources. To improve the survey response rate and to seek additional information about the impact of DE programs on students’ experiences when they matriculate, high school graduates who were 18 years of age or older at the time of the study were then recruited to participate in the original survey. Interview participants, including community college instructors and leaders, asked high school graduates for permission to provide me with their email address. Email addresses of those who consented were shared with me. I also contacted three high school graduates whom I knew through my professional relationships and invited them to participate. I also used snowball sampling by asking those high school graduates to forward the survey to eligible individuals. A copy of the email used to recruit participants can be found in Appendix H. As a result of these additional recruitment efforts, an additional four students completed the survey.
Table 3 shows the variety of efforts made to reach potential student participants and the response from each attempt. An overall percent response rate for each effort was not calculated since there was no way to determine how many emails or paper copies of surveys provided to adults were actually delivered to individual students.

Table 3. Student Survey Responses

<table>
<thead>
<tr>
<th>Solicitation Effort</th>
<th>Quantity</th>
<th>Number of Student Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emails to guidance counselors, principals, DE leaders, and instructors</td>
<td>80</td>
<td>27</td>
</tr>
<tr>
<td>Paper copies of surveys provided to guidance counselors upon request</td>
<td>60</td>
<td>2</td>
</tr>
<tr>
<td>Paper copies of surveys provided per request to DE instructor upon request</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Emails to DE instructors and leaders to target high school graduates</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Email to high school graduates I knew personally and professionally</td>
<td>2</td>
<td>3 (due to snowball sampling)</td>
</tr>
</tbody>
</table>

**Post Hoc Supplementary Data Collection.**

High school graduates who were 18 years of age or older at the time of the study were given the option to provide their contact information in the survey during this post hoc data collection effort. I asked three participants who provided their contact information for permission to ask follow-up questions that were specific to their survey responses (Appendix J). One high school graduate agreed to answer these additional questions, but preferred to respond during an informal, in-person interview. I used detailed note-taking to record his responses, which provided insights that were beyond the original intent of the research questions. Although not part of the original research plan, this key informant provided valuable supplementary data. As such, the key informant was assigned the pseudonym of Bart in order to distinguish his perceptions from the other survey participants during the quantitative and mixed-methods analysis.
With additional high school recruitment efforts and high school graduate surveys, a total of 43 student surveys were completed. However, upon further review, it was evident by the name of the college listed by the students that four students participated in DE courses only at a four-year institution. These responses were removed from further analysis. As such, thirty-five students who had taken at least one DE course within the MCCS with an additional four high school graduates who had taken a DE course within the MCCS while they were in high school yielded a total of 39 DE student responses. Twelve participants completed a paper-based survey and 27 participants completed an identical survey online.

**Secondary Data.**

In an additional effort to complement student surveys, I contacted leaders within the MCCS and requested dual enrollment data as a form of secondary data. Secondary data includes data collected by another organization, and can be beneficial because the data may be high quality and provides large samples (McMillan & Schumacher, 2006). A key informant within the MCCS (personal communication, March 14th, 2016) provided a supplemental dataset in order to gain insights into students’ rural status and access. These raw data included financial information on money expended to community colleges for the On Course for College DE program, concurrent enrollment data (students who take community college courses at a high school), and zip codes of DE high school students by course registration.

Specifically, this dataset included zip codes of students enrolled in concurrent enrollment courses (courses located on a high school campus with a high school teacher during the school day) for the school years 2013-2014, 2014-2015, and the fall of 2015.
The raw data included year, college name, and zip code. I used Microsoft Excel to transform these zip codes by assigning each student to his or her specific town and county. Then, the students’ town was used to determine whether they were from a rural or an urban area, based on the definition from the Rural Initiative (Maine Community College System, 2007b). Some zip codes indicated enrolled students were from out-of-state. According to the MCCS key informant, out-of-state students do not receive state funds and are likely part of programs at high schools and technical centers through New England. These include programs offered by Central Maine Community College (2016). As such, data for out-of-state students were excluded from further analysis.

**Analysis: Survey**

My analytical methods for the quantitative strand of the study included completing a bivariate correlation study (Coladarci, Cobb, Minium, & Clarke, 2008) to determine the impact of demographic factors on access to DE courses. However, once the enrollment data from MCCS became available it was apparent that the use of bivariate statistics would not be feasible due to potential issues with statistical conclusion validity. According to McMillan and Schumacher (2006), statistical conclusion validity is the extent to which the statistics methods utilized accurately portray the purported relationship. Factors that may have impacted bivariate analysis include low statistical power and restriction of range, which may result from a small sample size (Coladarci et al., 2008). For example, 2,490 students participated in DE programs in the 2014-2015 school year, while 2,181 participated in the fall of 2016. As such, the survey respondents represented less than 2% of the sample population.
Nonetheless, the quantitative strand did represent various student perspectives and DE program types. Students indicated that they were enrolled in four types of courses: college course on a high school campus during the school day, college course on a high school or satellite campus outside of the school day, college course on a college campus, and hybrid (both online and on-campus). However, upon further review, it became clear from student responses to the open-ended questions that those that selected the hybrid courses were actually courses located on the college campus, with a minimal on-line component. For example, one student described how the professor shared personal stories about topics, which made the class interesting, while another student explained that the class was two and a half hours long and assignments were passed in on-line. Based on these responses, I determined that the hybrid courses were not significantly different from the on campus courses, and these data were added to the student responses for courses located on campus and analyzed as such.

Univariate descriptive statistics and procedures were utilized in order to organize and summarize the quantitative data (Coladarci et al., 2008). Because two of the survey questions were open-ended, and were designed to give students an opportunity to explain their answer to a prior question, analysis of these three questions was approached qualitatively within the context of the prior response. These data were first sorted by course structure, including location and whether the students in the course were high school students or high school and matriculated students. Then the data were uploaded to a web-based data analysis tool Dedoose Version 6.1.18 (2015) and analyzed using the constant comparative method to see if student perceptions about their experiences varied by course structure. Spelling errors in student responses were edited for clarity.
According to (Glesne, 2011), qualitative researchers explore how structures shape experiences. Patterns and themes that emerged from the open-ended responses from high school students were used to address the research questions, though the sample sizes did not allow for support or rejection of the null-hypotheses. In this study, students within different DE program structures reflected on their DE experiences. All additional comments and responses from high school graduates were included only in the mixed-methods analysis.

Because of significant differences in properties of each quantitative variable recorded on the survey, each variable was initially considered independently. Another factor that increased the complexity of analysis was that students were asked to list which colleges they attended for their DE course. As such, I was able to discern that 11 of the 39 students responded that one of their courses was from a four-year institution. These responses were color-coded during data analysis to focus only on the student perspective that referred only to their experience within the MCCS.

The choice of descriptive statistics used to analyze each data point was based on which approach would best represent the data (Coladarci et al., 2008). As a result, quantitative data were represented by frequency distributions, relative frequency distributions, and qualitative descriptions as appropriate to each variable. For example, some variables resulted in yes or no responses and are summarized by percentage, while others, such as GPA, were summarized by frequency distributions.

After quantitative data were organized and summarized, I reviewed all of the data again within the context of each of the two quantitative research questions. Only data most relevant to the research questions were included in this stage of the analysis. For
some research questions, the combination of student survey data, secondary data, and open-ended responses were sufficient to reach a conclusion. For other research questions there were not enough data to reach a conclusion with confidence; these circumstances were discussed in the findings chapter. In some instances the quantitative data were enhanced by the qualitative data from interviews and are discussed in the mixed-methods analysis section. Sample sizes were not large enough to support nor reject the null hypotheses for each of the quantitative research questions.

**Ethical Considerations**

I followed protocols as established by the University of Maine’s Institutional Review Board and outlined in my original IRB application. In addition, when faced with a dearth of quantitative data, I consulted with my advisor and obtained IRB approval for a revised application, which included the collection of additional data as a post hoc effort to supplement student surveys. This phase included surveys from high school graduates who participated in DE courses, an informal interview of a college graduate, as well as student enrollment data. I also obtained permission from leaders within the MCCS to conduct interviews of DE leaders and obtain the supplementary student enrollment data from key informants.

For the quantitative surveys of high school DE students, data were anonymous. For the quantitative surveys of high school graduates who provided contact information, the data were confidential, wherein I have disguised any identifying information. One key informant, a college graduate, provided his contact information and responded to follow up questions as part of a post-hoc data collection effort as described in the quantitative
strand. For this participant, I created a pseudonym (Bart) and his survey and follow-up question responses remain confidential.

The student survey included a research statement so that students were aware of the purpose of the research, risks, and benefits before they completed the survey (Appendix I), and completion of the survey implied consent. Students were informed that they could skip any survey question they did not want to answer. As survey participants may have included minors under the age of 18, special care was taken to ensure ethical conduct of research and all protocols were followed as outlined by the approved IRB application. As I asked DE coordinators, DE instructors, and guidance counselors to help distribute the survey, a risk to participants was that they may have felt coerced to participate. Eighteen student survey participants attended high schools affiliated with colleges that were also represented by interview participants. As such, individual students were only identified by the location of their town in an urban or rural location as defined by the MCCS Rural Initiative (Maine Community College System, 2007b). This was done to protect the confidentiality of interview participants as well as ensuring that no specific college within the MCCS was identified. Supplementary data on student enrollment was provided by a key informant within the MCCS as part of the quantitative strand. These data did not include any student names. Students were identified by the zip code of their home address and the name of the community college they attended.

Participants in the qualitative strand were provided with an informed consent form and participation implied consent (Appendix C). To ensure confidentiality, audio recordings of the interviews were destroyed after data was transcribed. I created a pseudonym for all interview participants and used the pseudonym on transcripts and
findings. The key linking the names to the dataset were typed and were stored on a password protected computer and will be deleted when my dissertation is complete. Transcripts (with pseudonyms only) were stored on my computer, which is also password protected. The only individuals that had access to transcripts were myself and my advisor, Dr. Susan K. Gardner. Identifying references were removed from any data to ensure privacy.

Regardless of these efforts to ensure confidentiality, the small sample size served as a risk to participants. For example, since I am narrowly focusing on DE programs within the MCCS, the names of some program leaders are available on MCCS websites. Participants were notified of these risks through the informed consent process. In addition, in the findings I only report themes and removed any information linking informants to data, specific college, or geographic location other than urban or rural.

**Mixed Methods Data Analysis**

In this study, the mixed methods research question was: How do the perceptions of instructors and administrators of DE CC programs in ME related to student access and learning experiences compare with student perceptions?

Mixed methods data analysis varies based on mixed methods design (Creswell & Plano Clark, 2007; Onwuegbuzie & Leech, 2006). I utilized concurrent triangulation design, in which researchers use quantitative methods to analyze the quantitative data and qualitative methods to analyze the qualitative data (Creswell & Plano Clark, 2007). These steps are also referred to as data reduction and data display (Onwuegbuzie & Teddlie, 2003). After quantitative and qualitative data were analyzed separately, I merged both datasets to develop a complete picture (Creswell & Plano Clark, 2007). In this method,
data may be merged through transformation, in which qualitative data are converted into numerical codes or quantitative data are converted into narrative data (Creswell & Plano Clark, 2007; Onwuegbuzie & Leech, 2006). An alternative approach to data transformation is to compare data through discussion (Creswell & Plano Clark, 2007). In this stage the researcher explores how the quantitative and qualitative data converge, confirm, or contradict through data comparison (Creswell & Plano Clark, 2007; Onwuegbuzie & Leech, 2006). I used discussion to compare results because my primary approach is inductive and my goal was to describe. Furthermore, because I explored multiple levels of many systems by surveying students, analyzing enrollment data, and interviewing DE program leaders and researchers, merging data via transformation would not have appropriately represented these different perspectives. In the final stage, data integration, the data are integrated to present a coherent picture of the phenomena (Onwuegbuzie & Leech, 2006). I used Dedoose Version 6.1.18 (2015) for data analysis of the qualitative strand and Excel for data analysis of the quantitative strands of the study to ensure the volume of data I collected was managed efficiently.

**Theoretical Framework: Critical Systems Theory**

Theoretical frameworks used in mixed methods research tend to be based on the core project (Morse, 2003). My core project included the qualitative strand designed to ascertain whether the structure of DE programs within the MCCS influences student access. As such, Critical Systems Theory (CST) served as the theoretical framework in quantitative, qualitative, and mixed methods data analysis. The main goals of CST are to empower individuals and transform systems and related policies that perpetuate oppression (Watson & Watson, 2011). Researchers must view social behavior within the
context of the problem, thus methodology is linked to issues such as the imbalance of power (Flood, 1990; Ulrich, 2003).

To reiterate, the three core principles of CST include: critique, emancipation, and pluralism (Watson & Watson, 2011). The tenet of critique requires that researchers are aware of the strengths and weaknesses of different approaches (Jackson, 2010). This is referred to as methodological complementarism (Ulrich, 2003). Emancipatory values focus on inequality of power and a commitment to equal participation in social systems (Flood, 1990; Ulrich, 2003; Watson & Watson, 2011). Pluralism encourages the researcher to use a variety of methodologies and focuses on the stakeholders within the system (Jackson, 2010; Watson & Watson, 2011). Finally, CST can provide practical solutions for addressing inequalities in systems (Flood, 1990; Watson & Watson, 2011). This approach blends two major themes I explored with regard to DE programs: colleges and high schools as complex interacting organizations, and social justice issues such as whether or not DE programs in the MCCS are accessible to underprivileged students.

The mixed-methods approach helped to address the core principal of critique. According to Watson and Watson (2011), systems researchers must recognize that there may be multiple ways to address systems issues and that every aspect of the research must be carefully scrutinized. The qualitative portion of my study, in which I conducted interviews of DE program leaders, guidance counselors, and instructors, provided insights into the two disparate educational systems. Quantitative surveys of students in DE programs at community colleges and secondary data from the MCCS served to validate some views and refute others. In this way, students had an opportunity to share
their voice and ensure multiple meanings were presented, thus assisting in exposing the hidden assumptions that are sometimes embedded in traditional approaches (Watson & Watson, 2011).

By exploring both the structure of DE programs and student experiences in them, I was able to analyze which policies and practices served as barriers to participating students as well as which strategies ensured access to a wide range of students. As complementary strengths and weaknesses are taken into consideration in mixed method research designs (Morse, 2003), the methodological and theoretical frameworks aligned.

Validity, Reliability, and Limitations

Validity and Reliability - Qualitative

Validity in qualitative research describes the extent to which researcher interpretations and the participants’ descriptions have mutual meanings (McMillan & Schumacher, 2006). Reliability in qualitative research refers to the consistency between the results and the data collected (Merriam, 2002). Multiple strategies were used to enhance validity and reliability in the qualitative strand of my study. In the qualitative strand of the study, these strategies included: verbatim accounts, member checking, peer review, multiple sources of data, discrepant data, and multiple methods (Creswell, 2014; McMillan & Schumacher, 2006; Merriam, 2002). Each strategy is discussed in turn below.

Verbatim Accounts and Member Checking.

In-depth interviews are designed to allow for participants to reflect lived experience and for the researcher to analyze, revise, and refine categories as necessary (McMillan & Schumacher, 2006). Interviews were recorded and transcribed verbatim to
ensure data were phrased in the participant’s own language so that direct quotations could ensure validity (McMillan & Schumacher, 2006). Each participant was provided with a copy of their transcribed interview to ensure accuracy (Boeije, 2010). Participants were also offered the opportunity to read and comment on the research findings. Only one participant responded to this suggestion. This participant contacted me via email with a written request for a change in the interview transcript. I followed up with a phone call to discuss her concerns. Then, I sent her a draft copy of the analysis, which utilized specific comments she made to ensure that her request was honored and my interpretations of her remarks captured her perspective. After reviewing the draft analysis, she indicated no further reviews were needed.

In one instance, clarification was needed during data analysis. For example, conflicting information from different participants emerged regarding DE admissions policy. In this case, I contacted a key informant within the MCCS to elucidate the participant’s claim (personal communication, March 4th, 2016). Then, I conferred with Loredo (personal communication, March 4th, 2016), Higher Education Specialist within the Maine Department of Education to further understand the conflicting perspectives, as discussed in the qualitative findings chapter.

Peer Review.

A doctoral candidate in an educational leadership program at another university was asked to participate in a peer review process. Peer review can help to ensure that the findings based on the data are plausible (Merriam, 2002). The peer reviewer was provided with two interview transcripts and a list and description of the a priori and inductive codes that I used during the qualitative analysis. The reviewer was asked to
code the transcripts using the descriptions provided. He indicated that the codes were clear and made sense given the context of the interview responses, and no further instructions were necessary. Through this process, I found that the majority of our codes for specific quotes were similar. In many cases, one phrase had multiple, overlapping codes. For example, “systems negative” was used to indicate instances when the lack of alignment between the high schools and community colleges resulted in a negative experience for students. The comments related to this code were also interpreted as a “gatekeeper” when they simultaneously served as a barrier to DE access. These overlapping themes are discussed in the qualitative findings. When codes for specific pieces of data were different between my analysis and the analysis of the peer reviewer, I used the conceptual framework of Critical Systems Theory and the major themes that emerged from the other eight interviews to determine which coding assignment was most relevant.

**Multiple Sources of Data.**

Multiple sources of data served as a way to establish internal validity as well as reliability (Merriam, 2002). Interview participants reflected varying perspectives at different levels within and between two educational institutions. For example, by interviewing a variety of individuals involved with DE programs within the MCCS, in geographically diverse areas, and at different leadership levels within some of the same programs, I had the opportunity to explore consistent themes. This was also true for the participants that worked directly with students as guidance counselors or DE instructors. This multilevel, statewide sampling approach also ensured prolonged fieldwork. The constant comparative method of data analysis enhanced this process as new data were
compared to preliminary themes (Boeije, 2010). The findings in my study include thorough descriptions to convey details about these multiple perspectives (Creswell, 2014).

### Discrepant Data.

As the constant comparative process was repeated, I also sought discrepant data, or negative cases, that contradicted the emerging pattern (McMillan & Schumacher, 2006). For example, I focused specifically on the perceptions of high school teachers who taught DE courses during the school day and a DE adjunct who taught DE courses in the evenings at a satellite site. These individuals had vested interests in different program structures, so it was important to compare their diverging views the issue of rigor. I also ensured that when conflicting perspectives emerged, these perceptions were illuminated in the findings, even when the perspectives did not represent the opinions of the majority of participants. By focusing on discrepant data I was able to ensure that all voices were heard.

### Limitations: Qualitative

According to Glesne (2011), describing the limitations of a study is an important way to demonstrate trustworthiness. As such, there were several limitations to the qualitative strand of this study. I attempted to interview a wide variety of participants, but due to lack of responses, limited time of participants, budget curtailments, and geographical constraints, I was unable to interview a representative from each of the seven community colleges. For example, one potential participant in a rural area replied to my request for an interview with an automated message that indicated that due to budgetary constraints her position had been reduced to part-time and she would only
respond to urgent e-mails. While participants represented both urban and rural areas, this limitation could mean that the wide economic and geographic diversity within the State of Maine (Long, 2012) was not reflected in my results.

Although some participants had working experiences in different educational settings, the qualitative strand reflects only the perceptions of the 10 individuals included in my study. Because participants self-selected to participate, these individuals may be particularly passionate about or invested in DE programs. It also must be taken into consideration that some individuals had a personal stake in these programs, including initiating, teaching, and leading these programs, which could have resulted in inherent bias. At the same time, participants were encouraged to be forthright and the goal was to capture their perceptions.

Many participants served multiple roles within the educational institutions and reflected on their current and past experiences working with DE programs. This could be a benefit because these individuals represent a wide perspective. On the other hand, this could also be a limitation because it was sometimes difficult to isolate how perceptions varied by specific DE program.

**Validity and Reliability: Quantitative**

I used multiple methods to ensure validity and reliability for the quantitative strand (McMillan & Schumacher, 2006). When it became clear I would have small sample sizes for the student surveys, and statistical significance was not appropriate, I was careful to match the appropriate data analysis tool to each variable using descriptive statistics. Descriptive statistics are a useful way to organize and summarize data in a meaningful way (Coladarci et al., 2008).
**Instrument Validity.**

Instrument validity refers to the appropriateness of a tool to make inferences from the results (McMillan & Schumacher, 2006). The instrument used in the quantitative strand was a student survey. Surveys are commonly used in education research because they can provide credible information, small samples can be used to help represent the general population, and subgroups can be compared (McMillan & Schumacher, 2006). In developing questions for the survey (Appendix F), I used guidelines per McMillan and Schumacher (2006) to write effective questions: the items were short and clear, limited to a single concept, were unbiased, and negative items were avoided. Open-ended responses were utilized to give participants the opportunity to verify and provide additional insights into the close-ended responses. I also used a pilot study to help establish instrument validity (McMillan & Schumacher, 2006), and redesigned the survey based on results from the pilot study.

**Face Validity.**

Face validity represents the degree to which the items on a research instrument represent a larger domain. Face validity was established through an iterative process in addition to the revisions made after the pilot study. For example, during the dissertation proposal defense process, I was asked to demonstrate face validity by matching each student survey question to my research question and to support this decision with the underlying theoretical framework. As a result, some questions were eliminated, others were revised, and key open-ended questions were identified and linked to close-ended survey responses. The results of these analyses can be seen in Appendix G.
During the quantitative data analysis, it was evident that the survey questions, in most cases, matched the domain they were designed to measure. At the same time, some questions provided insights into domains that were unexpected, and some relationships were more complex than initially anticipated. For example, close-ended questions specific to the relationship between student-faculty relationship and course rigor seemed to be intertwined. Further analysis of the open-ended responses supported this conclusion. As such, in chapter five I explain why some survey questions were utilized to support themes in seemingly different domains.

Reliability.

Reliability refers to the consistency of the instrument in obtaining results during different instances of data collection (McMillan & Schumacher, 2006). In this study, reliability estimates were not included because statistical significance was not calculated. In addition, statistical reliability estimates are not needed when information collected is simple and straightforward (McMillan & Schumacher, 2006). Nonetheless, steps were taken to help establish some standard conditions of data collection per McMillan and Schumacher (2006). The language and reading level of the survey was appropriate as supported by the pilot study, it took a relatively short time to complete (approximately 20 minutes), and participation was voluntary to ensure students were motivated to respond to the questions. Also, during the IRB application process, it was suggested that I add an additional question about which college students were enrolled in to ensure that student surveys focused specifically on community college courses. As a result, I was able to identify and eliminate responses specific to DE programs at four-year institutions.
**Limitations: Quantitative**

Many factors likely influenced the quantitative strand of this study. These factors were taken into consideration as the data were analyzed and interpreted. As my research is focused on a small subset of the larger student population, the response rate was low. Low return rate on surveys may limit the generalizability of the results (Coladarci et al., 2008). Population external validity is the extent to which the results from the study population can be generalized (McMillan & Schumacher, 2006). Although my goal was to have at least 100 participants who completed at least eight weeks of a DE community college course, only 44 students completed the survey. This number is likely due to a number of factors including the uncertainty in the number of potential participants in the schools I contacted, very specific criteria required for participation, time constraints, and a misunderstanding of survey criteria. For example, two responses were from students enrolled in community colleges in another state, and another educator thought I was seeking information on dual language immersion programs. Time constraints were reflected during the pilot study, as DE instructors noted that they would be willing to help distribute surveys, but most did not want to use instructional time for survey completion. Given the survey respondents represented less than 2% of the population enrolled in DE courses, it would not be appropriate to assert external validity in this investigation.

One of the main threats to internal validity was also in controlling extraneous variables (McMillan & Schumacher, 2006). For example, if Maine’s top students enroll in dual enrollment courses, perform well in these courses, and enroll in college, it is difficult to determine if this college success is attributed to the dual enrollment program or inherent academic ability. Another threat to internal validity was in determining
demographic factors. For example, according to United States Census Bureau (2014), 95% of Maine’s population is White. Because Maine’s high school population is not racially diverse, the majority of students enrolled in dual enrollment courses will reflect this population. In this instance, a comparison between demographics and enrollment would be invalid. The use of free or reduced lunch as an indicator of SES is not an ideal approach; while this measure reflects disadvantage it does not capture all dimensions of poverty and many poor families do not apply (Kurki, Boyle, & Aladjem, 2005). This threat to content validity was also taken into consideration.

Program variability was also considered. While I focused on DE programs within the M CCS, a broad definition of dual enrollment meant that many students were included. Each program differs with funding structure and acceptance level (Maine Community College System, 2014b, 2016d). While my goal was to see if program structure impacts student experiences, some high schools offer multiple DE programs, thus one student may enroll in different program types, including programs outside of M CCS, which influenced student survey responses. For example, while 21 students indicated they had enrolled in more than one DE course, 11 listed a college or university as their second course. For some descriptive statistics, these additional courses were included in the data analysis because they revealed the patterns of student enrollment. On the other hand, some student responses for the four-year institutions, such as course rigor or student relationship with their professor, were not aligned with the community college focus of the study and were removed during the analysis phase. Although data were clearly labeled in the findings chapter to indicate which data were considered in the
analysis, it is likely that students’ overall experiences in DE courses at both two-year and four-year institutions influenced their perceptions.

In addition, one question asked students to list the name of the college they attended, yet seven students instead listed the name of the course. In these instances, I used the name of the course, course structure, the name of the student’s high school, and my knowledge about DE programs to determine which college the student was referring to. However, these inferences could have some errors.

Non-random sampling is also a threat to validity (McMillan & Schumacher, 2006), as the sample was intended to include students enrolled in DE courses within the MCCS. Reliability is another limitation to this study that was considered. There is no way to determine if results would be similar if methods were repeated. In addition, causation cannot be inferred from correlations in this study (Coladarci et al., 2008; McMillan & Schumacher, 2006).

Validity: Mixed Methods

Combining qualitative and quantitative data can pose additional threats to validity (Creswell & Plano Clark, 2007). Validity in a mixed-methods context refers to the accuracy of the researcher in making conclusions from all of the data in a study (Creswell & Plano Clark, 2007). Potential threats to validity during data collection specific to mixed methods studies include: different sampling population for the qualitative and quantitative projects, unequal sample sizes, failure to address discrepant data, and bias. Per Creswell and Plano Clark (2007), I used many strategies to address these potential issues.
First, traditional methods to address validity within the context of both the quantitative and qualitative projects were followed (Creswell & Plano Clark, 2007). These approaches were previously discussed within each strand. Second, although my sample population varied by interviewing DE program leaders, conducting a survey of students, and using secondary data, all participants were drawn from the collective experience of a population of individuals who are directly involved with DE programs within the MCCS. Finally, as my research was guided by the principals of CST and the multilevel mixed methods design model, these different perspectives helped me identify how participants representing various levels of a system perceived program implementation.

Given the nature of my chosen mixed methods design, unequal sample size is inevitable. In this situation, cases can be weighted (Creswell & Plano Clark, 2007). I chose to emphasize the qualitative data in my QUAL→quant approach. I actively sought discrepant data, which was facilitated by my choice of simultaneous data collection and analysis, as well as seeking input from a variety of participants. Potential bias was addressed through an open approach to reflexivity, a semi-structured interview process, and a standardized student survey.

Data analysis issues in mixed-methods research may include inadequate data transformation and failure to address the same question in both quantitative and quantitative strands (Creswell & Plano Clark, 2007). Rather than transform qualitative and quantitative data, as described in the mixed methods data analysis section, I converged both data sets by comparing and contrasting major themes. For example, though the relationship between the structure of DE programs at community colleges in
Maine and student access was addressed through the quantitative surveys, qualitative interview questions also related to this question. Similarly, qualitative interviews focused on the impact of program structure on student experiences, while some student survey questions addressed this topic.

Despite potential threats to validity, benefits of mixing methods in a research study include more in-depth information, corroboration, and increased trustworthiness (Johnson et al., 2007). Mixed methods analysis is more comprehensive than either quantitative or qualitative data analysis alone (Onwuegbuzie & Teddlie, 2003). By focusing on the strengths of each method, researchers can gain a better understanding of the phenomena.

**Reflexivity**

Integrating both qualitative interviews and a quantitative survey at different levels of a system were intended to provide a broad overview of DE programs at Maine’s community colleges. The principles of pluralism and complementarism encourage researchers to explore where their own perspectives fit within the system while also taking into consideration the facts and norms that are applicable to the stakeholders in the particular system (Ulrich, 2003). A core characteristic of qualitative research is reflexivity, or honesty about researcher bias (Creswell, 2014). Reflexivity is also described as the relationship between the researcher and the focus of the study (Merriam, 2002).

According to Merriam (2002), “It is recommended that the researcher be submerged or engaged in the data collection phase over a long enough period to ensure an in-depth understanding of the phenomenon” (p. 26). As a former high school teacher
and adjunct professor for a community college, I enrolled in graduate school because of my interest in the disconnect between secondary and postsecondary educational institutions. As a graduate student for several years, DE programs remained a central theme for my coursework and comprehensive examination. Thus, I have been engaged in the topic for an extended period of time. Although I did not intend to follow a postpositivist approach, the combination of mixed methods and my effort to remain unbiased did result in some postpositive influences. Postpositivist researchers seek to gain knowledge through objective observations and try not to influence the behavior and responses of participants (Glesne, 2011). Postpositivist research methods tend to be quantitative (Glesne, 2011). Since I had conducted student interviews as part of a pilot study, I had carefully design student survey questions that were not influenced by these earlier findings. I had to repeatedly use reflexivity to ensure that knowledge, background as a high school teacher, and earlier findings during my coursework did not lead to bias in this study. This was especially true when conducting interviews, as I was often tempted to engage in the discussion when a participant shared their perceptions. However, while I tried to remain neutral during data collection, analyses in this study was guided by Critical Race Theory, which seeks to explore how power works to include and exclude certain groups (Glesne, 2011).

Because the interviews were recorded, I used a reflexivity journal to record my thoughts during and immediately after these interviews (Glesne, 2011; Merriam, 2002). These reflections were utilized only during the final stages of data analysis of the transcribed interviews, to ensure the priority in initial coding of the data was based on a priori codes and inductive codes that emerged.
I also need to identify myself as a parent of a high school student enrolled in AP courses as well as a DE course. I worked closely with my daughter to choose the most appropriate courses and secondary institution from a wide variety of options. In order to enroll in a course within MCCS, she would have been required to take the ACCUPLACER. However, she was able to sign up for a course at a four-year institution without taking any standardized tests. She visited her guidance counselor, completed a form, and had me sign it. It was not possible for me to disregard that experience as I analyzed the data in my study.

Finally, I grew up as a low SES student from a rural area and overcame many barriers in order to gain access to higher education. As a first-generation college student in pursuit of a doctoral degree, I recognize and remember the structural deficits that can deter students who do not have adequate support and guidance. Although this study is not formally considered an action research project, I have a sincere interest in helping to reduce barriers to college access and encourage college success for all students.
CHAPTER 4
FINDINGS-QUALITATIVE STRAND

Participants in the qualitative strand of this study represented individuals at the high school and college level. These broad and diverse perspectives provided a unique opportunity to explore the qualitative research question, “What are the perceptions of instructors and administrators of dual enrollment (DE) programs within the Maine Community College System (MCCS) related to student access and learning experiences?” As described in the previous chapter, Brad and Deanna are high school teachers who teach DE courses in science and math, respectively, during the school day. Brad also teaches the same science course as an adjunct for the college in the evenings. Sue, a retired English high school teacher, taught a DE course in the evenings at a satellite site at her former high school that included matriculated students. Jen and Michelle are both guidance counselors that have served as DE liaisons at two different high schools. Selena, Lynn, April, Beth, and Nancy represent DE leaders in different capacities at various community colleges.

An early and persistent finding was that DE programs provide access and benefits to an underserved student demographic. I discuss these benefits first. The second finding, that there were differences between each college, within each college, and with each college and high school partnership is described next. All variations in programs seemed to stem from differences in program structure, including variations such as the purpose of the program, course location, instructor, and program configuration. Program configuration ranges from individual courses to entire programs that provide significant student support. As such, the second finding, student access and experiences vary widely,
is described in general, and then specifically within the context of program structure. Finally, I conclude with the third finding, that specific factors serve to hinder and enable student access. These factors are referred to as gatekeepers and gateways, respectively. This finding is discussed generally, and includes factors in addition to program structure that seemed to affect student access to DE programs within the Maine Community College System (MCCS).

**Access and Benefits for an Underserved Student Demographic**

The first major theme was that DE programs within the MCCS provide access and benefits for an underserved student demographic. All participants were asked to describe the purpose of the particular DE program in which they were involved. In all instances, these descriptions included a discussion of the benefits specific student populations realized from participation. As such, it was difficult to distinguish between the purpose and the benefits of a DE program, as the two were closely intertwined in the minds of the participants. It is also important to note that, despite some criticism, all participants supported DE programs and shared the perception that DE programs within the MCCS promote college access and success for a student demographic that might not otherwise have access or support. For example, April said she was “absolutely sure” that the DE program was reaching a population of students that might not otherwise go to college. She suggested, “DE... tips the scale for them... they thought maybe they’d be going to college and are taking a DE credit, and are accomplishing it, maybe they feel more confident in it.” In order to further explore these themes, first I discuss (a) the specific students who are accessing DE programs, and then I describe (b) how students benefit from participation in these opportunities.
Access to an Underserved Student Demographic

Although some themes were specific to individual DE programs and even individual relationships between one high school and one community college, in all cases, a need was fulfilled that might not otherwise be met for those students or that community. In many instances, while serving the purpose of one program, the DE program offered unanticipated additional benefits to schools or students. For example, a minimum number of students are needed to offer a course at a satellite site in one rural location. While the original intent of the course was to provide a local course to rural, matriculated college students, Sue discussed how DE students have helped to fill the roster of that course so that it has been offered every semester for the past several years. Sue also shared an example of how the DE English course provided an additional opportunity for a student with scheduling conflicts at her high school during the school day. She explained, “She wasn’t able to take an English AP class because of whatever else she was doing... it [DE course] made her look better [on her transcript] so she’s pleased with that, and she can transfer that credit.”

While many participants described the initial goal in of initiating a DE program in the early years was to provide a challenging curriculum to students who were already academically strong, the focus seems to have shifted to a different student population as of late. According to Selena, Jen, Beth, Lynn, and April, DE programs in community colleges in Maine, for the most part, serve a very specific portion of the student population that might otherwise be disengaged from the college search process. In this way, community colleges fulfill a niche. These students were described as individuals who have the potential to go to college, but may not have all of the resources to navigate
the college admissions process. These included students who are first-generation, from rural areas, and students from low-income families. The academic background of these students was often described by the participants as solid students with an average to high GPA. Many described this group of students as individuals who are not in the top academic tier of their class. Jen noted, “I think DE programs are seen as good college prep opportunities for everybody.” Generally speaking, DE community colleges seemed to provide an opportunity for students who would be unlikely to enroll in an AP class.

For the purposes of thematic analysis, specific student populations served by DE programs within the MCCS were broken down into categories which included: (a) students who are underprepared for college, (b) rural and first-generation students who needed additional support in navigating barriers to access, and (c) low-income students. Although the descriptions within each category have been provided for analysis, it is important to note that each individual student could fit within one or more of these categories, and themes tended to overlap. These particular groups of students are described, in turn, below.

**Underprepared students.**

Underprepared students, or individuals who are not quite ready for college, emerged as a sub-theme as participants described DE students in many ways such as: “a fragile population,” “not ready for college level work,” “could be considered at-risk in lots of different ways,” or students with “gaps in maturity and skills.” Academically speaking, these students may not earn all A’s, but do have the minimum 2.0 GPA that they need to meet the admissions criteria. Other terms to describe these students academically included “mid-levels,” or students who were “not necessarily in the top or the bottom of
their class,” or “self-selected as being sharp, they are not the top students, but they are very good students.” Fewer participants described these students as “college prep students,” or “pretty motivated students.”

Brad strongly believed that his course offered at the high school during the school day provided additional college preparation and support these kinds of students needed. As an adjunct who teaches the same science course at both the high school and community college, Brad explained that his high school students are behind in academic skills compared to his college students. He added:

By the time we’re done with the course, we get them caught up... I consider my dual enrollment more of a transition, where, by the end, I expect them to be ready for college. I don’t expect it the day they walk in.

Similarly, Selena talked about these students as fitting a demographic that need one-on-one attention from a faculty member so they may not be comfortable with an online course, which are geared more toward independent students.

Another common perception was that DE courses, by serving as a bridge, provided students who lack confidence with an opportunity to be successful in a college course. Sue explained that the English composition course is a gatekeeping course, and by offering this course at a satellite site it provided a good first step for some students who would be intimidated by a college campus. She explained that, about halfway through the semester, students display a level of self-assurance that they did not have earlier, which gives them the boost they need to know they are college ready. Sue said, “They’re afraid to go to college. This is a good foot in the door for them... and it gives them confidence that they can do it. If there were any doubts I think this demolishes the
doubts.” Similarly, Michelle and Deanna suggested DE courses served as a gateway to other courses. Michelle explained that while the top academic students enroll in AP courses, the students who enroll in DE courses take introductory level gateway courses.

**Rural and first-generation students.**

Generally speaking, students were described as individuals who wanted to go to college, but did not have navigation skills or familial support to attain this goal on their own. Multiple descriptions were used to describe these underrepresented students. Some phrases included, “a different cohort of students,” “more practical, pragmatic students,” or “solid B/C students who just don’t have the support.” In addition, students were described as considering a community college, but were not sure about what career they wanted to pursue. More specifically, all participants identified and recognized the importance of DE programs within the MCCS in providing access to rural and first-generation students.

Selena noted that first-generation and rural students have unique needs and require a different level of attention. She said:

They don’t just want an email address and a name without a face. We made a lot of progress with those students when we developed that rapport and that relationship with them. They feel that we really know them and know their needs and know their struggles. And we are there to kind of help them through some of those barriers. I think we need to invest more in that.

Rural students face particular challenges. Selena explained that she believes students “don’t know how to use the resources that the colleges have... They get overwhelmed... They don’t know who to ask. The advisory processes in colleges are a lot
less intimate than they are in high school... They want to come to a place where they feel comfortable.”

Deanna shared one benefit of providing a DE course at her school is that it offers an opportunity for a rigorous curriculum to a wider population. Deanna explained that when a new AP course was proposed, there was controversy because “the AP students are pretty stretched at our school.” On the other hand, when a DE course was proposed, it received universal support because it was geared toward a different student population. This description reflected the general theme that DE programs within the MCCS reach the rural and first-generation students that other programs are not focused on.

Low-income students.

The majority of participants indicated that DE programs within the MCCS provide access to college to low-income students. Sue shared that these students know that their parents will not be able to pay for their college education and are unsure of whether they will receive a scholarship. She described the students as “not the upper-tier kids who know they want to go to college, but the kids who know they want something under their belt, a little cushion maybe, also to save a little money.”

Beth talked about the potential financial savings by using her own son as an example. She explained that he wants to enroll in the community college for a two-year degree. She figures each course he takes while in high school saves her family $450 in future tuition costs. She noted that while some students do not yet understand or appreciate these financial benefits, their parents do. Beth said parents are becoming savvy and are encouraging their students to take advantage of the opportunity to save on future tuition costs. Brad remarked that DE opportunities are “something that needs to happen if
we’re going to have a more educated workforce, and just going to help more underprivileged students move forward.”

Benefits to Students

As with describing general themes about the types of students who are accessing DE programs, themes that emerged as benefits to students also overlap. Generally speaking, participants discussed how DE programs promoted (a) college aspirations and (b) eased the transition for students once they reached college. I discuss each sub-theme below.

College aspirations.

Most participants shared that a significant benefit of DE programs was that students who were successful in their courses gained a level of confidence that helped them realize they are capable of continuing their studies and earning a college degree. This success was due to the earlier exposure to college and, for some, the opportunity to experience a “real college classroom.” According to Michelle, some students “just don’t like the high school vibe” and need the experience and vision of independence of being on a college campus to see what it could be like for them in the future.

Sue, Brad, and Deanna all shared how having a cohort of DE students in a course that could support and encourage each other was beneficial. Together, the students seem to raise their aspirations as a group. Sue said her students would check in with each other to see if they had completed assignments. The shared goal of earning the college credit seemed to provide a different motivator for students than grades alone. Brad described how, early in a semester, only one of a small group of students really expressed interest in earning the college credits in the course. By the end of the course, however, Brad
discussed how everyone in the class had a shared vision. He explained, “We all have this outside goal of ‘everybody wants your credits’... we bonded a little differently than you would with other classes, where it’s like ‘do I get my A, do I get my B?’

**College transition.**

All DE leaders who described programs offered on a college campus agreed that having the opportunity to negotiate some of the hurdles of taking a course on a college campus is key to helping this particular student group be successful. Lynn remarked, “I actually really believe in DE as one of the tools that will make a kid more successful once they arrive on a college campus.” Michelle noted that most students have unrealistic expectations of what they can achieve right out of high school and college, and DE programs help bridge the expectations gap.

Lynn expanded on this idea by adding that the benefit of a DE program with intensive support was that DE leaders have the ability to have discussions with students about the feasibility of enrolling in courses. She shared how she addressed issues such as whether a student will have time to commit to a course and also participate in sports, or setting up support systems when test scores indicate weaknesses in a particular area. When standardized test scores indicate a DE student will need many developmental classes, she recommends adult education programs so that students will not have to use financial aid in the future to pay for non-credit bearing courses. Lynn adds, “I never want to set a kid up for failure.”

Nancy explained that for students enrolled in DE courses, the continuity in expectations from one year to the next was also a significant benefit from a learning perspective. Similarly, these programs were described by many as a bridge between high
school and college, providing students with the navigation skills they needed to be successful. These courses also delivered additional rigor, career exploration, and diversity in programming. This finding was particularly true for seniors. For example, Deanna shared that the math course she teaches provided a next step for students who wanted to take another math class but were not yet ready for calculus. Deanna acknowledged that remediation in math “is a huge issue. I think this helps with that issue.” She added that she’d love to add a computation course, which is designed to help underprepared students, but her school does not have the staff to offer an additional DE course.

The opportunity to earn transferable college credits was also an asset for students. Courses offered on the high school campus had an additional benefit of accessibility, because the courses fit within the student’s current school schedule. Brad said,

*We had one student that literally went to sign up for [community college] and already had seven credits. A lot of students actually have come back from being at [community college] or somewhere else, and say, “Thank you. I was able to use the credits.”*

Deanna also emphasized that the credits have transferred easily to the community college and other local colleges. Additionally, in some cases, student could meet the prerequisites for entrance into specific MCCS programs, such as their highly competitive medical programs, while they were still in high school.

Many participants also discussed the financial savings as an added benefit, in an environment of rising college costs. For example, for the programs offered on the high school campus, when books are provided, the total cost for student is $3.00, which reflects the cost of a student transcript. Deanna shared, “I think it’s a great idea... when
it’s done well, it will really help the students succeed and kind of get that leg up on college... it’s a free college credit, is how I look at it. And that really helps some of the struggling students with financial needs.”

**Access and Experiences Vary Widely**

While all participants described benefits to students, program descriptions and participants’ perceptions varied widely. Each community college seems to operate autonomously, and many participants noted that there were minimal opportunities to collaborate with other DE program leaders throughout the State. All of the participants admitted that DE programs have not been evaluated on an individual or system-wide level. Six of the 10 participants expressed the perception that there is significant variation in student access and experiences in DE programs at all levels. Though some programs are replicated statewide, each community college also implements specific DE programs. April described the broad perspective, “I don’t really know how all of the other schools conduct their DE programs.” Similarly, after describing the DE program at her college, Selena explained, “I think it’s really very individualistic. I don’t know that it is an approach that others are using.” Within each college, Lynn, April, Nancy, Michelle, and Jen also suggested that different DE programs vary widely. Selena advised, “I think you’re going to find a lot of variability between... the concurrent versus more traditional dual enrollment. I think it’s... incredibly vast.”

Furthermore, several participants suggested that even within specific DE programs, the instructor largely drove the experiences students had in individual courses. For example, Jen explained that students have claimed some DE courses were easier than their high school courses, while other students have said the opposite was true. She
added, “It’s so subjective, and it really depends on... the culture and the approach that the teacher establishes.” April described her perceptions of the courses offered on both the community college campus and the high school campus:

I believe they’re both as rigorous. The high school instructors do need to be vetted by our department chair, they have to follow the same syllabus as our department chair. However, we obviously aren’t in the classroom, watching all those classes, so I guess there could be a gray area there.

It appears many aspects of DE programs vary significantly by program structure. Because there is such wide variation in program structure, themes were analyzed within three broader categories related to course location: (a) courses offered on a college campus or at a satellite site (traditional DE), (b) courses at the high schools during the school day (concurrent enrollment), and (c) online courses. Within each of these three areas, I also discuss the sub-themes of the impact of course location on college integration, rigor, and student support.

**Courses on a College Campus or Satellite Site (Traditional DE)**

Courses offered on a college campus or at a satellite site are taught by college professors or adjuncts. These courses have both high school and matriculated students and are referred to within the MCCS as traditional DE courses. Course location on a college campus or satellite site seemed to be important with respect to three key areas. First, I will discuss the level of college integration, then I will present the perceptions regarding course rigor, and finally I will share perceptions regarding student support.
**College integration.**

Many participants regarded integration into the matriculated college student population as an important component of a traditional DE program. This perception was shared specifically by community college leaders (Selena, Beth, Lynn, April, & Nancy) and an adjunct professor at a satellite site (Sue). For example, faculty members in traditional DE courses are unaware that specific students are still enrolled in high school unless they look for that information or if the student discloses that fact.

A diverse blend of matriculated and high school students is perceived by many as a benefit. Sue acknowledged that although colleges could increase DE opportunities by offering college courses during the school day, she believed their experience would be compromised if the classes did not include matriculated community college students. Lynn noted:

> I think it is wonderful, the fact that you can have a 17 year old sitting with a 65 year old, and everything in between. It’s maybe not how everybody would think of college, but it can really add to both perspectives, and really enrich that.

Sue also felt that having adults in the college class was an advantage. She said that when high school students are being disruptive, the adults in the class inform her because they will not tolerate that behavior. Sue described one incident in which an adult student shared aloud, “I woke up one morning and decided I never wanted to put on work boots again, and this is my first step towards that.” That quote resonated with her high school students, as they seemed to appreciate their opportunity and take the class more seriously after that. Since then, she has used that story as an introduction to her courses.
Many felt strongly that the on-campus experience was important in order to give students the confidence they lack. Lynn said that for students who enroll in a course on the college campus, some of the barriers are overcome. She explains that when a student matriculates, the credits they have earned serve as a buffer. In addition, because these students already have a parking pass, know how to find their building, and can read a syllabus, they are better prepared for college. She adds, “Those are the things that are never taught, but that derail first-gen students... students who are coming from a school that has 60 kids in it... it’s too much to handle all at once.”

Programs offered on a campus or satellite site were designed specifically to alleviate the fears students may have that they are not ready to do college-level work. Jen explained that students seem to have a better understanding of the consequences of failing the class because “it’s much more real to them. They know if they fail, it’s a big deal.” Whether the student matriculates to a community college or enrolls in a university, the DE experience was considered a success if it provided the confidence the student needed to know they could perform well in college. This sentiment was an integral part of the on-campus DE program.

DE courses at satellite sites are discussed in this study within the context of on-campus courses because they are taught by adjunct instructors and have a mix of high school and college students. Satellites sites seem to serve their own niche and therefore serve as an additional gateway. Beth, Sue, Selena, and April, indicated that satellite sites played a critical role in student access to DE programs. Beth, Selena, and Sue identified the benefits of satellite sites in providing access to students who would otherwise need to travel significant distances to the college campus, in both rural and urban areas. Sue
explained that the DE students who had taken her course represent a wide geographical area. She said, “The location is important. These people, I don’t believe, would be taking these courses unless they were local.” Sue described the mix of students in the classes she has taught at a satellite site in the evenings on a high school campus for the past six years. She said she felt these sites served a wide variety of community college students including students from area high schools, homeschooled students, and matriculated students who ranged in age from individuals who just graduated from high school to older adults.

Sue acknowledged that satellite sites do provide a different learning environment than a college campus, but suggested that having local access to a college course helps all students acclimate. She described how the goal for many students is to eventually matriculate, but the opportunity to take a course at a satellite provides a first step for DE students as well as members of the local community. An added benefit of the location is that because she was also a high school teacher at that school, she could access and use the school computers, noting that in each course there are several students who lack access to their own computer.

On the other hand, all participants from traditional, on-campus DE programs identified transportation as a significant barrier to DE access. Thus, transportation is identified as a gatekeeper to access to traditional DE programs. Sue, Beth, and Selena shared that despite the benefits offered by the location of courses at satellite sites, transportation still posed a challenge for some students. This was especially true for rural areas, but also affected urban schools as well. Lynn and Beth both noted that for some programs, because students have to take courses on the college campus or at a satellite
site, enrollment numbers are not always maximized. Michelle said transportation was a “huge, huge barrier” for students when she worked in a rural school. Selena and Beth described how some students had to drive significant distances to reach the college campus. Selena noted that this was an additional commitment required of students, especially considering variable weather conditions and sometimes getting up at 6 am to arrive on time for an 8 o’clock class.

Sue also indicated that students’ home situations seemed to have an impact on their ability to get to class. Students shared information with her such as, “My mom had to drive me, I don’t have a car,” or “I’m late because my mom just had a baby and I had to take care of the baby until she got home.” Sue explained that while these stories are not true of all students, they represent themes she has heard over the past several years of teaching DE as an adjunct. This sentiment was shared by Selena:

[The students] go home probably because they have a sibling they have to care for because mom and dad are working...or needs them to help prep supper, but then they don’t have transportation access to come back in the evening. They have cultural barriers within their household. Even if the student himself or herself is inspired to do that, the household just isn’t giving that a priority, giving that kid an opportunity.

Lynn noted that the high school students they serve from both urban and rural areas are facing similar challenges in finding transportation. She advised, “You don’t want to make assumptions.” For example, Lynn described how one mother, during orientation, was trying to figure out how to navigate the public bus system in an urban
area so her child could get to campus because their family did not have a car. Michelle explained that her students also used public transportation:

"It’s a couple of buses over for them, so it’s not too terrible... But transportation is always a barrier for students... If the students have free and reduced lunch, right now they still have to pay [a discounted price]... for every single bus ride. So that adds up.

In addition to transportation as a gatekeeper, Sue, Lynn, and Selena also described frustration when courses at satellite sites are cancelled due to low enrollment. Selena explained that in some instances enrollment numbers at the satellite sites have been so small that even after a high school student has met prerequisites, registered for a course, completed the necessary paperwork, and purchased their book, the community college cancels the course due to low enrollment. This has also happened when colleges could not finding adequate staffing.

**Rigor.**

Participants who felt that the on-campus experience was important had different perceptions about the rigor of those courses. Sue, Lynn, April, and Nancy all shared the perception that DE courses on the college campus were more rigorous than courses held at a high school. Beth, whose son is enrolled in DE courses, noted, “I think they are easy courses for him but it lightens his course load when he starts here in the fall.” On the other hand, specific courses such as English composition were identified as especially difficult and students struggled with the amount of writing compared to what they are used to doing at the high school level. Beth and Sue cited the English course as a gateway course that students found challenging in making the transition from high school to
Beth added that students tend to get lower grades in certain classes that may be more difficult, regardless of location or instructor.

**Student support.**

Within the general program structure of courses offered on campus or at a satellite site, there were differences in the level of support provided to students. Support ranged from minimal to intensive. According to Michelle, “We have a study center here [in the high school] that meets a couple of days after school. But... other than that, they really are kind of on their own, as far as support goes.” Other schools took a different approach. Jen described a program at a high school at which she used to work in which high school students visited the college campus to meet with admissions representatives and tour the college campus. On the other hand, students enrolled in a different program received comprehensive support including a course orientation, guidance about the add/drop time frame, a discussion of the course syllabus, and a campus tour. While on-campus for the tour, students received their parking pass. Lynn explained, “Those things are pretty daunting for a first-generation student, because you’re speaking another language.”

In one unique partnership, high school seniors travel to the community college during the school day. In this situation, Selena arranged to have a check-in system with the students. During these meetings, Selena would ask about their grades, their workload, and how students were handling the pressure of balancing their college courses while finishing high school. She noted that when issues arose, she would share this information with the high school guidance counselor. She explained, “I could not, in good conscience, do it otherwise. These kids are taking a big risk, and I think we have to acknowledge that they are high school students. And there is a difference.”
Courses at a High School (Concurrent Enrollment)

The MCCS specifically refers to dual enrollment courses at a high school during the school day as concurrent enrollment courses. These are courses taught by a qualified high school teacher, who must have a master’s degree in their content area. These courses are comprised of high school students only. Course location at a high school was also important with respect to the same three key areas as described above: the level of college integration, perceptions regarding course rigor, and perceptions regarding student support.

College integration.

Deanna summarized the broader access provided to students when the courses are located on a high school campus, “This year I have 44 students who will have taken it [DE math course]. Twenty-two each semester, so my class is full each semester, which is great. But I don’t see that 44 students would be going over to [community college] and taking it there.” Yet, in courses located on a high school campus, the trade-off seems to be that integration and transition into the college culture is minimal or non-existent. Beth acknowledged that there are differences between courses offered at the high school and on the college campus, but explains that in both types of courses students follow the same guidelines and complete the necessary paperwork and process for enrollment.

The most significant challenges associated with courses on the high school campus included conveying to students that they were, indeed, enrolled in a college class. Despite her support for the high school courses, Deanna shared that although the students
recognize it is a college class, “To them it still feels like it’s a high school class because it is.” Jen remarked:

It really does take a special teacher to pull off a college feel in a high school setting... The lockers are outside, the bells are ringing. The kids are going to come late to class with their coffee (laughs), or...from the nurse’s office, or whatever. It is really, really hard to pull off, say, to constantly carry “this is a college class” when the high school setting and the high school identity is so, so pervasive around them.

Deanna acknowledged, “They are not on that campus, experiencing the different ideas of what campus life is like.” Although the community college offers an evening program, which includes a campus tour, not many students participated. Jen claimed that students in this program structure did not really felt an allegiance to the community college from which they were earning credits.

Jen was one of few participants who offered a thorough critique of the DE programs offered on the high school campus. She used an English course as a hypothetical example, explaining that a well-meaning teacher who reminds students of deadlines and provides significant help each step of the way, but does not require enough reading or writing will not be beneficial to students. She expressed her concerns:

I get a little worried about this idea of making... college so enmeshed with high school that it becomes high school. That kids don’t know the difference.... If we don’t kind of truly try to... capture, the college experience at the college level... how are we preparing them for their next class?
Jen also discussed how the original intent of the DE course as a rich and rigorous experience was not being fully realized by having courses taught at the high school. She noted that students do not refer to their concurrent enrollment courses as college courses, but instead as any other class, only with college credit attached.

Nancy identified another challenge with integration of community college courses on the high school campus. She said that high schools might not be as adequately equipped to replicate what is needed to offer the same experience. This point was particularly true for technical courses and some science courses. For example, a DE science teacher at the school at which I taught had to periodically drive to the college campus for equipment and supplies. Other aspects of DE courses varied as well. For example, Brad explained that with the community college for which he teaches, all students within his class have to be enrolled in the DE program. As a result, these courses are sometimes small because “it has to be all dual enrollment or nothing.” Yet, at another high school, students who passed the ACCUPLACER in English could earn college credits for a science course, but those students who did not earn the required minimum score, in the same high school class, could not.

Classroom time was also a concern and perceptions on this issue varied. Nancy, who was actively involved in the inception of one DE program at a community college, expressed the belief that in order to qualify as a college course, the DE course must be completed in the same amount of time as a community college class. She noted, “The end goal is to have exactly the same experience… in both settings.” She felt that if students had more time, such as two semesters, to complete the work in a high school
course, while when the on-campus students had only one semester, that difference in time was an unacceptable difference in program.

**Rigor.**

April, Lynn, Jen, Selena, and Sue noted that it is difficult to monitor the rigor of the DE courses, particularly those offered on the high school campus, because these classes are difficult to observe. For example, Selena and Jen both acknowledged there were some quality control issues. Selena added, “How do you maintain the integrity of your programming when it is embedded in a high school culture in a high school with a completely filled roster of high school students?” Jen shared some students’ sentiments that certain DE courses offered on the high school campus did not have high expectations. Selena explained that one way the college was addressing the issue of rigor was through requiring all faculty use required programming, including online portals to ensure the DE students were utilizing specific materials. The community college is expecting a lot from faculty members, she noted, and it takes the right faculty to be able to “hold the line there” in terms of delivering appropriate rigorous program.

Conversely, Beth noted, “Academically, I think they get the same experience.” High school instructors Deanna and Brad described how they worked closely with the community college to ensure course alignment. Deanna said that while she develops her own syllabus, tests, and quizzes, these are based on guidelines provided by the college. A representative from the college visits to check in and conducts observations of the teachers. When the DE course was initiated, Brad met with the professor at the college and they compared the college curriculum with the high school curriculum. After some modifications, Brad felt it was a smooth transition to teaching the DE course.
One difference between a high school and college course may be that in one of the DE courses offered on the high school campus, homework is collected and graded. Deanna explained, “I don’t know if me grading the homework affects these students... doing as well, because at [urban community college] they don’t grade the homework.” Another difference was parent involvement. While college instructors do not reach out to parents when students are struggling academically, Deanna noted, “The phone call home to the parents always seems to help quite a bit... Usually it opens my eyes, maybe something’s going on at home and... there’s a reason for, usually, the struggle.”

Despite the differences between the high school and college campus courses described by Deanna and Brad, both indicated they felt that the course they offered was equal in rigor. Deanna added, “I tell them right off what their expectations are. And I tell them that it is a college-level course. So I do expect a little more out of them... and a little more responsibility on their part.” In addition, students are made aware of the expectations of them when they register for the course and it is reiterated in the course syllabus, “so they kind of know what they’re getting into.” April noted that the conversation about having to prove that the courses taught in high school are as rigorous as the courses taught on campus will continue. She adds, “I think that as time goes on there’ll be more requirements to prove that out.”

**Student support.**

Students who were enrolled in DE courses at the high school during the school day had access to the support systems already in place at their schools. In general, the high school instructors who discussed these programs seemed to provide more guidance
and support than students received in the on-campus programs. While some participants were critical of concurrent enrollment programs, nonetheless the high school teachers felt their programs were beneficial to students. For example, Brad explained that his college-level science course works for students because it is year-long, which gives students additional time. He notes, “When they come to me in the fall, most of them are not ready for college level work. They’re not mature enough, they don’t think that way.” Brad describes how his high school students have some of the math skills they need, but there are also some gaps, and that they lag behind the college-level students he teaches as an adjunct for the college in the evenings. He notes that, at the college level, those students would have to seek supports, while at the high school-level they have access to guidance counselors and other teachers. Brad also explained that by offering the DE course on the high school campus, students find it much easier to seek help because he is readily available, as opposed to an on campus situation where a student attends class one day but has to return for office hours on a different day.

As an adjunct he acknowledged the differences between the community college course he teaches on campus to matriculated students and the DE high school course. He remarked, “When I teach at [urban community college], it’s just to get the curriculum across, to make sure they can apply for whatever major they’re going to do... I consider my DE more of a transition, where by the end I expect them to be ready for college. I don’t expect it the day they walk in. So it’s treated a little differently.”

However, Nancy, Deanna, and Beth also described the efforts colleges made to provide additional services and try to integrate high school students into the college community. Nancy explained that although many of the students were enrolled in courses
offered on the high school campus, students had the same access to the library, technology, and other resources available to matriculated students. In some cases tutoring groups were formed, and the college librarian visited high schools to instruct students in how to access the library’s technical databases. Deanna and Beth said that students receive a college ID, and obtain login information so they can access the college’s online resources. Deanna shared that a college representative visits the high school campus to discuss college expectations and to help students plan for the future. Although she teaches a math course, she described how students used the online library resources of the college to complete their high school English term paper.

Despite access to support services, Beth did not believe that many students needed to access them. She noted that because these students are recommended by their guidance counselor and are highly motivated, they do not need the additional resources. At the same time, Beth noted that some of the high school students did take advantage of the opportunity to utilize the fitness center on campus.

**Online Courses**

Although the majority of discussions involved in-person courses either on campus or at the high school, Selena, Beth, and April also reflected on online courses. All participants shared the perception that online courses were not a panacea to DE access and success. Reasons varied and included the concern that the learning environment did not fit the needs of the student demographic, lack of access to appropriate technology and the internet, and the desire to offer students an actual college course with other matriculated students. Conversely, in some areas the geographical location is so isolated
that online programs are the only viable option for students, and only if students have broadband Internet access.

April shared that, even for matriculated students, the college does not recommend that students take an online course until they have earned at least 12 credits. She explained that especially for inexperienced college students, “Just because... somebody’s tech savvy... there just seems to be... motivational barriers.” She added that in rare circumstances with a highly ambitious high school student and multiple recommendations, the college might make an exception and allow an online DE course. Beth also described how the college she works for discouraged online courses but will make exceptions for students who have been successful in at least two or three courses. Beth noted, “We try to avoid it for the high school students because they’re trying to get a college experience, and they can’t really do a college experience if they’re sitting at the computer at home.”

Selena commented that, for some students living in very rural areas, online courses are the only option for them. For these students, access to the Internet at home is necessary. If students do not have access to the Internet or are not ready for an online course, they will not be able to participate in a DE program. According to Selena, “If they don’t have Internet at home, or they’re just not an online kid, it’s not going to work out, and so you can’t give them that experience, and that just kind of stinks.” Similarly, Lynn suggested that students have to be particularly motivated to be successful in an online course, and this option would not be appropriate for students who really need a hands-on experience. Selena estimated that the college was providing approximately 200
students with online opportunities, which was positive when considering they might not otherwise be able to participate.

Nancy described how economic factors affected whether students had the equipment and bandwidth to access online programming. Despite clear expectations, some high schools with which the community college partnered did not have the technology needed to interact with their online programs. In such instances, the colleges worked with the high schools to set up an area where students could access the online courses through the high school campus. However, she noted that, despite efforts to improve connectivity, rural students in under-resourced locations were still at a disadvantage. Although students were provided with ID badges so that they could access campus resources, she suspected that demographics likely prevented many students from utilizing them.

Alternatively, Lynn had mixed feelings about the benefits and risks of DE programs. She expressed that some high school students can be successful in online courses, but added that student success would not only rely on student motivation but pedagogical design of the course as well. She added, “I think it has much to do with how well you structure your online pedagogy, as it does actually having a high school kid taking that seat course.” She described her work in another state in which high schools have taken various approaches to support their students in DE online programs, including a principal who set up a desk outside their office, or mandatory attendance during a study hall designated as DE course time. She noted that she was not in favor of online programs, but felt these were a necessary component of rural education initiatives. She expressed concerns about delivering effective student services, support, and retention
efforts remotely. Lynn seemed resigned when she added, “We have to find a way to make sure everybody here can access education, and online is probably going to be one of those ways.”

**Gatekeepers and Gateways**

The second major qualitative finding related to the various gateways and gatekeepers to access to DE programs. Gateways and gatekeepers included beliefs, policies, resources, and other factors that provided or limited access to DE programs for underrepresented students. Gateways and gatekeepers are discussed collectively because their presence or absence has a significant effect on student access. These factors include (a) admissions policies and practices, (b) the presence of a champion, (c) bias against community colleges, (d) guidance counselors, (e) finding qualified instructors, (f) financial resources, and (g) the high school students themselves. These factors are discussed, in turn, below.

**DE Admission Policies and Practices**

The majority of participants (9 out of 10) felt that DE programs supported college access for a wide range of students. Some participants specifically described how a more flexible approach to determining eligibility facilitated access. On the other hand, Michelle emphasized how admissions requirements such as standardized test scores and minimum GPA hindered DE access. Despite the general perception of open access to DE courses, participants discussed variation in admissions policies and practices within a community college, between the community colleges and four-year institutions, and between different community colleges. I discuss each of these themes below.
Admissions policies and procedures within community colleges seemed to vary, depending on specific programs. For example, Deanna noted that for students earning credits at technical centers or schools, these tech schools sign off to indicate that the students are capable of doing college-level work. However, if a student wants to take a course on the college campus, standardized test scores are utilized to determine eligibility. She remarked:

Our whole goal is to get students in here. And the major goal is to get them to graduate. We don’t want a student coming in that just is trying to blow off... getting out of class early and just sitting in the class and not doing anything... We want a student... that’s actually motivated to do the work.

Both guidance counselors also described the differences between access to DE programs at four-year colleges compared to community colleges. Jen explained that many of the programs offered by the four-year private and public universities do not require standardized test scores. Michelle clarified:

The ACCUPLACER is at the community college level, because that’s just the test that they have for all students who are entering [community college]. So... [four-year public university] doesn’t have [testing] unless you’re taking a math or an English course, they don’t have you take any other test. You just have to have a B or better average.

In this example, the admissions requirements described at the community colleges appear to be more restrictive than those at a four-year public university.

A stark contrast also emerged between admissions procedures at two different community colleges. While Michelle explained that the community college she
collaborates with requires ACCUPLACER or SAT scores and a minimum GPA, Jen said the community college she works with allowed the high schools to determine which students were ready for college-level work. Jen perceived this was due to strong advocacy by the high school, close proximity to the community college, and a positive working relationship between the two educational institutions. She said, “I think over time, they have really kind of made their placement policies more flexible. So placement really is the problem and responsibility of the guidance office.” Jen suggested this change might also be due to competition from a nearby four-year institution with less restrictive admissions requirements. In this example, Jen expressed gratitude that placement in the DE courses was the responsibility of the high school guidance department.

On the other hand, Michelle and Jen expressed concerns about admissions barriers having potentially negative implications. Michelle and Jen both identified standardized test scores as problematic, and expressed frustration that some students are unable to pass the ACCUPLACER the first time. Michelle explained, “I think that these standardized tests really have been kind of a barrier for our students... The ACCUPLACER is a little bit more user friendly than the SAT, but we certainly have to work hard to get students into colleges and buy into the college mindset.”

Similarly, Jen talked about one student who had been unable to earn an acceptable score on the ACCUPLACER despite practicing and taking the test multiple times. Michelle noted that when the ACCUPLACER was offered at her high school, only about 20 students participated. Of those, only four passed. Michelle shared that at another high school she worked at previously, the community college and high school worked together to schedule a date to administer the test. However, “That was a challenge because we
only had one day that people could take the ACCUPLACER, and [community college] had to come in and give it.” Michelle said if students were absent that day, they would not be able to access the test. She further notes that her current school is a testing site which has advantages, “If the kid doesn’t do so well one day, giving them some prep materials and then having them comeback in a couple of weeks, that really does help.” One drawback is that each test does incur a cost.

Michelle said the ACCUPLACER was particularly difficult for some populations at her school. She shared, “Many of our students do struggle with the ACCUPLACER, as they are first-generation [students] and also new to the English language... so taking a test like that is fairly difficult for them, and does take them a couple of times, generally, in order to pass.” English Language Learners (ELL) comprise over 25% of the student population at Michelle’s school. According to Lynn and Michelle, the number of ELL students is rising in Maine. Lynn explained that while community college staff members are familiar with the challenges of working with the specific needs of rural students, working with ELL students has presented new challenges.

Michelle also identified additional barriers students face. After some students take the test many times and finally pass, only then can she see if there is any availability left in the introductory courses allowed for DE students. GPA is also a challenge. For example, Michelle shared:

I remember one kid was really mad at me when he turned in his paperwork and then we looked at his GPA and it was not [high enough], it was a D average. But he was a really smart kid, he just had a lot of family struggles and a lot of outside
things happening, which meant that he really wasn’t able to be successful in high school.

She further explained, “That is another big hindrance, we aren’t able to just use our professional discretion and say hey look, Johny had a rough freshman year, but he’s turning it around. Yes, he has a 2.0, he has a C average, but he’s taken the ACCUPLACER and passed it. He’s ready.” Nancy explained that the question of who is qualified to enroll in a college-level course while in high school remains unresolved. She said, “I don’t think anybody has answered it satisfactorily. I don’t think there’s a common practice for how students are selected for these dual enrolled courses.”

**The Presence of a Champion**

The presence of a champion can serve as a gateway for students. Champions, or the lack thereof, also seemed to contribute to the variability in student access to and experiences in DE courses. In this sense, participants conceptualized a champion as someone who strongly advocated for DE programs including encouraging students to enroll and rallying education leaders to provide resources. Nancy stressed:

DE... when it doesn’t have a common practice is like so many other things that have happened in higher education, they work better were you’ve got certain personalities who are really interested in it. And they work less well in areas where they lack a champion.”

Selena noted that the colleges offer the opportunities and provide the information to local high schools, but whether programming is then offered really depends on if individuals within those schools take the next step to move the initiative forward.
The champions at the high school level differ, according to the participants, and have included a principal, guidance counselor, and an administrative assistant. April explained, “A guidance counselor will kind of seize the reins and encourage as many students as possible to take an ACCUPLACER test and to take a class.” Selena described one innovative program in which high school students enrolled in full-time coursework at the community college during their senior year. This happened because the high school “had a brilliant idea and a very innovative superintendent.” The same holds true at the community college level, where individuals take the initiative to promote and expand DE programs. According to Selena, there is no one specifically who has oversight at the college level over DE programs as a whole, so the success of individual programs relies heavily on individual program leaders.

The importance of a champion at both the high school and community college level was demonstrated by one partnership as Jen shared how the expansion of DE programs at her community college evolved. She said that site coordinators at the local high schools began reaching out to her. These individuals requested specific courses. She explained, “They felt like they wanted to participate in that course selection based on the needs of their students.” Jen responded by working closely with the high schools to develop programming at each school specific to their needs.

**Bias Against Community Colleges**

Lynn, Sue, and Selena suggested that longstanding bias against community colleges might have a negative influence on whether some guidance counselors encourage DE programs, thus serving as a gatekeeper. Lynn said, “I’ll be real honest with you. I think that there is still lingering (sigh) ... I don’t think anyone wants to say, ‘Hey,
you’re a great kid for community college’ yet. It is just not valued.” Even though the Maine system changed from technical colleges to community colleges over a decade ago, the perception of bias still lingers, according to the participants. Lynn expanded on this perception, “For the guidance counselors who want their senior roster to be UMaine, UMaine, UMaine, Bates, Bowdoin, Colby, they are sometimes not as likely to push a community college, even though it may be financially, academically, logistically, the absolutely perfect place for a kid to start.” Similarly, Sue emphasized, “I think the privileged kids don’t [enroll in community college DE courses], because, maybe they think that [specific community college] is a little low class.”

The perception of bias by guidance counselors appears to be affirmed by Michelle and Jen. Michelle admitted she advises higher-level students to enroll in AP or DE programs at four-year colleges if possible. She explained that this is, in part, because the top students need advanced courses in math or science. Furthermore, Michelle shared, “I’ve heard from college admissions departments, they would rather have an AP class, rather than a college class or dual enrollment class at the college level, because they know what’s in an AP class... it’s an internationally normed test.”

Jen’s comments also seemed to support the claims of bias. She remarked, “I don’t think DE classes are as difficult or carry as much clout or weight value as AP courses.” She added that because there were strong filtering mechanisms in place for AP courses, students might be encouraged to take DE courses because these are perceived as a “cool catch-all for kids.” At the same time, she noted that some students, including students from low SES backgrounds or first-generation students may have the academic ability to take an AP course, but do not have the background knowledge to make an informed
decision about which course to take. She says, “They might still not see themselves as AP material, or an AP identity.” Jen explained, “When we’re looking at access, we need to make sure that the kids are getting the best preparation possible, exposed to the most amount of rigor.”

Lynn noted that the bias against community college is evident in the way national data reporting systems identify first-generation students. A student is classified as a first-generation student even if their parents hold a degree from a community college. She stated, “How dare I then say… if mom and dad have a degree from a community college, that that’s not a college degree?”

Guidance Counselors

The importance of the guidance counselor has been previously suggested through the discussion of the presence of a DE champion and perceived bias against community colleges. Regardless of whether guidance counselors serve as a champion, facilitator, or gatekeeper for DE programs, the success of DE programs in general relies heavily on these individuals. Therefore, the role of guidance counselors in DE programs warrants separate discussion.

The community colleges rely heavily on the high schools for the logistical work involved in DE coursework. Half of the participants described how the high school guidance counselors identify appropriate students, get paperwork completed, and organize the administration of the ACCUPLACER. Lynn shared, “There’s a huge amount of logistical work that we rely on the high schools to do. We simply couldn’t do it. We’re not in the high schools.” Jen notes that the college sponsors a DE summit every year, to review policies and routines. Although DE high school instructors are encouraged to
attend, the guidance counselor usually represents the high school and facilitates the relationship with the local community college.

According to Lynn, the buy-in from the high school is important, and when the high school guidance counselors are not invested in the program, the turnout is lower. In many cases, scholarships and courses are unclaimed due to lack of participation. Lynn remarked, “These kids are identified by their high schools, which is key, because the high schools actually know the kids and they know the individual situations, and they know which kids need a little bit more kind of personal support.”

Michelle described the multiple challenges guidance counselors face, “I think that working at the public high school level, we have so many different initiatives going on at one time (laughs)... you really only have so much time to evaluate program effectiveness.” Michelle added that without a designated person assigned to implement DE programs at the high school level, time, as a resource, is limited, “There’s only so much that you can do.” She explained that while she is helping seniors complete college applications, she is also planning presentations for juniors to spread awareness of DE opportunities.

Jen and Michelle described college and career counseling as a very demanding process. For example, Michelle noted:

[Students] say they want to be doctors, and, “Yes, we want to support you on your dream. Let’s explore that a little bit more, though. Is it that you like helping people? Maybe starting out at the community college level and then working up to a four-year degree and then... a medical degree would be more appropriate for
you.” We really want to make sure that students are successful when they go to college.

On the other hand, Brad expressed frustration when a guidance counselor was hesitant to enroll a student in his DE course because they were concerned that the student would sign up and fail. He noted, “Maybe they should sign up and try to succeed (laughs). So there’s been a little bit of kids talked out of it when I don’t think they should have been talked out of it.”

Leaders from the community colleges seemed to recognize the multiple expectations and demands placed within high school guidance departments. Lynn acknowledged:

The guidance offices are doing college counseling, but they’re also doing an incredible amount of triage in those high schools. And so to expect them to be able to college counsel every single kid in there, appropriately and exactly where that kid is and wants to be, is probably unrealistic. Especially with [limited] staff... their caseloads are so high.

Both Jen and Michelle worked at two different high schools and served as DE coordinators at both of them. The responsibilities associated with promotion, enrollment, and coordination of DE courses were in addition to the other tasks that were required of them as guidance counselors.

**Instructor Qualifications**

Finding faculty members who have the adequate qualifications to teach at the community college level was identified as a challenge for many community colleges,
particularly for colleges serving rural areas and at satellite sites. Minimum instructor requirements are determined and driven by the accreditation process.

According to Nancy, instructor qualification requirements were established in the early development of DE programs within the MCCS. These were driven by the accreditation organization, The New England Association of Schools and Colleges (NEASC). Nancy claimed NEASC serves as a gatekeeper in this regard. NEASC requirements include the mandate that at least 50% of all college programming takes place on campus proper, and that high school DE instructors meet strict qualification standards and are assessed in the same manner as community college adjunct instructors.

As these programs were being developed, Nancy explained that NEASC accreditation was important to ensure that the credits high school students were earning would transfer to another college, regardless of whether the courses were taken on a college campus or within the high school. The NEASC-based regulation that most struggled with was the idea that high school teachers were serving as adjuncts but were not being compensated. She said:

So then we spent, as a college and university community – and this is all across New England – the whole next year trying to figure out how we could demonstrate to NEASC that these high school teachers were our adjuncts. We weren’t in a position to pay them because we weren’t collecting any tuition or revenue. But we had to prove that indeed they were employees... And they [NEASC] said if they’re not even your employees, how do you know what they’re doing? That one question just drove everybody witless.
Nancy suggested that NEASC did not understand the intrinsic motivation of the high school teachers.

Selena, Beth, Sue, and Nancy all indicated that, in some cases, the colleges have been unable to offer a course because they could not find a qualified instructor. Selena described how two faculty members took turns traveling to one remote area to teach one course when a qualified instructor could not be found at that site. Nancy concluded that as a result of strict instructor qualifications, rural students do not have the same access to DE programs as students in urban areas, where finding a qualified instructor is not as much of a challenge. In these instances, finding qualified instructors seems to serve as a gatekeeper to DE access.

Selena explained that when they do have community college faculty members that are qualified, it is sometimes difficult to persuade them to teach within a high school or mixed student setting. She did not seem to agree with the strict guidelines for teacher qualifications. Selena noted that finding the balance between academic rigor and supporting students who may not be quite ready for a college experience is a challenge for all classrooms, regardless of whether they have high school students in them. Furthermore, even with a review of a syllabus and consistency in textbooks, she felt that community college leaders really do not know what is going on in a classroom unless there is a peer review process.

All of the DE instructors interviewed held master’s degrees in their content areas, which included science, language arts, and mathematics. For technical programs, community college leaders explained that all adjuncts and DE high school instructors held master’s degrees in their field or state and national level certifications that are
comparable to certifications held by community college faculty members. These strict requirements for qualifying as a community college faculty member had some unintended consequences, according to the participants. For example, when I asked Deanna how she got involved in teaching a DE math course, she replied, “I was the only one in the math department that had their [community college required] master’s degree, so it kind of fell on my shoes...But I enjoy the class and I love teaching it.” Brad described a similar situation, and both teachers noted that as a result of teaching the DE course during the school day, they were unavailable to teach other courses. In a school with limited resources such a situation has been challenging at times when their skills might be needed to teach regular high school classes.

**Funding**

Most participants were hesitant to discuss funding, but acknowledged that the DE programs do incur a cost to the community colleges. While state-level funding streams do support these programs, all DE leaders (Nancy, April, Lynn, Beth, & Selena) indicated that their individual colleges absorb the costs of additional DE students when the funding streams are exhausted. Beth described a pattern reiterated by many participants:

The State does set aside some funding for us to receive half of the tuition that we can get reimbursed for. But those numbers are very limited as to what we can receive... and when I put in the numbers, we were well above what we were allocated for. So, the college actually ate the cost for those tuition and fees.

Many participants referred to the process of absorbing the costs as “eating” them. Selena and Nancy offered a similar sentiment, noting that these programs have real costs. Nancy gave some specific examples of these costs, including faculty pay, student support
services, equipment, and establishing and maintaining transcripts. Selena and Nancy also described how, despite the recession and budgetary crises, the colleges continued to make huge investments in DE programs, while not getting comparable monetary returns. Nancy quipped, “The colleges obviously weren’t in it to recover their funds.”

Because funding is limited, Lynn described how she maximizes the financial resources available:

I want to very strategically use the limited number of courses I have. There’s a budget for them, but I want to use those to make sure that I am maximizing their impact... I don’t want kids taking two. I want to make sure that I’m giving those [courses] to as many kids as I can... So I’d rather say that every kid gets one, but I’m serving more students.

The impact of funding limitations also extended to staffing. April described how some DE coordinators work part-time on DE programs, and part-time serving other roles within the community college. Similarly, one DE coordinator in a rural area I contacted replied with an automatic email indicating that, due to budget constraints, her position had been reduced to half time and emails would be returned only in urgent situations.

Available financial resources also varied at each high school. As such, student access to DE courses was affected. Michelle described how, at one point, the principal investigated the feasibility of offering a community college English composition course at their high school during the school day. According to Michelle, “In order to get [specific community college] credit, the teachers would need to buy entirely new books, and it was just too expensive... That’s why they chose not to move forward.” Eventually, the high school withdrew from the process of establishing the proposed DE course.
Conversely, Deanna described the process at her high school, which is currently offering DE courses during the school day, “We purchased all the books for the students, so that the students wouldn’t have to purchase them...We didn’t want them to... not be able to take the course because they can’t afford the books.” However, Deanna indicated that the textbooks are now outdated. Although she has requested the new version as part of the budget cycle, she added, “I don’t know how that’s going to play out.”

Jen, who relayed the vast differences between the two public high schools she worked in, also described the impact of financial resources on student access:

At [my former high school] we covered everybody’s fees, we covered textbooks for students who were free and reduced lunch. Here, [at my current high school], students have to pay for their own fees and they have to pay for their own books because we don’t have the budget. So I think that does naturally limit who’s going to seek out those classes.

Selena broadly referred to these funding challenges as a gatekeeper for student access.

Even when students are offered a course for free, a $150 book and transportation back and forth to the high school once per week may be prohibitive for some families. Selena explained, “I don’t know that we have broken through that yet. We are trying with all of the different ways of delivering, but I don’t know that we’ve done that.” April shared that students have informed her they are unable to purchase the textbook for the class. She added, “We don’t have any additional funding to reach out to them that way, so we pretty much have to send them back to the high school to see if there’s anything that can happen.” Similarly, Selena remarked, “Where does that money keep coming from? Especially to some of these areas ... they just don’t have it.”
High School Students

Participants noted numerous challenges in working with the high school student population. In this way, the perception that some high school students are not ready for college-level work seemed to be detrimental to DE programs as a whole, despite the well-meaning efforts of high school and community college leaders. April claimed, “The challenges that I would say there are, is just, high school students are high school students.” Issues included (a) lack of awareness and interest in DE programs, (b) competing opportunities and commitments, and (c) student attrition. Each of these issues is discussed, in turn, below.

Awareness and interest.

Michelle described the difficulty in reaching out to students to make them aware of and interested in the opportunities available to them. She indicated that this awareness was an issue at both of the high schools at which she had worked. Although the guidance counselors made presentations to students at the end of the sophomore and beginning of their junior year, she said students still indicated that they were unaware of the DE program opportunities. Sue also shared that despite announcements, posters, and assemblies to promote DE opportunities with students, students at her school seemed uninformed of the DE courses offered. Brad had similar experience and shared, “I’ve been having some issues... just trying to drum up enough support to make the program.”

Even when students are aware of DE opportunities, they may not be interested. Deanna explained, “The biggest motivation you have at the high school level is they want to get out of classes early (laughs).” She notes that while some students have the grades necessary to sign up for a DE course, they “don’t really care whether they take a course
or not. But if it gets them out of school early, then they’ll say, ‘Oh yeah, go ahead, I’ll do it.’” Brad said, “An issue is trying to get kids to step up at the end of junior year.” Michelle offered a similar perspective, noting that some students liked their high school classes and just did not want to go through with the process of taking a DE course.

Michelle also talked about an effort at her school to try offering a college algebra course during the school day. Recruitment for this course was specifically targeted toward students from immigrant populations. She explained, “We just didn’t get enough interest... I don’t know if they were intimidated by the work... or just weren’t ready for the work.” She explained that while students expressed curiosity, they were happy with their schedules and did not want to change them to add a college course.

**Competing opportunities and commitments.**

Many participants noted how student schedules, including commitments such as extracurricular activities and part-time jobs, interfered with their ability to participate in prerequisite testing and enrollment in a DE course. April and Michelle described how there were challenges in scheduling prerequisite tests while working within students’ high school schedules. This theme was consistent for students in both urban and rural areas, and applied to conflicting demands of students after school as well. For example, Beth noted that some students need to work to support themselves and their families, and the time they spend at work is time they do not have to take a DE course. Similarly, Jen described how, at a high school she worked at previously in a rural area, a college orientation program enabled students to visit the campus, meet with an admissions officer, and tour the campus. However, she said, “you had kids who had to go to work or had to go to practice, and all of those things always took precedence.”
Even when programs are offered at the high school during the school day, participants described the difficulty in obtaining enrollment numbers high enough to offer a DE course. Michelle, Jen, Melissa, and Brad said it was difficult to compete with existing, established courses. Brad remarked, “If you don’t have enough people sign up, they don’t run the course,” noting that his course was not offered this year due to low enrollment. In the large, urban high schools with many diverse course offerings, Michelle described students as having “an overabundance of choices.”

**Student attrition.**

Even when initial barriers of awareness and scheduling are overcome, enrollment can serve as another gatekeeper. April explained that sometimes students express interest in a class, the DE leader and high school guidance counselor conduct testing and obtain transcripts, and they help the students complete the paperwork to enroll them in the class. Afterwards, however, “they kind of change their mind, so there’s been a lot of... work to get to that point and then it’s gone.” Lynn also indicated that student attrition was a problem, so she accepts many more students than are needed to fill a program.

Despite good intentions and well-meaning DE leaders, an inherent challenge seemed to be that high school students were navigating two systems simultaneously. The perception of this disconnect was expressed by Brad, Beth, April, Michelle, and Selena. Brad shared that although he explains to students that failing a DE course has a permanent impact on their college transcript, some of his students are not ready to accept that level of responsibility. He added that, each semester, there is at least one student who does not perform well or drops the course. April and Lynn also commented that some students change their minds about the course after drop date, so they must withdraw from
the course and will have a “W” on their transcript. April noted that, while this is not significant for students who do not enroll in a community college after graduation, this withdrawal could affect students who do choose to matriculate. Furthermore, this withdrawal is recorded by the college and affects the college’s overall attrition rate. While students are given a schedule and a copy of the withdrawal form when they enroll in a DE course, April explained, “it’s not as if they’re getting somebody one on one walking through every step with them.”
CHAPTER 5

FINDINGS-QUANTITATIVE STRAND

In this chapter, I provide an overview of the quantitative results of this study. In addition, qualitative responses from student’s open-ended survey responses are included as they elucidate and supplement the quantitative data. More specifically, in this chapter I address the research questions:

1) What is the relationship between demographic factors such as gender, race/ethnicity, socioeconomic status, high school academic record (including GPA and standardized test scores), parental education level, and a student’s rural status as defined by the MCCS (Maine Community College System) Rural Initiative (Maine Community College System, 2007b) and student access to dual enrollment (DE) programs at Maine’s community colleges?

2) What is the relationship between the structure of Maine’s community college dual enrollment programs (purpose, location, instructor, and program configuration) and students’ learning experiences (course rigor, student-faculty relationship, and college aspirations, DE course grade) as measured by a student survey?

In order to determine the relationship between the structure of Maine’s community college DE programs and student’s learning experiences, I focused primarily on two course locations: courses on a college campus or at a satellite site that include both matriculated and DE students, and courses at a high school during the school day that include high school students only. These courses are referred to by the MCCS as
traditional DE and concurrent enrollment, respectively (Pour, 2016). There were no students enrolled only in online courses, so this course format is not discussed here.

**Demographic Factors and Student Access**

The overall number of DE courses as reported on the student survey is summarized in Table 4 below. In order to initially represent general patterns of student DE course taking, the table includes courses at community colleges and public and private four-year colleges. The left-hand column represents the total of number of students, while the right hand column indicates the number of courses in which they students were enrolled. For example, 18 students reported that they were enrolled in only one course.

<table>
<thead>
<tr>
<th>Number of Students</th>
<th>Number of Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>4 or more</td>
</tr>
</tbody>
</table>

All 39 students indicated on their survey that they felt it was not difficult to enroll in their DE course. More than half of these students (21) enrolled in more than one DE course, which included courses within the MCCS and at four-year colleges.

In order to determine the relationship between demographic factors such as gender, race/ethnicity, SES, high school academic record (including GPA and standardized test scores), parental education level, and a student’s rural status as defined by the MCCS Rural Initiative (Maine Community College System, 2007b) and student access to DE programs at Maine’s community colleges, students were asked to report
demographics on the student survey. Demographic factors of the student survey participants are summarized in Table 5.

**Table 5. Demographics of Student Survey Participants**

<table>
<thead>
<tr>
<th>Demographic Factor</th>
<th>Number of Students By Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>22 Female, 17 Male</td>
</tr>
<tr>
<td>SES</td>
<td>29 Do not receive free or reduced lunch, 10 Receive free or reduced lunch</td>
</tr>
<tr>
<td>High School GPA*</td>
<td>20 A+, A, or A-, 18 B+, B, or B-</td>
</tr>
<tr>
<td>Parental Education Level</td>
<td>10 first generation, 29 not first generation</td>
</tr>
<tr>
<td>Student’s Rural Status</td>
<td>26 Urban, 13 Rural</td>
</tr>
</tbody>
</table>

*One student did not respond, so the total respondents does not equal 39.*

Students were also asked to indicate their race/ethnicity. Thirty-five students selected White, three students selected American Indian or Alaskan Native, and one student selected Black or African American.

**Gender, Race/Ethnicity, Socioeconomic Status, and Access**

According to the Maine Community College System (2016c), of the 8,253 students served by the Early College for ME program since its inception in 2003, 54% were women and 46% were men. These numbers are consistent with the quantitative survey data, in which 44% of students were men and 56% were women. However, the Early College for ME program represents only one of many DE programs, and data from other programs are not available.

Similarly, the data from the 39 surveys represent a small fraction of the student DE population so data on race/ethnicity and SES were inconclusive. Due to the small sample size and lack of supplemental data the null hypotheses $H_0$: There is no significant relationship between gender and access to dual enrollment programs at Maine’s
community colleges”, H\textsubscript{02}: “There is no significant relationship between race/ethnicity and access to dual enrollment programs at Maine’s community colleges”, and H\textsubscript{03}: “There is no significant relationship between socioeconomic status and access to dual enrollment programs at Maine’s community colleges” are neither supported nor rejected.

**High School Academic Record and Access**

While all 39 students felt it was not difficult to enroll in their DE course, 33 of these students had to meet certain requirements. While 18 students indicated they had to meet only one prerequisite, 16 students had to meet two or more prerequisites. Prerequisite data are summarized in Table 6 below, and include the total number of students that indicated they had to meet each prerequisite in order to enroll. Because students may have had to meet multiple prerequisites, the total number of student responses (51) is greater than the total number of student surveys (39).

<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>Number of Student Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Test</td>
<td>17</td>
</tr>
<tr>
<td>Complete an application</td>
<td>14</td>
</tr>
<tr>
<td>Had to have a minimum GPA</td>
<td>8</td>
</tr>
<tr>
<td>Had to take another class first</td>
<td>6</td>
</tr>
<tr>
<td>Do not know/remember</td>
<td>6</td>
</tr>
</tbody>
</table>

In addition, as shown in Table 5, 38 student participants reported that their high school grades were generally B or better. Twenty students had grades within the “A” range, and 18 students had grades within the “B” range. While too few participants existed to make statistical conclusions, the data suggest there may be a relationship between high school academic record and access that could be explored further.
Parental Education Level and Access

Based on student survey data alone, only 25% of students were first-generation students. However, according to Maine Community College System (2016c), of the 8,253 students served by the Early College for ME program since its inception in 2003, 53% were first-generation college students. This program is designed specifically for students who “need additional support” (Maine Community College System, 2016d). In addition, schools may consider financial need and first-generation student status (Maine Community College System, 2016d). Because data are not available on the first-generation status of students in other DE programs within the MCCS, the null hypothesis is neither supported nor rejected.

Student’s Rural Status and Access

A key informant within the MCCS (personal communication, March 14th, 2016) provided a supplemental dataset which was analyzed in order to gain insights into students’ rural status and access. Table 7 shows the total concurrent enrollment for Maine students each year from the fall of 2013 through the fall of 2015. Data are further disaggregated by students’ rural status as defined by Maine Community College System (2007a). Concurrent courses include courses in which high school students earn college credits for courses taken at their high school during the school day.

Table 7. Concurrent Dual Enrollment Courses within the MCCS

<table>
<thead>
<tr>
<th>Year</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-14</td>
<td>1294</td>
<td>933</td>
<td>2227</td>
</tr>
<tr>
<td>14-15</td>
<td>1409</td>
<td>1081</td>
<td>2490</td>
</tr>
<tr>
<td>15-16</td>
<td>1184</td>
<td>997</td>
<td>2181</td>
</tr>
<tr>
<td>Total</td>
<td>3887</td>
<td>3011</td>
<td>6898</td>
</tr>
<tr>
<td>Percent of Students</td>
<td>56%</td>
<td>44%</td>
<td>100%</td>
</tr>
</tbody>
</table>
According to the United States Census Bureau (2012), most counties in Maine are predominantly rural. Only Cumberland and Androscoggin counties have more than 50% of their population living in urban areas. Data from the Maine Department of Education (2012-2013) indicate that the total public high school enrollment of high school juniors and seniors in 2013 was 8,494 in urban areas (Cumberland and Androscoggin Counties combined), and 19,393 in rural areas (all other counties combined). This dataset represented the most recent data available on student enrollment by county from the Maine Department of Education. While only approximately 30% of the population of DE eligible students (juniors and seniors) in the State of Maine lived in urban areas in 2010, DE students from urban areas comprised about 44% of the concurrent enrollment population.

Table 8 below shows the concurrent enrollment numbers disaggregated by each of the seven colleges within the MCCS. In addition, enrollment numbers were further broken down to show whether students that are enrolled in these DE courses live in rural or urban areas.

<table>
<thead>
<tr>
<th>College</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMCC</td>
<td>726</td>
<td>482</td>
<td>1208</td>
</tr>
<tr>
<td>EMCC</td>
<td>700</td>
<td>380</td>
<td>1080</td>
</tr>
<tr>
<td>KVCC</td>
<td>916</td>
<td>886</td>
<td>1802</td>
</tr>
<tr>
<td>NMCC</td>
<td>495</td>
<td>329</td>
<td>824</td>
</tr>
<tr>
<td>SMCC</td>
<td>598</td>
<td>546</td>
<td>1144</td>
</tr>
<tr>
<td>WCCC</td>
<td>179</td>
<td>0</td>
<td>179</td>
</tr>
<tr>
<td>YCCC</td>
<td>273</td>
<td>388</td>
<td>661</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3887</strong></td>
<td><strong>3011</strong></td>
<td><strong>6898</strong></td>
</tr>
</tbody>
</table>

Some colleges in predominantly rural counties had higher concurrent enrollment numbers than colleges in urban counties. For example, KVCC has the highest rural enrollment of
In addition, the only college that had higher enrollment of urban versus rural students was YCCC. These data suggest that for concurrent enrollment classes only, the null hypothesis $H_0$: There is no significant relationship between students’ rural status as defined by MCCS rural initiative (Maine Community College System, 2007b) and access to dual enrollment programs at Maine’s community colleges is neither accepted nor rejected but point to a possible relationship that could be further explored with a larger dataset that included traditional DE courses. Community colleges within MCCS seem to be reaching both rural and urban students via the concurrent enrollment programs.

Student survey data as shown in Table 5 indicated that 26 participants were from urban areas and 13 were from rural areas. Fifteen students had to travel to attend their dual enrollment course at either a satellite site or college campus. Commuting times ranged from 5 to 90 minutes; however, only three of these students indicated that their commute was challenging. These students cited traffic, time constraints, and road construction as reasons their commutes were difficult. Bart, a college graduate and key informant, who enrolled in all DE courses his senior year of high school explained:

I took classes at [four-year college] and [two-year college]... I had three days a week that I had to commute to both. I lived in between both so I had to commute in a triangle with total commute time of 2.5 hours; since my car wasn’t in shape enough to take the highway I had to drive [back roads]. I spent $200 a week in gas, since gas was over $4 a gallon at the time.

Another student with a 30-minute commute wrote, “For my first course I had to schedule two study halls for my last two blocks to ensure I could leave early so that I could get to class on time.”
Course Structure and Student Experiences

The research question guiding this portion of the study included:

2) What is the relationship between the structure of Maine’s community college dual enrollment programs (purpose, location, instructor, and program configuration) and students’ learning experiences (course rigor, student-faculty relationship, and college aspirations, DE course grade) as measured by a student survey?

In order to address this question, data were initially disaggregated by course location, which included: on a college campus, on a high school campus or satellite site outside of the normal school day, and on a high school campus during the normal school day.

Two students indicated they were enrolled in hybrid courses, defined in the survey as courses that were both on-line and on a college campus. However, comments from these students indicated that lectures for the course were conducted on campus, and the online component was only for the submission of work. As such, the “hybrid” course data were included with data from students “on a college campus.” None of the students were enrolled in only online classes at a community college. The two students who indicated they had enrolled in online only courses (at a four-year college) also took community college classes at either the high school or college campus. Although a total number of 39 students participated in the survey, 22 students enrolled in at least two courses. Of the 22 students that enrolled in at least two classes, 10 indicated that one of their courses was from a four-year college or university, which is why course totals are higher than the number of survey participants as shown in Table 9.
Table 9. Number of DE Courses by Location

<table>
<thead>
<tr>
<th>Course Location</th>
<th>Course #1</th>
<th>Course #2</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Campus</td>
<td>13</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Satellite Site</td>
<td>13</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>High School</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Online</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>39</strong></td>
<td><strong>22</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

Note: Includes data from 10 students who also attended a four-year university for one of their courses.

**Course Structure and Course Rigor**

The comparison of course structure and rigor addresses null hypothesis one (H01): There is no significant relationship between the structure of Maine’s community college dual enrollment programs and course rigor. For these findings, only student responses specific to community college DE courses were included, meaning that responses specific to four-year institutions were excluded. Because courses offered on a college campus and at satellite sites are both considered by MCCS to be a college course due to the mix of high school and matriculated students, these data were merged during this phase of analysis for a sample size of 34 total traditional DE courses (hereafter identified as “on a college campus”). Sixteen courses were concurrent enrollment courses, located at the high school, taught by high school teachers, with high school students only during the school day. Because 11 of the 39 students participated in more than one community college course, data were initially analyzed separately for each course, not each student, which explains why the number of community college courses included in these analyses (51) is greater than the number of students (39). At the same time, individual students were assigned an identification number so that responses from the same student enrolled in two different courses could then be compared to see if their perceptions differed by course.
Several different survey questions were utilized to gauge student perceptions of factors related to rigor. Students were asked whether they felt their college course was challenging, if there were different expectations between the DE course and high school courses, and if they ever needed help in their course. Responses were compared between the two primary course structures: courses outside of the school day taken on a college campus or satellite site and concurrent enrollment courses (during the school day at a high school). Data are reported as a percentage of total student responses, as summarized in Table 10 below.

Table 10. Student Perceptions of Rigor

<table>
<thead>
<tr>
<th>Course Structure</th>
<th>Challenging Course</th>
<th>Different expectations</th>
<th>Needed help</th>
</tr>
</thead>
<tbody>
<tr>
<td>College campus or satellite site</td>
<td>65</td>
<td>74</td>
<td>41</td>
</tr>
<tr>
<td>High school during school day</td>
<td>75</td>
<td>81</td>
<td>81</td>
</tr>
</tbody>
</table>

Note: Data are analyzed by courses, not by students. Responses from students enrolled in two courses were counted twice because course structure and perceptions may have varied by course, not by overall DE experience.

The only notable quantitative differences are the percentage of students who indicated they needed help in the course, in which nearly twice as many students in courses on the high school campus indicated they needed help than students on a college campus. These findings are related to the student-faculty relationship and are discussed below within null hypothesis number two. Due to a small sample size, the null hypothesis that there is no significant relationship between the structure of Maine’s community college DE programs and course rigor is neither accepted nor rejected. However, the quantitative survey results and open-ended responses suggest that there may not be a relationship between DE course structure and course rigor.
Specifically, several themes emerged that were related to rigor, irrespective of course structure. Students indicated that DE courses as compared to high school courses have higher expectations, have heavier workloads, require better time management skills, and require more self-motivation. These factors are discussed individually, in turn, although these themes did overlap frequently. For example, one student on a college campus summarized:

The three main differences between my college class and high school are the length of classes, the time of class, and the workload. For one singular class in high school you have an hour-long class with in class time to do work. You go everyday and don’t need much time to complete homework. However, the difference between that and college is my class is three hours long. But this class also is only once a week. With these differences usually you would get more homework because you have more time to do it. The big way I manage the difference is to work in moderation so I can get my work done over a reasonable amount of time while also completing it before the deadline.

Two students enrolled in courses on a high school campus and four students enrolled in courses on a college campus shared the perception that their DE course(s) had higher expectations than their high school classes. For example, one student on a college campus indicated, “It was a very interesting course to me and that helped with easing into a college workload. The amount of coursework and long reading assignments set the bar high, showing me that I had to apply myself more so than in high school for these college courses.” Similarly, students on the high school campus indicated that the work was more challenging and required more responsibility.
As a result of higher expectations, students indicated the workloads in their DE courses were higher than their high school classes. One student on a college campus also explained that the nature of the work is different, “One of the biggest differences is not having 'busy' work. The work is done for a reason. If there is no work that needs to be done, it isn't given.” Eight students in courses on a high school campus and three students in courses on a college campus described the workloads with terms such as “tougher,” “harder,” and “more challenging.” One student on a college campus explained, “It’s more educational and demanding. It was very difficult, opened up my eyes.” At the same time, a student on a high school campus shared, “The work load is different. Course #1 gave less homework but the homework given was more challenging and time consuming. Course #1 also expects more responsibility than a high school course.”

All students who had graduated from high school indicated that their participation in a DE course helped prepare them for college. Specifically, one student explained, “I also felt more prepared for the classroom environment.” Other students indicated that their courses helped them become more organized and prepared them for the college workload. Another college graduate who took a course on a college campus admitted, “It was stressful, sure, but I don’t regret it, I hated [it at one] point sure, it was a lot of work, but it wasn’t a negative experience.”

High school students and graduates noted that they adapted to their more difficult workloads by spending more time and effort outside of class for their DE course(s). Students indicated that their DE courses required more time and they had to adjust to these increased demands by managing their time better. Three students on a high school
campus and three students on a college campus specifically referred to the additional time required by their DE course. Unlike their high school classes, class time in DE courses was not available for homework completion. One student on a high school campus wrote, “I manage this by making time specifically for my Dual Enrollment class every night to study and do homework.” Similarly, a student on a college campus indicated, “It definitely required more studying than previous classes due to the more intense subject matter.”

Twelve students expressed that they had to develop time management skills to adapt to their DE course. Six of these students were in classes on a high school campus and six were in classes on a college campus. Again, there seemed to be no difference between course location and the necessity of time management skills. A student on a high school campus shared, “Course #1 was more difficult and took more time outside of school than my other high school courses. I had to manage these differences by spending a lot more time on homework and not procrastinating.” Likewise, a student on a college campus indicated, “I have a better idea of what to expect in college, it also helped me manage my time more.”

The theme of self-motivation was widespread, and included related themes such as self-discipline, responsibility, and independence. Thirteen students referred to those related themes in the survey, with three of the students referring to it more than once. Nine students on a high school campus and four students on a college campus shared the perception that DE courses simultaneously required and imparted self-motivation. One student on a high school campus exemplified this theme when she wrote, “The level of
learning and amount of self-motivation required are much higher than regular high school classes.”

Students seemed to feel that while their professors or teachers were there to help, they were allowed to learn on their own and were responsible for their own work. For example, one student on a high school campus indicated, “If I need help then I can just ask. But other than that it allows me to teach myself while still learning from my teacher at the same time.” Furthermore, students also suggested that they were held accountable. Another student on a high school campus shared:

Course 1 has more deadlines and is a more self-dependent class. I have to study and make deadlines for myself so I get everything done on time. We have more essays due... and there are no excuses so it teaches you to be responsible. The more responsible you are pretty much determines the grade you achieve.

There were no discernable differences between responses from students based on course location. Whether students were enrolled in courses on a high school campus (concurrent enrollment) or on a college campus (traditional DE) seemed to have no impact on student responses, which generally shared the theme that DE courses were more challenging than high school courses. For example, a student on a college campus indicated:

The college courses demanded more self-discipline than the high school courses, they wouldn't remind when coursework was due and would rely heavily on self-reading to answer test questions. This was a great introduction into making sure I could learn independently, and I had to be diligent about ensuring I was on track with my course work.
Course Structure and the Student-Faculty Relationship

The student-faculty relationship was intended to address the null hypothesis (H₀₂): There is no significant relationship between the structure of Maine’s community college dual enrollment programs and the student-faculty relationship. From the data I learned that the student-faculty relationships are complex. It was not possible to determine how many professors were college professors, high school teachers, or both. This is because some students in the same course identified their instructor differently. For example, one high school teacher who teaches a DE course during the school day also serves as an adjunct for that same course and community college in the evenings. Some students listed him as “high school teacher,” some as a “college professor,” and others listed “both.” In another example, an adjunct professor at a satellite site was also a high school teacher during the school day. Students also identified her by all three categories (high school teacher, college professor, both). This finding suggests that students in these situations do not perceive clear boundaries that distinguish between high school and college level faculty.

Two findings emerged from analysis of data related to course structure and the student-faculty relationship. First, there were notable differences between the structure of the DE course and the student-faculty relationship. Second, despite different course structures and student-faculty relationships, student perception of course rigor did not seem to vary. Despite these findings, because I did not have a large enough sample size to calculate a p value, the null hypothesis that there is no significant relationship between course structure and the student faculty relationship is neither supported nor rejected.
To elucidate further, initially, the survey question that asked students if they ever needed help in their DE course was designed to address null hypothesis #1: There is no significant relationship between the structure of Maine’s community college dual enrollment programs and course rigor. However, responses to this question proved relevant when considering the student-faculty relationship. While the majority of students on campus and at the high school (65% and 75% respectively) felt their courses were rigorous, 41% of students on campus asked for help compared to 81% of students within a high school. These findings suggest that students are less likely to seek help in a DE course on a college campus than in a DE course at a high school.

Student open-ended responses helped to support these findings. There seemed to be more of a professional relationship between students and faculty in the courses offered on a college campus, versus a nurturing relationship between students and teachers in a high school setting. One student at a satellite site wrote, “It was more challenging because I felt like the teacher was pushing me because she knew I had room to improve. It wasn't a difficult transition for me though. I didn't really have to do much to manage the difference.” Four students enrolled in courses on a college campus described how the college professors coddled them less than their high school teachers. For example, one student wrote:

The high school ones were very strict... you had teachers their practically holding your hand and giving you a number of opportunities not to fail, its like they wouldn’t let you. As in college you are doing it for yourself, you either do the work or you don't and fail, there’s no figurative net to catch you if you fall, and
that’s how it is out in the real world. If you want something you have to work for it, and really want it.

This perception was described by another student in this way, “It shows you that you must take action in class, the teacher won’t baby you.”

Another student suggested that while her professor made it clear assistance was available if needed, there was less help and less time in her on-campus class that met only once per week. As such, there was less of a student teacher bond. She wrote, “You see high school teachers everyday.” This did not seem to be due to less rigor within the high school DE courses, but more attributable to the relationship high school teachers were able to build with their students. For example, a student in a high school DE course noted, “The expectations from the teacher are much higher than the normal classes. He challenges us, while at the same time guiding us.”

**Course Structure and College Aspirations**

Two survey questions were designed to address the impact of course structure on college aspirations. Directly, students were asked if their experience in the DE course impacted their desire to attend college. Indirectly, students were asked if they felt better prepared for college. Results are shown in Table 11 below.

<table>
<thead>
<tr>
<th>Course Location</th>
<th>Experience impacted desire to attend college</th>
<th>Feel better prepared for college</th>
</tr>
</thead>
<tbody>
<tr>
<td>College campus</td>
<td>47</td>
<td>94</td>
</tr>
<tr>
<td>High school</td>
<td>41</td>
<td>81</td>
</tr>
</tbody>
</table>

Note: Data are analyzed by courses, not by students. Responses from students enrolled in two courses were counted twice because course structure and perceptions may have varied by course, not by overall DE experience.
The null hypothesis is neither supported nor rejected due to a small sample size. However, based on percentages alone, it would appear that course structure does not influence college aspirations. Nonetheless, three themes related to aspirations emerged from the student open-ended responses. These themes, including an enthusiasm for DE coursework, variation in course experiences, and unanticipated consequences reveal that the variables are more complex, as I discuss next.

**Enthusiasm for DE coursework.**

Three students on a college campus specifically referred to a desire to learn in their DE course, albeit in different ways. One student focused on the idea that the matriculated students in the course wanted to learn and were paying for their education. Another student wrote, “I'm excited to take more courses next semester and I'm more excited for my college experience.” In addition, another student described the classroom culture of the on-campus course in which assignments were collected online:

> In general the format and classes seemed more casual than in high school. Also, the curriculum is more based on what the teacher thinks is important than the school, allowing for a more passionate and interesting class. This class was a two and a half hour class once a week, allowing for more information to be learned at once and led to a better classroom culture that allowed for questions to be asked and more resources shown to enhance learning. Also, we sometimes got out early :) 

The student quote above alludes to the idea of freedom within the DE course, in that case freedom of curriculum and also by being allowed to leave regardless of “seat time.”
Bart, a college graduate and key informant in this study, described the importance of freedom he found in his DE courses. He explained that when he was in high school, he was immature and often got into trouble with his teachers. In retrospect, he feels like he acted out because high school was not challenging enough. He described high school this way, “It was a joke” and was “prison-like.” Dual enrollment courses, for him, offered useful knowledge, an academic challenge, and freedom. Bart shared that in his first day of class on a community college campus, he asked to use the bathroom. Although he still felt he was immature, Bart did not act out in college. He said, “The environment at college was sacred.” Overall, he enjoyed and respected all of his professors.

Two other students described examples of good pedagogy in their courses on a college campus, which seemed to impact their enthusiasm for the DE courses. Good pedagogy included authentic examples and relevant assignments. One student shared:

Course #1… was structured very differently [than high school]. I felt that based on the low amount of gradable material, the class was based more on individual learning than grades. Also, my professor had a PhD in psychology, giving her not only a more broad understanding of the subject than the psychology teacher at the high school, but a more specialized history of working in clinics and in schools across the country. Every topic she covered had a story, almost all of them personal. These stories were fascinating and different, and helped to make the class more interesting and helped to put the subject into a better perspective. Though the theme of enthusiasm for DE coursework was not as abundant in student surveys from students in courses on the high school campus, two students on a high school campus did describe positive perceptions. For example, one student
indicated, “This class has taught me a lot and I have already learned more from this class than I have in any other science class throughout high school.” Another student focused on the wider range of opportunities, “My range of options for courses increases dramatically with DE courses, and I can take courses that genuinely interest me and relate to what I want to study in college or do for a career.”

**Variation in experiences.**

When students were asked to explain why they do or do not feel better prepared for college because of their DE experience, responses varied widely. For students on a college campus, 19 out of 34 responses related specifically to the benefits of experience, such as experiencing college, experiencing the college workload, and experiencing college expectations. For these students, the on campus component seemed important. One student explained, “The course provides a small sample of actual college classes without the overwhelming pressure of having multiple courses.” Similarly, students described how it gave them an opportunity to get their “feet wet,” or get a “small look.” Students also referred to how they understood the requirements, structure, workload, classroom environment, and schedule of college courses because of their DE coursework on campus.

One high school graduate, who attended a DE course on a college campus, wrote, “I would say DE helped me very much in my college career. I was able to enter college with some of my general courses already completed, which allowed me to take more elective courses in my four-year program and expand my knowledge of my major further.” One student described the impact of their DE course generally, “Taking this college class allowed me to immerse myself in college life and know that I know what
classes are like. I feel more confident that I will do well and am prepared for college.”

Another student described his anticipation of the college experience, “The whole transition from high school to college is the hardest thing to cope with. College classes will make that transition a little easier because you were exposed to it before you left for college.”

On the other hand, students enrolled in courses on a high school campus suggested different reasons why they felt they would be better prepared for college. Six students referred to the previously described theme of responsibility, and seven described the benefits of experiencing the structure of a college course. One student felt the course was “just like” a college class, while two students explained that their teacher-led classes were “similar” to a college class, while acknowledging the fact that their class was located within a high school. A student on a high school campus explained:

I know my teacher had a fairly strict set of guidelines for instructing the class similarly to how it would be taught in a college setting (weight of grades, type of assignment, format of tests, etc.), and showing proficiency in that class indicates to me that I would be proficient in other college classes. I feel better prepared because the structure of a class is similar to how a college class would be run.

As indicated in Table 11, 14 out of 17 students (81%) on a high school campus perceived their DE experience as beneficial in preparing them for college. Just as one student on a college campus referred to having more confidence, a student on a high school campus shared a similar sentiment, “Completing this college level class makes me feel confident that I will be able to complete other college level courses.” A nother student
described how she felt that she would be ahead when she went to college because she was able to take a DE course in a field in which she is interested in majoring.

Eight students described specific skills they had acquired due to their DE course; five of these students cited improved writing skills. For example, one student on a high school campus noted,

It is a strict class and I need to figure things out on my own, it's a class where we are expected to be independent and that will prepare me for college. I feel better prepared because of the writing piece. We have a different expectation when it comes to our essays.

Similarly, a student on a college campus explained, “I feel better prepared for college because my class taught me how to write in response to academic writing. I have experienced that this skill has been very helpful in the college class I am currently taking.” In this example, a skill learned in one DE course seems to be useful in another DE course. Other skills identified by students included note taking, study skills, reading comprehension, test taking strategies, and learning specific content. One student seemed to imply that they appreciated the applicability of their learning. This student, on a high school campus, remarked, “I like how we are learning true, useful writing skills instead of always doing vocab, reading, and grammar.”

Unintended consequences.

On the other hand, 3 out of 17 students (29%) in courses at the high school (concurrent enrollment) indicated that they did not feel better prepared for college because of their DE experience. Two of these students explained their perceptions. One student wrote, “I feel it's not really showing me what college will really be like.” Another
student elaborated, “I don’t feel prepared for college because the class is in my familiar school with familiar people. I think the difficult thing about college will be the transitioning in setting more than the school work from what I have experienced.”

In another example of an unanticipated consequence, Bart had so many college credits that he entered a university as a sophomore in an engineering program. He only needed his major courses in order to graduate because he had fulfilled his general education requirements via DE courses. He shared, “When I was in college, it wasn’t in my mindset that it was new and challenging. I took it for granted because I had already made the [high school to college] transition.” He said he was a much better student when he was a high school student in a college class than when he was a college student in a college class. Bart graduated from college in only three years, and conceded that he regrets this fast track. He admits that he made a trade-off: he missed out on the college experience in order to reduce his overall debt burden.

The majority of the quantitative and qualitative data from student open-ended responses seem to indicate that students enrolled in DE courses do, overall, feel better prepared for college. Student perceptions of college aspirations did seem to vary depending on whether the DE course was on campus or at a high school. Because the small sample size does not allow for statistical analysis, the null hypothesis is neither confirmed nor rejected.

**Course Structure and Student Grades**

Null hypothesis four (H_{04}) forwarded: There is no significant relationship between their DE course(s). Student survey data on their grades are summarized in Table 12.
Table 12. Student Grades in their DE Course(s)

<table>
<thead>
<tr>
<th>Course Location</th>
<th>A+, A, or A-</th>
<th>B+, B, or B-</th>
<th>C+, C, or C-</th>
</tr>
</thead>
<tbody>
<tr>
<td>College campus</td>
<td>23</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>High school</td>
<td>9</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Data are analyzed by courses, not by students. Responses from students enrolled in two courses were counted twice because students could have different grades in each course.

Due to the low survey return rate, I contacted a key informant within the MCCS (personal communication, March 14th, 2016) and requested data on student grades. Table 13 below was provided by the key informant, and includes only courses paid for by the Early College for ME (EC for ME) program, which are traditional DE courses (on a college campus).

Table 13. Student Success Rate in the Early College for ME Program (Historic Data including Spring 2015)

<table>
<thead>
<tr>
<th>College</th>
<th>Earned Credit</th>
<th>Did Not Earn Credit</th>
<th>Withdrew</th>
<th>Total</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMCC</td>
<td>187</td>
<td>72</td>
<td>12</td>
<td>271</td>
<td>69%</td>
</tr>
<tr>
<td>EMCC</td>
<td>350</td>
<td>97</td>
<td>33</td>
<td>480</td>
<td>73%</td>
</tr>
<tr>
<td>KVCC</td>
<td>256</td>
<td>55</td>
<td>21</td>
<td>332</td>
<td>77%</td>
</tr>
<tr>
<td>NMCC</td>
<td>119</td>
<td>18</td>
<td>8</td>
<td>145</td>
<td>82%</td>
</tr>
<tr>
<td>SMCC</td>
<td>235</td>
<td>80</td>
<td>35</td>
<td>350</td>
<td>67%</td>
</tr>
<tr>
<td>WCCC</td>
<td>55</td>
<td>10</td>
<td>10</td>
<td>75</td>
<td>73%</td>
</tr>
<tr>
<td>YCCC</td>
<td>203</td>
<td>66</td>
<td>30</td>
<td>299</td>
<td>68%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1405</strong></td>
<td><strong>398</strong></td>
<td><strong>149</strong></td>
<td><strong>1952</strong></td>
<td><strong>72%</strong></td>
</tr>
</tbody>
</table>

It was not clear from the information provided which years the data were collected. According to the key informant, 1,016 courses were paid for by the EC for ME program between the years 2010 through 2014. Therefore, these data must include courses provided to students before 2010. The key informant also indicated that the average successful pass rate for all students in the MCCS is about 70%.
Additional data were provided for the fall of 2014 and the spring of 2015. Table 14 reveals the most recent trends in the EC for ME program.

Table 14. Student Success Rate in the Early College for ME Program (Fall 2014 & Spring 2015)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Earned Credit</th>
<th>Did Not Earn Credit</th>
<th>Withdrew</th>
<th>Total</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2014</td>
<td>81</td>
<td>28</td>
<td>12</td>
<td>121</td>
<td>67%</td>
</tr>
<tr>
<td>Spring 2015</td>
<td>33</td>
<td>3</td>
<td>5</td>
<td>41</td>
<td>80%</td>
</tr>
</tbody>
</table>

Note: Although 249 courses were allocated for this program each semester, the 2014-2015 budget was curtailed.

Because the total number of students in each college was small, specific data for each college for the fall of 2014 and fall of 2015 were not included in the table above. However, data did vary widely between schools and between semesters from a low success rate of 35% to a high success rate of 100%.

Based on these data, it appears that students in the EC for ME program, on average, pass their courses at the same rate as matriculated students. However, because these data were specific for only one DE program, grades cannot be compared based on course structure. Because statistical analysis was not feasible, the null hypothesis, “There is no significant relationship between the structure of Maine’s community college dual enrollment programs and student grade in their DE course(s)” is neither supported or rejected.

Data vary significantly

According to the key informant, 1,016 of the courses were paid for by the Early College for ME program between the years 2010 through 2014. However, according to the MCCS website, the Early College for ME program began in 2003 and has provided DE courses to 8,253 students from its inception to the fall of 2015 (Maine Community
College System, 2016c). Based on these estimates, the MCCS would have offered at least 7,237 courses through the Early College for ME program between 2003 and 2010 (over a thousand courses per year). Yet, data provided by the key informant indicate that only 249 courses are allocated through this program each semester in the fall of 2014 and spring of 2015.
CHAPTER 6

MIXED METHODS ANALYSIS AND DISCUSSION

The mixed methods research question which guided the analysis of the findings is:

How do the perceptions of instructors and administrators of DE programs within the Maine Community College System (MCCS) relate to student access and learning experiences compare with student perceptions?

While mixed methods analyses can be offered in a separate chapter from the Discussion, per Creswell and Plano Clark (2007), data from the qualitative and quantitative strands of mixed methods studies can be compared, contrasted, and merged through discussion. As such, in this chapter I present the study’s discussion of findings as one that is primarily rooted in addressing the final research question of the study, or the mixed method research question.

The core methods of my study were qualitative, as the purpose was to describe (Merriam, 2002; Morse, 2003). As such, findings from the qualitative research strand were used as the foundation for the integration of both strands of the study. This was feasible because all findings that emerged from the quantitative strand aligned with qualitative themes.

This study filled a gap in the extant literature because while few studies have included student perceptions through interviews, surveys, or focus groups (Immerwahr & Farkas, 2006; Plimpton, 2007), most available data are quantitative or descriptive. While the Mitchell Institute (Plimpton, 2007, 2008, 2011) has made significant contributions to the literature on DE programs in Maine, there were still some gaps in the data. For example, while there are ample data on the enrollment of first-generation students as well
as sex, there were no data on other student demographics such as rural or urban status. While some studies included student interviews and quotes, which were informative and insightful, there was no analysis of these qualitative data to determine themes or patterns. Furthermore, the Mitchell Institute did not differentiate between DE programs at community colleges and universities.

Three major findings emerged from the qualitative strand of this study: (a) DE Programs within the MCCS provide access and benefits for an underserved student demographic, (b) many factors serve as gatekeepers and gateways to access, and (c) student access and experiences vary widely. In addition, several findings emerged from the quantitative strand of this study: (a) rural students had equitable access to concurrent DE programs (courses offered on a high school campus during the school day), (b) students perceived no discernable differences between course structure and rigor, and (c) student experiences in DE courses varied widely regardless of course structure, but with some notable exceptions, most students were enthusiastic about their DE courses and they felt better prepared for college.

Critical Systems Theory (CST) was the primary theoretical perspective for this study because it is particularly suited for researching and changing complex social systems that are found in education (Watson & Watson, 2011) and is a holistic approach to evaluation research (Jackson, 2010). Critical Race Theory (CRT) was also used to explore how underrepresented students may not have access to college preparatory educational tracks (Dixon & Rousseau, 2006). However, because of the low survey response rate I was unable to analyze participation in DE programs by some student
demographic factors such as race and SES. CRT was relevant to rural students in this study, who faced structural barriers to DE access.

Jen described the multiple components that are necessary to run DE programs as “a massive complex puzzle.” This theme resonated as quantitative and qualitative data were integrated to provide a cohesive analysis of the phenomenon (Onwuegbuzie & Leech, 2006), I applied Critical Systems Theory (CST) to each educational system and to the relationships between them to reveal both strengths and weaknesses of DE programs. CST is also referred to as Critical Systems Thinking, which relies on three commitments: critical awareness of strengths and weaknesses of different approaches, reflection on improvement efforts, and pluralism and flexibility in methodologies to address issues (Jackson, 2010).

Taken together, three major themes emerged from the mixed methods analysis. These include (a) autonomous relationships between institutions, (b) positive student outcomes, and (c) unintended consequences. First, I will discuss the autonomous relationships, which may explain the foundation for the variety of student access and experiences in DE programs. Then, I describe the positive outcomes, including access and benefits for students as a result of these relationships. Finally, I discuss the unintended consequences of DE programs that can hinder these relationships and disadvantage some students.

**Autonomous Relationships**

The foundation for the efforts to provide access and beneficial college experiences to an underserved student demographic seems to rest heavily on individual, autonomous relationships between specific high schools and community colleges in
Maine. The theme of autonomous relationships is supported by scholarly literature, which reveals that despite the positive outcomes demonstrated by many DE programs, "they present a picture of a static, stand-alone initiative in which discrete partnerships of colleges and high schools work together to meet the needs of their particular students" (Karp, 2015, p. 103). The majority of the interview participants indicated they had few opportunities to interact with individuals other than their primary institutional partner. DE leaders seemed to work independently to either design new programming or facilitate existing programs. These leaders emerged into two groups within the theme of autonomous relationships, border crossers, and predecessors. These groups of people are discussed, in turn, below.

**Border Crossers**

The importance of collaboration between secondary and postsecondary institutions in the success of DE programs cannot be overstated (Howley et al., 2013; Karp & Hughes, 2008). These relationships rely on individuals who are “border crossers” (Howley et al., 2013). Participants in this study were similar to the border crossers described by Howley et al. (2013), in that they understand both institutions and serve to facilitate communication and program implementation. According to Hoffman and Vlooch (2012):

> Dual enrollment program staff— in many cases, neither strictly faculty nor administrators— play an important role in defining the liminal space their programs inhabit. These practitioners collaborate, advocate, counsel, and advise, all while navigating the shifting landscapes of schools and colleges and
responding to the requests of academic departments and admissions offices and the needs of participating students. (p. 106)

DE instructors are border crossers in that they seemed to serve a critical role as the primary link between the high school and the college for students. Students reflected this boundary spanning in their survey responses, in which students in the same course indicated that their teacher was a high school teacher, a college professor, or both. One student described how their teacher followed strict guidelines provided by the college, which supported Brad and Deanna’s descriptions of how they worked closely with the college to align the curriculum.

Although they were not all leaders, all interview participants maintained and improved their individual role within the larger system of the DE program. According to Howley et al. (2013), "Interacting with both organizations at once, the border crossers drew on their prior knowledge of and experience with both the high school and the de facto partnering college" (p. 92). All participants also expressed a mutual respect and appreciation for their institutional counterparts. In this way, DE programs reduce fragmentation between secondary and postsecondary institutions and create smoother pathways for participating students (Karp, 2015).

For example, Lynn reflected, “When there’s trust and mutual responsibility in that relationship, it works really well.” All community college leaders acknowledged that high school guidance counselors are expected to do a great deal of logistical work with limited resources in order to serve as border crossers. The perception of guidance counselors as individuals with multiple, demanding roles and responsibilities while managing large caseloads is supported by the scholarly literature (Hanson et al., 2015;
McKillip et al., 2012; Woods & Domina, 2014). According to Hanson et al. (2015), “Counselors serve as liaisons between the community college, the high school, and students, and therefore they have a broader perspective” (p. 79).

Similarly, high school representatives appreciated their partnerships with community colleges. Michelle said that the community colleges have gone “above and beyond” and “worked really hard to establish strong relationships among high schools.” Literature supports the idea that guidance counselors recognize the benefits of community colleges including affordable tuition, proximity to many students, high quality programs, transferability of credits, and strong support and remedial programs (Mitlos & Bragg, 2008). Counselors also tend to value the partnerships between institutions to help provide a smooth transition for students (Mitlos & Bragg, 2008).

**Predecessors**

The initial formation of these relationships appeared to set a precedent for future program development. According to Beach (2011), "Rarely do policymakers consider the historical complexity of how the past has created the present" (p. xviii). Selena, Jen, Beth, Michelle, Lynn, and April described how predecessors formed these foundations. This, in turn, served as a template for establishing policies, practices, and procedures that shaped future programming. For example, April explained, “Though I’m new in this position there was somebody who was here prior to me. My predecessor established relationships with the high schools for a number of years... so I just went along with what had been established.” Beth described the impact of community college leadership, explaining how she witnessed the “behind-the-scenes work” to set up DE programs in the early 1990s. She remembered, “They knew it was coming down the pike. I think every governor has
had their own policy or their own program that they have wanted to start, to facilitate students taking classes.” She indicated that these programs have evolved at her college with changes in leadership, which has resulted in more support for DE programs.

Nancy was the only participant who served as a predecessor in initiating a DE enrollment program at a community college. She emphasized that originally college leaders and faculty expressed concern about the possibility that program standards would be compromised by DE courses. They were also wary about whether they could find qualified instructors, particularly for courses offered on a high school campus. Nancy explained that, ultimately, college leaders and faculty decided that high school students would be better prepared if the community college were involved in the academic process. In the long run, early efforts of predecessors resulted in benefits to both institutions. Nancy remarked:

It brought high school faculty together with the collegiate faculty and that sharing of standards and syllabi did a lot... to elevate what high schools were doing and to elevate what we were doing as well. It was a very, very interesting conversation, and in the end, serves to align the two academic experiences. And that alignment has been a big issue nationally, and certainly in our state.

Nancy insisted that throughout this process, “People learned on both sides.” This idea was also supported by adjuncts and high school teachers, Deanna, Brad, and Sue, who all indicated that participation in department meetings at their respective colleges, reviewing the curriculum, and working with college faculty have served as a valuable learning experience. The benefits of professional development opportunities as a result of DE
programs have also been reported by researchers (Harnish & Lynch, 2005; Jones, 2014; Scheffel et al., 2015; Taylor et al., 2015).

In the long run, early efforts by predecessors resulted in solutions to some educational dilemmas. Nancy shared one example, “How do you keep an advanced math person who’s teaching a handful of students? Well, one of the ways we did this was to work together.” This collaboration is key to successful relationships (Howley et al., 2013). In establishing these new systems, the MCCS represented what Karp (2015) described as a structural reform, because both institutions had to adapt to new education paradigms in order to make their relationship work. In addition, these efforts not only increase the numbers of students who complete college, but ensure that underrepresented students complete college at the same rates as their peers (Karp, 2015). Students in the study seemed to recognize these efforts, as they described positive learning experiences. One student on a high school campus wrote, “For the major I want to pursue, I need to understand [science], and with this course, I feel as though I will be going into college ahead because I have prior knowledge and work experience with [science].

**Positive Student Outcomes**

The early efforts of predecessors and the continued efforts of border crossers have resulted in positive student outcomes, as reflected by the qualitative research strand and reinforced by the quantitative research strand. Students who might not otherwise have access to a college preparatory experience are able to participate in DE courses, and students who participate realize specific benefits. In particular, (a) DE programs provide access to an underserved student demographic, (b) students have increased college aspirations, and (c) students gain academic self-confidence. These themes are discussed,
Underserved Demographic

Despite some criticism, all interview participants shared the general opinion that DE programs within the MCCS were available to a wide range of underserved students, and provided college credits to students who might not otherwise have that opportunity. Nancy and Lynn explained that these programs include a variety of students throughout the entire State of Maine. The efforts made by DE program leaders seemed to represent community social resources. Community social resources can help to offset disadvantages faced by low SES students in rural areas (Byun et al., 2012). These findings are related to research conducted by Howley et al. (2013), who found that DE programs in one Midwestern state provided access to students from poor, rural communities. Similarly, Harnish and Lynch (2005) described DE students as individuals “who would not otherwise participate in postsecondary education” (p. 171). In comparing her experiences at a rural and urban high school, Michelle said, “There is so much that they’re [students are] able to take advantage of ... there’s almost an overabundance of choices.” Similarly, Beth explained that due to articulation agreements, high school students hundreds of miles away earn credits from her community college. The perceptions of interview participants were supported by quantitative data, which indicated that from the fall of 2013 to the fall of 2015, 3,887 students (56%) from rural areas and 3,011 students (44%) from urban areas were enrolled in concurrent enrollment courses within the MCCS. These data also indicated that students from every county were enrolled in DE programs during this time period.
Because the credits earned through DE programs are transferable, they are valuable wherever students attend college. Sue shared how she emphasizes the value of these courses to her students each semester by telling her students:

"You are right on the right path. You’re taking college courses right now, and that’s really great because you’ll always have it. You can do whatever job you want after these courses but you will always have them, and you can take them and you can move them."

According to Lynn, Brad, and Jen, some students graduate from high school with six or more transferable college credits. In addition, Lynn and Jen described how some savvy students are taking advantage of not only the community college DE programs but programs offered by public and private four year institutions in Maine.

Lynn noted, "You’ve got some kids taking a lot of courses in some of the high schools. It’s kind of crazy." This theme was supported by student survey data, which revealed that students take courses from 2-year and 4-year institutions. Bart, a college graduate, was able to graduate in an engineering program in only three years due to the 43 DE credits he had earned at a community college and public 4-year university. While Bart’s experiences may not reflect the average course-taking pattern, seven students in this study indicated they had enrolled in at least four DE courses.

**College Aspirations**

It appears that the wide outreach and availability of multiple opportunities is made possible because high schools and community colleges share the goal of providing college readiness opportunities to high school students. Improving the structural relationships between institutions helps disadvantaged students overcome barriers in
navigating the social and cultural norms of college (Karp, 2015). Examples of overt community college outreach were abundant. Deanna explained, “We [high school teacher and community college liaison] try to work together to get the students prepared for college.” Sue shared that during adjunct meetings every semester at her community college, college administrators emphasize the importance of student retention, roadblocks students face, and ways to address absenteeism for both high school and matriculated students. She also noted that the college adjusts enrollment deadlines for the satellite locations to enable as many students as possible to have access to the course. Similarly, Jen explained that her community college hosts a DE summit each year for local high school guidance counselors to encourage expansion of DE courses on high school campuses.

Alternatively, community colleges also engage in beneficial practices that are more covert. These efforts seem to fulfill the intrinsic goal of supporting college aspirations, regardless of whether the students eventually enroll at that college. Lynn shared:

We know we have guidance counselors who are slipping kids into [the DE program] who have no intention of going to a community college...If a kid is low income, and that course is going to help them, at the end of the day... if I’m helping a kid who’s a Maine resident go to college, that’s not necessarily a failure.

Nancy shared that success in the DE program she helped initiate was defined in two ways, (a) DE course completion and (b) student enrollment in college. While Nancy and Selena both admitted that matriculation in their particular college would be an ideal outcome of a DE program, it was not the fundamental goal. This perception was reflected
by Pour (2016), Director of Early College Programs for the MCCS, who wrote, “Some may dismiss dual enrollment strategies as veiled attempts to boost enrollment or glean additional funding. And the reality is that while enrollment pressures may drive the growth of many dual enrollment efforts, they do not have to define them” (p. 1).

Nancy shared that in the first year of initiating a DE program, less than 30% of students who participated enrolled in her community college. While these statistics were initially criticized as a poor return on the investment, Nancy reiterated that this number was significant and grew each year. Nancy explained, “I think that we were successfully reaching out to students who hadn’t decided about college, and by engaging them and their experiencing success, I think they were coming on [to all colleges] in greater numbers.” This perception is supported by some literature, which indicates that DE can serve as a recruitment tool (Jones, 2014). In addition, even if they do not attend the same college as their DE courses, DE students are more likely to matriculate (Cowan & Goldhaber, 2015; Lichtenberger et al., 2014; Swanson, 2008). In turn, roughly 40% of responses from students in courses at the both high school and on a college campus indicated that their DE experience impacted their desire to attend college. One student wrote:

I'm currently taking a DE course during my first semester of sophomore year. Because I'm so far ahead in my studies, with so much time left in high school, I'll be able to take a lot more DE classes and graduate high school with a good amount of college credit. Not only does this make college and looking good to colleges easier, but it gives me an incentive to push myself further in my studies. My range of options for courses increases dramatically with DE courses, and I can
take courses that genuinely interest me and relate to what I want to study in college or do for a career.

Yet a critique prominent in DE literature is that it is difficult to control for the intrinsic high levels of motivation required by DE programs (Karp & Hughes, 2008; Smith, 2007; Speroni, 2011), and privileged, already college bound students are more likely to participate (Johnson & Brophy, 2006; Karp et al., 2007; Museus et al., 2007). Other studies indicated that a student’s high school GPA was positively correlated with student performance in the DE course in Maine (Plimpton et al., 2011). Therefore, while these student comments reflect positive experiences of some DE students, they must be interpreted with caution.

**Academic Self-Confidence**

In general, student benefits as a result of these outreach efforts included better preparation for college-level work and greater confidence in their academic abilities. Kanny (2015) explained that when students are successful when faced with college-level requirements, they earn self-confidence in their academic abilities. This self-confidence was reflected in both the qualitative and the quantitative research strands. For example, Sue, Brad, Deanna, and Michelle all noted that DE students demonstrate increased self-confidence. These findings reflect results reported by Howley et al. (2013), in which DE instructors described students as confident and academically strong. Lynn said:

> For our target audience there’s… a lack of confidence. “I don’t belong on a college campus... I can’t handle college work.” ... So our DE... is specifically... designed to have the kid really say, “Oh, I could see myself here.
Oh, that was really exciting. Oh, I actually am interested in all this kind of stuff, and I can do it.”

Quantitative findings supported the perceptions of DE leaders, as 81% of DE students in this study indicated they felt better prepared for college due to their DE experience. One student wrote, “I understood after doing it [taking a DE course] what I was in for and that helped me prepare and gave me confidence that I could do it.” Indeed, DE students may benefit from the self-realization that because of their DE experience they are capable of succeeding in college (Howley et al., 2013).

Other examples that may be described within the theme of academic self-confidence include student exposure to the rigors of college, independence, and freedom (Kanny, 2015). Bart described how he felt a sense of freedom during his first day as a DE student on a college campus when he asked to leave class to use the bathroom, and was told that asking for permission was not necessary. Another student response claimed, “I have been able to experience firsthand what college life and what the amount of work would be. I have been able to take a class that will directly help me with both knowledge and requirements in college and career later.”

Students in this study gave also examples of how they were exposed to the hidden curriculum. Kanny (2015) described the hidden curriculum as the implicit skills and practices that college students are expected to have and benefit from. These lessons include fostering relationships with faculty members (Kanny, 2015). Students recognized that while high school teachers will offer help when a student is struggling, college faculty expect the students to take ownership of their learning (Kanny, 2015). For example, a student noted that, on one hand, there was less help and less of a faculty
student relationship, “But my teacher did a good job letting us know we could email her if we had questions, and helping us with whatever she could.” Other implicit skills students learned included reading and understanding a syllabus and developing different study skills (Kanny, 2015). This point was reflected by many student comments. For example, one student simply stated, “I had to improve my study and work skills.”

**Unintended Consequences**

While the early initiation of individual DE programs seem to have provided a foundation for many program successes and positive student experiences, this early autonomy may also result in unintended consequences for some students. In addition, autonomy likely serves to both unify and segregate institutions within the MCCS. This reflects findings by (Karp, 2015) who reported that despite the positive outcomes demonstrated by many DE programs, they rely on individual partnerships between colleges and high schools. Regardless of program type, high school students in DE programs are required to navigate two educational systems simultaneously. Most students acknowledged this, and described the various systems they enacted to handle the disparities. One student wrote:

The three main differences between my college class and high school are the length of classes, the time of class, and the workload... The big way I manage the difference is to work in moderation so I can get my work done over a reasonable amount of time while also completing it before the deadline.

The idea that DE programs provide a “seamless” transition (Harnish & Lynch, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Morrison, 2008; Smith, 2007;
Swanson, 2008) was not supported by this study. Hoffman and Voloch (2012) proposed a different outlook:

Unlike the clearly articulated path of a continuum or the simple bridging of a gap, dual enrollment as a “liminal space” conveys the concomitant unease of dissolved boundaries and creates a productive tension that requires secondary and postsecondary institutions to articulate together their expectations for “college-ready students” and “college-level work.” (p. 101)

The idea of viewing DE as a “liminal space” recognizes the disconnect between institutions, and provides critical discourse that has largely been absent from DE endorsing literature (Bailey et al., 2002; Harnish & Lynch, 2005; Hoffman & Robins, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Morrison, 2008; Smith, 2007; Swanson, 2008).

DE policy and the high level of autonomy that defines individual DE programs seem to be closely intertwined. DE policies, or lack thereof, can shape how programs are implemented on the local level (Pretlow & Patteson, 2015). These policies can have both positive and negative consequences for stakeholders including higher education, secondary education, and students. Pretlow and Patteson (2015) described two approaches to DE policy, market and centralized. In a market approach, individual institutions have discretion in designing and implementing programs. In a centralized approach, DE structures are highly regulated and uniform across institutions. In this study, it seemed as though the programs within the MCCS are utilizing both market and centralized approaches simultaneously. While there are standardized policies in place, not all institutions interpret those policies the same way. Nancy noted, “I think in the early
years it was very uneven, the kind of implementation model... People were all over the place.” As such, DE programs developed in isolation from each other. This likely explains some of variation, including differences between community colleges as well as differences in the individual relationships between colleges and high schools. The variety in DE programs is not unique to Maine, and reflects the variety nationwide, within and across states (Krueger, 2006).

Selena described autonomy this way, “Community colleges, although there’s an umbrella, operate very much as their own entities.” Despite good intentions and well-meaning DE leaders at all levels, all participants described challenges that seemed to stem from program variability. Researchers reported unintended consequences were a serious concern in DE programs (Museus et al., 2007; Pretlow & Patteson, 2015). According to Museus et al. (2007) potential unintended consequences of dual enrollment policies and programs can include exclusion of underrepresented students in favor of students who are privileged. This concern was reflected in some of the unintended consequences in this study, which included (a) the disconnect between institutions, (b) unequal resources, (c) underprepared students, (d) and gatekeeping. Each of these issues is discussed, in turn, below.

The Disconnect between Institutions

The quantitative and qualitative strands of this study suggest that student access and experiences in DE programs within the MCCS vary widely. There appears to be a trade-off between a true college experience (dual enrollment) and a semi-college experience (concurrent enrollment). Students in DE courses on the college campus or satellite site have a true college experience, but these opportunities are available to fewer
students because of barriers such as transportation and scheduling issues. Students in DE courses within a high school have greater access, but they are not fully exposed to the college culture.

These examples all represent how the disconnect between secondary and postsecondary institutions can have a negative or neutral effect on students in DE courses. This point was reflected in specific participant comments in both the quantitative and qualitative portions of the study. Jen admitted, when discussing concurrent enrollment courses (on a high school campus):

I feel like the original intent of DE course, to be that kind of rich and rigorous experience taught at the high school level is... I don’t hear students talking in those ways. So I feel that the students see DE classes as the same as another class, it’s just credit attached.

The sentiment that DE courses and college courses are not the same is reflected in the literature. One DE professor described how accountability is a significant component in working with high school students, “You have to consider the expectation factor along with the maturity level... there is a different approach you have to utilize with high school students” (Reese, 2008, p. 19). At the same time, students seem to recognize the differences between DE courses and college courses. One student on a high school campus wrote, “I feel it’s not really showing me what college will really be like.”

Yet, even when students attend college on campus, they do not necessarily experience a meaningful transition. One student admitted, “College courses are a little harder.” According to Kanny (2015), DE students did not feel like they were an integral part of the college community. One student described how she felt uncomfortable when
she attended her college class while in her high school uniform (Kanny, 2015). Another explained that faculty members would make negative remarks about teaching high school students (Kanny, 2015), which may be due to frustration from some college professors who have had to remediate because high school students have not mastered basic skills (Mangan, 2014). Other students felt alienated from their college level peers (Tinberg & Nadeau, 2011). These perceptions seem to suggest that the disconnect between institutions is not attributable to course structure, including location, faculty, and other students in the class. Furthermore, variations in course structure do not necessarily impact whether students feel like they are undergoing a college preparatory experience.

Additional critiques represent discrepant perspectives. As previously described, Bart entered a four-year university as a sophomore with 43 college credits earned through DE programs within the MCCS and at a different four-year public university. While this appeared to be a significant benefit, Tinberg and Nadeau (2011) argued that if high school students are capable of success in college, perhaps the rigor of these college courses should be questioned. Jacobson (2005) also criticized this fast-track approach, arguing that the accrual of college credits while students are in high school deprives students of the traditional college experience. Bart’s comments reflected this wariness, as he said he felt rushed through college and did not have the same transition experience as his peers. Bart acknowledged a tradeoff, however; his debt was much lower because he graduated in only three years instead of four.

Differences in grading scales are another example of the disconnect between high schools and their community college partners. Deanna described the impact of DE courses on student grades in high school. Because of different grading scales, she must
convert high school grades before they are reported to the college. As such, a student could pass a course at the community college level with a D, but earn an F at her high school. Sue shared that because the community college does not give an A+, the highest grade students can receive on their high school transcript for their DE course is a 95, which, “irritates the heck out of some of these kids.” If the courses were taken at the high school, students could earn up to a 100. In this case, the DE course could have a slight, yet negative effect on a student’s overall high school GPA.

Some students have to give up something in order to participate. According to Jen, DE programs can interfere with work schedules, which may affect low-income families the most. While affluent families have a culture promoting college, children from lower SES families tend to emphasize workforce readiness and high school graduation (McDonough & Fann, 2007). For other students, a DE course interferes with their ability to participate in sports or other extracurricular activities (Immerwahr & Farkas, 2006), which can have social, emotional, and physical benefits and are integral components of a student’s high school experience (Howley et al., 2013). Deanna, April, Michelle, Beth, and Jen shared the difficulty in reconciling a student’s high school schedule with a college schedule. High school sports represent the nonacademic, community aspect of education (Howley et al., 2013) and can create a dilemma between student commitment to their local community in the form of sports and to academic advancement (Howley et al., 2013). One student explained, “I understand time management especially with juggling sports, high school homework, and my course homework.” While this particular student benefitted by learning how to juggle, this quote reveals the challenges imposed on students in balancing their high school and college
responsibilities. Not all students will be able to manage these equally. Another student indicated, “My dual enrollment course was partially independent study due to scheduling problems which made it sometimes difficult to remain on track.” Similarly, one student had to ensure two of her classes at the high school were study halls so she could make it to her college class on time.

These examples of the disconnect between institutions reveal how high school students, in some cases, cannot reap the benefit of either their high school experience or the college experience because of their participation in DE programs. Similar cases of the disconnect between institutions were described by Kanny (2015), who reported that students did not utilize the college support services because they conflicted with their high school schedules. In addition, students did not feel like they were part of the college so did not utilize tutoring services offered by the college (Kanny, 2015).

In another instance, Beth recalled how relationships between high schools and community colleges have been tainted. She said there have been occasions when a high school or technical center has expressed interest in implementing a DE program, but was unable to meet the minimum criteria required by the college. She admitted, “Then they kind of get a little nose bent out of shape... That might affect your relationship as well. ‘If I can’t do this one program, then I’m not going to do any.’” Issues with establishing and maintaining DE programs are not unique to Maine. Scheffel et al. (2015) identified major challenges in meeting minimum quality standards for DE programs included finding qualified faculty and maintaining adequate curriculum materials such as textbooks and software to ensure their courses match the college requirements. Nancy suggested that the minimum requirements high schools must meet in order to be considered college-level
courses in Maine are driven by the New England Association of Schools and Colleges (NEASC). NEASC is an accreditation organization that establishes and maintains standards for all levels of education, from pre-K through college (New England Association of Schools and Colleges, 2016).

Nancy stressed that as a community college leader she felt it was critically important for the MCCS to have common practices and policies regarding fees, eligibility, absenteeism, and program quality to verifying the legitimacy of the DE experience. Indeed, Howley et al. (2013) insisted that shared goals and support for these shared goals from all levels is critical to successful programs. Specifically, Pretlow and Patteson (2015) recommended clear policy that addresses all aspects of DE in one location. Yet, student surveys indicated that fees and prerequisites varied widely. Similarly, qualitative and quantitative research strands indicate that student experiences are significantly different. While most students in this study felt their courses within the MCCS were rigorous and beneficial, discrepant perspectives indicated that some courses were not academically challenging. One student, when comparing the high school to college classes, wrote, “It’s not too much different in my opinion. Honestly, it’s actually a little easier than most classes I’ve taken.”

These student perceptions are supported by interview participants who shared that DE program evaluation and comparison were minimal. Furthermore, there were few opportunities to discuss experiences, policies, and procedures with individuals from other schools. According to April, autonomy may result in unintended consequences and confusion for students. Selena felt that fragmentation starts with enrollment, adding, “There really isn’t... a systemic approach to it, which I think is challenging.” Beth, April,
Jen, and Nancy described this process. First, the high school guidance department identifies students and ensures they are eligible to participate, based on whatever practice is in place between that high school and college. The college admissions department then handles registration. Selena shared that the individual courses themselves are the responsibility of the department chair (who may oversee over a hundred courses). Beth and April suggested that facilitating DE programs could be challenging because they also have additional responsibilities within the college; their role as DE leaders is not a full-time appointment. The autonomy of each DE program has, in part, resulted in inconsistency. Selena explained, “We haven’t really thought about a real hand and glove level of collaboration between postsecondary and secondary institutions. It depends. It is really very specific to each high school.” The National Alliance of Current Enrollment Programs (NACEP) was established to ensure consistency and rigor in DE courses (Scheffel et al., 2015). Although DE programs in Maine have not earned NACEP accreditation, several programs have followed similar approaches advocated for by NACEP. Given the autonomy afforded to each college within MCCS, colleges seem to select which quality approaches will work best given the needs of the high schools, and student demographics, and the colleges.

While each component of the DE process represents a piece of the “massive complex puzzle,” the disconnect between institutions seems to result when pieces do not fit neatly or are missing. Furthermore, it is not clear whose responsibility it is to fill the gap when issues arise. Because each relationship operates autonomously, it appears that there is no process in place for evaluation, troubleshooting, or for sharing practices. Selena stressed that the burden of resolving all of the issues cannot rest solely on the
community colleges, and should be shared between the local community, the high school, and the college.

**Unequal Resources**

The theme of unequal resources in this study broadly describes how student access and experiences vary depending on the resources available in the community, colleges, or high schools. These resources include the educational background of community members, individual champions for DE programs, support services, financial resources, and the distance to a community college campus. For example, Nancy explained:

> If you’re at a high school where dual enrollment is really popular and you have a lot of master’s-prepared teachers and if you’re working with a community college that’s really interested in doing a lot of that... you’re going to have more people served than in others.

This perception is supported by Stephenson (2014), who identified champions as any individual within the educational pipeline who are an essential component to initiating a successful DE program. Individuals who encourage students to participate are also important (Immerwahr & Farkas, 2006). Jen, Selena, April, and Nancy all remarked that individuals who were supportive of DE partnerships were crucial to program success. Programs that rely on individual relationships may be tenuous. Staffing changes sometimes make it difficult to maintain the established partnerships (Scheffel et al., 2015).

On the other hand, communities who lack a champion, or do not have master’s-prepared teachers, may be at a disadvantage. In the largest DE program in Illinois,
authors identified similar challenges in finding qualified high school teachers to serve as faculty and ensuring curriculum alignment between the high school and college (Scheffel et al., 2015). The authors noted that while some high school teachers are effective in their classrooms, they still might lack the credentials to teach for the college (Scheffel et al., 2015). Roach et al. (2015) explained that there is a limited pool of high school teachers who meet the minimum qualifications for teaching DE courses because many have earned graduate hours in education instead of graduate hours in specific disciplines. In this study, Deanna and Brad both acknowledged this challenge. They both became DE instructors by default because they were the only teachers in their school that had the master’s degree in their field, which is required by the MCCS in order to teach DE courses.

Faculty qualifications are a particular concern in rural communities (Smith, 2015), and were, in this study, a significant barrier for DE programs in rural communities in Maine. Although rural students overall, and students from every county were represented by concurrent DE programs, some rural counties had fewer students (as a percentage of eligible students) than others. For example, in 2013, there were a total of 383 high school juniors and seniors in Piscataquis County (Maine Department of Education, 2012-2013). Of those, only 6 were enrolled in DE concurrent enrollment programs, which represents only 2% of the eligible student population (raw data provided by a key informant, personal communication, March 14th, 2016). That same year, Washington County had a total of 661 juniors and seniors (Maine Department of Education, 2012-2013), with 70 of these students in concurrent DE courses, or about 11% of the eligible student population. Selena shared that some communities were more supportive of others and posited, “How
do you make a student body and a community enthusiastic about the educational culture if they are isolated?” The culture of low expectations can hinder efforts to provide additional opportunities to underrepresented students (Palaich et al., 2006).

Support services can also be considered resources that are unequal. Selena, Lynn, Brad, Deanna, and Nancy described colleges and specific DE programs that offered intensive support networks. Lynn stressed the benefits of having a small population of students that she works with:

We can actually really talk to a kid and say, “Okay, you might be a college level, but is this the right choice for you right now?” And really guide them through that, because “You are going to struggle with English, even though you’re really good in math” ... so those conversations can be very much personalized.

She noted that she also utilizes individual conversations with students to ensure support systems are in place.

Other college resources include college libraries, tutoring centers, and virtual access to research databases. Nancy, Deanna, and Lynn described specific ways students accessed some of these college resources. Beth said some high school students utilize the exercise facilities but not the academic resources at the college.

On the other hand, it appears that not all students are able to access support services and colleges resources equally. Student surveys revealed that while some did not feel they ever needed help, students were twice as likely to ask for help in their courses offered at a high school (taught by a high school teacher) than in courses taught on the college campus (taught by college faculty). For example, Deanna and Brad shared they have a close relationship with their high school students, so these students seek help from
them. In this way, the high school provides ample support. The gap may also suggest that additional support services may be needed. According to Karp and Hughes (2008), support for students in DE programs nationwide has been variable. Another researcher reported that students were not provided with adequate support once they were enrolled in community college courses from either the high school or the college (Kanny, 2015).

Sue, Beth, Michelle, and April implied that their programs had minimal interventions and support specifically for DE students, outside of the traditional services offered at the high schools and colleges. Beth explained that she worked with high school guidance counselors to keep track of students and notify them when a student is struggling academically or not attending classes. She added that at that point, “Usually they can take it from their end, and do what needs to be done.” This appeared to be the first and final step in the intervention process from the perspective of that college.

Regardless, April, Sue, Deanna, and Jen shared the perception that students do not access college resources or engage in the college community. April suggested this might be due to the fact that that the high school student’s social structure was still located within the high school. Similarly, researchers reported that some high school students in DE programs nationwide had limited or no access to college services (Karp & Hughes, 2008). When programs allowed students to utilize college services, distance and a lack of an orientation program were likely reasons why students failed to take advantage of the potential opportunities (Karp & Hughes, 2008). These barriers were relevant to students in Maine, as some students were unable to access college services.

For example, Sue revealed that a perpetual concern that DE students in her satellite course have been unable to obtain access to their community college email accounts.
While students are assigned an email account when they enroll, “They have to jump through some hoops to figure that out.” This email account is used to provide notification of when classes are cancelled, send out homework and other reminders, and is also necessary for students to have in order to submit a course evaluation at the end of each semester. As such, DE students cannot complete course evaluations so Sue uses alternative methods to communicate with those students. In addition, while satellite sites offer access to courses in rural areas, in order to obtain tutoring or other support services offered by the college, students must visit the main campus. Selena and Sue both indicated that the distance to support services posed a major challenge for students.

It was unclear as to which educational system is responsible for providing tutoring and other support services. Access alone is not sufficient, underrepresented students need comprehensive support (Pretlow & Patteson, 2015; Taylor, 2015). Selena shared that this is one of many gray areas, particularly when a college course is offered on the high school campus. This ambiguity includes which institution is responsible for students when they struggle in their college class. For example, if a DE student is enrolled in a composition course, whether a student should see the high school English teacher or if the college should put a tutor in place is an unresolved issue. Selena insisted that answering those types of questions are crucial in order to ensure students do not fall through the gaps.

**Underprepared Students**

Another unresolved issue is what happens when a student is not ready for college-level work. Selena explained that as DE programs become more popular, there is a push from local high schools to expand course offerings. She expressed the concern, “What I
see sometimes is, in their enthusiasm to do that, we have a lot of students who are being pushed to apply when they really don’t want to apply.... I’m not always comfortable with that either.” This approach contradicts researchers who suggest that motivation and readiness are more important than age in creating a successful college experience for students (McCord & Roberts, 2014). Student surveys supported this idea, as most DE students in Maine indicated that DE courses had higher expectations, heavier workloads, and required more self-motivation than their high school courses. This perception is supported by findings that showed that students who lacked motivation and adequate preparation were not successful (Karp & Hughes, 2008). Brad, Deanna, Sue, Nancy, and Michelle all talked about students who were unsuccessful. Programs can provide a wealth of opportunities to students, but without student motivation it appears that these efforts are fruitless.

Other issues can arise when students enter college too soon. Beth shared that some students used DE as an opportunity to leave their high school during the school day. This finding was also reported by Karp and Hughes (2008), who noted that the college in their study implemented increased screening due to problems with some students. The theme of underprepared students was further supported by the scholarly literature. For example, Dougan (2005) reported that she and her colleagues had negative experiences with high school students who were immature and ill prepared, and noted it adversely affected the discourse in her course. Similarly, other authors have expressed concern about student maturity (Hoffman & Voloch, 2012) and have reported that students are not successful due to significant learning gaps (Jacobson, 2005; Kanny, 2015; Mangan, 2014).
Michelle explained that there is little middle ground with respect to student grades. Her students are either very successful and earn A’s and B’s, or they are not attending class and earn an F. This finding is reflected in the scholarly literature, as many students earned low or failing grades in their courses, which had a negative impact on their high school GPA and college transcript (Kanny, 2015). Student surveys indicated that in 32 courses students were earning scores within the “A” range, 17 courses had grades in the “B” range, and two courses had grades in the “C” range. Selena shared that when a student is underprepared for a DE course:

More likely than not that student just drops out of the class, and they don’t deal with the class, and get a failing grade in school. What the high school does with that is sort of up to the high school, because up until this point the college has been under no obligation to notify the high school when that potentially has happened to the student.

At the same time, she acknowledged that when a high school student needs a DE course for graduation, this issue might be more complex. In this example, the role of the high school is to prepare a student for graduation, yet the community college is providing the required course. Other researchers reported a disconnect between the courses students needed for graduation and the DE college courses students took (Kanny, 2015). Selena postulated, “Where does that responsibility begin and end?”

Lynn noted that some students have failed a DE course, yet were offered an additional course. Typically, if a matriculated community college student fails a course, they retake the same course so that the recent grade replaces the failing grade. Instead, Lynn indicated, some high school students who failed one course took a different course
and thereby failed both of them. This outcome has resulted in a policy change to limit courses if students are not successful, but it was unclear if this policy change was a system-wide initiative or within one specific DE program.

Nancy suggested that student failures also have the unintended consequences of hindering a student’s path to college. She said, “That’s not going to encourage them to go to college, to have failed one [college course] in high school.” Lynn explained that she would rather see a W on a transcript than an F or a D. Conversely, Kanny (2015) reported that one student who failed a course and earned a poor grade in another course noted that he felt better prepared to be successful in his first year of college because he understands the implications of his decisions. While yet another student in Kanny’s study described how she sought help from the college professor when re-taking a course she had previously failed.

According to Scheffel et al. (2015), “Families, school districts, and the college benefit in the long run if students and parents understand the impact of registering for a transcribed college course, and the importance of withdrawing from the course if the student is not making satisfactory progress” (p. 95). However, in order to accomplish this level of understanding and communication, students must be monitored carefully. According to a key informant within the MCCS (personal communication, March 14th, 2016), the average success rate for the Early College for ME (EC for ME) program is about 70%, which is consistent with the overall success rate in courses within the MCCS. What happens to the 30% of DE students who are unsuccessful remains largely unknown. Furthermore, this 30% failure rate occurs within a program that provides intensive support for and monitoring of students (Maine Community College System, 2016c).
and Brad explained that despite explanations and reminders, not all high school students understand the consequences of failure on a college transcript. Jen said, “They know. It doesn’t sink in though, about the whole withdraw. I’m going to get an F on my permanent academic record… that whole idea of a real college class is quite abstract.”

Michelle, Jen, Lynn, Selena, and Deanna discussed the issue of remedial courses and underprepared students, within the context of DE programs. The issue of remediation is significant. While the majority of high school students nationwide (86%) reported they were academically prepared for college (Center for Community College Student Engagement, 2016), between 43% (Bautsch, 2011; Strong American Schools, 2008) and 68% (Center for Community College Student Engagement, 2016) of community college students nationwide enrolled in at least one remedial course. The relevance of this dilemma to Maine and is supported by statistics that show that 50.7% of students entering community colleges needed to take a developmental course (Langhauser, 2015).

Michelle explained that even students who had passed advanced math courses such as Algebra II and Geometry still struggled to earn a passing score on the ACCUPLACER, which is a prerequisite for DE courses at the community college that serves her high school. The ACCUPLACER is an untimed, computer-adaptive test designed to identify student’s strengths and weaknesses in each subject area (The College Board, 2016). The disparity between student grades, performance on standardized tests, and college readiness is consistent with findings by other researchers (Center for Community College Student Engagement, 2016). Forty percent of students who reported their high school GPA was an A needed remedial courses, and 54% of students with
GPAs of A- to B+ needed remediation (Center for Community College Student Engagement, 2016).

These disparities may discourage students from pursuing college in Maine. According to Haag (2015), career and technical education students in Maine had low college aspirations, and when these students were interested in earning college credits, few were able to meet the minimum standardized test score. These perceptions are consistent with reports by other researchers, who indicate that barriers to effective DE programs may include policies that create disincentives, and low student enrollment in difficult classes due to fear of earning a low grade (Howley et al., 2013). Similarly, in this study, Brad reported that some students were discouraged from taking his DE science course because the guidance counselors were concerned the might not perform well. If students are discouraged from taking difficult classes in high school, they may not be prepared for the rigor of college level courses in the future.

According to Lynn, state money for DE courses cannot be used for remedial courses because remedial, or developmental courses, are not offered at the college level. If a student is still in high school, State funds cannot be used to provide a course that the high school offers. Some DE programs have therefore faced criticism that they represent “double dipping,” because the State is paying twice for the same student, which causes a strain on already limited resources (Bailey et al., 2002; Michelau, 2006). The policy preventing DE funds from supporting remedial courses may be a well-intentioned effort to prevent “double dipping.”

At the same time, Lynn and Selena both said that high schools should be responsible for providing the basic academic skills that students need to be successful in
college. According to Dougan (2005), instead of taking college courses, high schools should focus on making curriculum rigorous enough to prepare students for college level work. If high school students have room in their schedules for college courses, then they are not being adequately prepared for college by these schools (Dougan, 2005). Likewise, if high school students are capable of success in college the rigor of the college courses may need to be reconsidered (Tinberg & Nadeau, 2011).

However, DE courses seemed to provide students with an experience that high schools may not be able to emulate. Academic standards are not connected between high schools and colleges, and many high school teachers are not aware of which proficiencies represent college readiness (Strong American Schools, 2008). Students specifically identified some skills, expectations, and strategies they had to develop in order to be successful in their DE course including academic writing, note taking, study skills, time management, and organization. The difference seemed to be that in their college courses they felt they were on their own, and were required to be independent. For example, four students referred to their classes as being “strict” or having “strict deadlines,” while in their high school courses, students felt they could rely on the safety net of their high school teachers. One student explained, “Having the independence helped instead of relying on a teacher. The teaching was more vague than a high school teacher so it was kind of nice to leave it up to the student to be more responsible.”

The disparity between high school GPA and standardized test scores is another concern (Strong American Schools, 2008). Lynn acknowledged adequate preparation is a delicate issue when students pass their high school courses, yet are unable to demonstrate college readiness by their SAT or ACCUPLACER scores. These students, who are able
to meet high school graduation requirements, seem to face a triple jeopardy without recourse: their high school grades may not accurately represent their academic skills, they are ineligible for a DE course, and they will likely not be able to matriculate after graduation without remedial classes. Remedial education represents an additional barrier for students, as course completion and graduation rates are low for students who need remedial courses (Center for Community College Student Engagement, 2016; Dowd, 2007).

**Gatekeeping**

All three major qualitative findings are relevant to the theme of gatekeeping in this study: DE programs provide access to an underserved student demographic, several factors served as gatekeepers and gateways to student access, and student access and experiences vary widely. All participants shared the perception that students who are successful in DE courses gain valuable skills, but which students had access to these benefits varied by program. Community colleges are both gateways (Beach, 2011; Dowd, 2007) and gatekeepers (Dowd, 2007). This perception seemed to apply to DE programs within the MCCS as well. Access was available underserved students, yet some students were excluded from DE courses. In addition, access did not seem to vary by program structure, such as location or type of program, but instead varied by each individual program. Nancy explained, “Having differences [in policies] will always advantage some and disadvantage others. For access, if we have common practices around the State... it will serve everyone better.”

Gatekeeping seemed to operate at two different levels. First, students who want to take a DE course but are ineligible or unable due to barriers are excluded. Michelle
suggested these students not only get turned away, but they may share their experiences with other students and discourage them from participation. Second, students who gain access but are unsuccessful in DE courses will likely face gatekeeping if or when they try to matriculate later. These students seem to represent additional pieces of the “massive complex puzzle” that do not fit within the established programs, and are underserved by both the high schools and the community colleges. Three sets of factors served as gatekeepers in this study, including (a) financial resources, (b) bias against community colleges, and (c) bias against community college students. These are discussed, in turn, below.

**Financial resources.**

Financial resources seemed to impact access to DE programs at all levels from individual students to high schools to the entire MCCS. This theme was reflected in the scholarly literature, as funding constraints conflicted with states desire to ensure students are able to participate in DE programs (Karp et al., 2004; Museus et al., 2007). At the student level, Selena, April, Michelle, and Jen described how textbook costs and fees serve as a gatekeeper. April shared that students cannot always purchase their textbook. In those cases, she has referred them back to the high school, because the college does not have additional funding. Students indicated that they paid between $25 and $600 for fees and books. This range does not include the figure of $8,000 provided by Bart, who graduated from high school with 43 college credits, and is considered an outlier. Ten students who completed the survey indicated they received free or reduced lunch. While six of these students paid no tuition, fees, or purchased books, the remaining students paid between $50 and $70 for their DE courses. All students indicated that the fees did
not create a financial hardship for their family. At the high schools, resources vary as well. Jen explained the differences between the two high schools she has worked at:

At [high school]... we had a big budget for covering fees... and we covered textbooks for students who were free and reduced lunch. Here, [at another high school], we don’t have the budget so I think that does naturally limit whose going to seek out those classes. Absolutely. Without question.

Selena described these barriers broadly as “economics.” She shared that even with waivers of tuition and fees, a $150 textbook or providing weekly transportation to a course may be prohibitive for some families. Selena indicated that despite the multiple ways to deliver programming and the variety of opportunities for students, she was unsure whether the community colleges had “broken through” the economic barrier for students. Bart confirmed the perceptions of DE leaders, in addition to his DE coursework, he worked several hours per week in order to pay for the gas to commute to his classes and to cover related course fees.

Beth shared that while fees may serve as a barrier for some students, this typically has not been an issue because the college charges a minimal fee for the course. Students are responsible for purchasing their own books. She said that the Challenge ME grant, when it was available, provided assistance for students to pay for their books. If students enrolled in the High School Aspirations Program fit the criteria for the Early College for ME program, she will work with local high schools to switch students into that program to ensure that the needed resources are provided. Jen shared that their high school does provide textbooks for the DE courses offered at the high school during the school day, while Michelle described how her school chose not to offer a specific course because her
school could not afford to adopt the textbooks required by the college. This is consistent with findings by Scheffel et al. (2015), who noted that some high schools had difficulty maintaining adequate curriculum materials such as textbooks and software that are necessary to ensure their courses are on par with the college requirements.

Nationally, few state policies provide additional funding to support DE partnerships (Taylor et al., 2015). According to Taylor et al. (2015), "For community colleges that already receive the smaller share of state funding among public institutions of higher education, compliance with these state policies may come at an increased cost to institutions as an unfunded mandate" (p. 17). These national trends seemed to be true for DE programs in Maine. While funding was a topic that participants were reluctant to discuss, Selena acknowledged:

I’d like to believe that we are all here to serve the students, but at the end of the day we are all competing for students and we are all competing for funding. And I’m sad to think that that may trump some of these sharing opportunities that I think we should have.

All DE leaders at the community college level described how their institutions absorbed the cost of additional DE students when the funding streams were exhausted. Maine’s funding streams for colleges are not based on student enrollment, so increases in students in DE programs do not necessarily result in an increase in funding for the college. While the MCCS On Course for College program reimburses 50% of the student’s tuition, the college absorbs the remaining 50% and no additional funds are provided for other expenses associated with running a DE program (Haag, 2015).
According to data provided by a key informant within the MCCS, the budget for the EC for ME program was curtailed in 2015.

**Bias against community colleges.**

Bias also seemed to have an impact on gatekeeping. Mitlos and Bragg (2008) suggested that the historic criticism surrounding community colleges may result in guidance counselors having negative perceptions about their value, rigor, and standards. As such, high schools are sometimes reluctant to see their top students leave AP classes in favor of DE courses (Kronholz, 2011). Furthermore, some community college faculty and administrators fear that involvement in DE may perpetuate the negative stereotypes regarding the rigor of community college classes (Hoffman & Voloch, 2012).

The perceptions reported by researchers were reflected in this study, as bias against the community colleges seemed to affect whether guidance counselors would promote DE programs for particular students. According to guidance counselors Michelle and Jen, this bias stems from their experiences with working with admissions officers at four-year colleges, who prefer AP courses and exams to DE courses. Because AP courses represent the first national curriculum (Klopfenstein & Lively, 2012), these courses tend to be valued more. While DE program leaders within the MCCS have struggled to find instructors who can meet minimum qualifications, teachers of AP courses, on the other hand, do not have to meet these same requirements because they are not associated with specific colleges (Klopfenstein & Lively, 2012; Smith, 2015). Yet, AP courses appear to be considered more prestigious. One student’s perceptions supported the idea of bias:

I feel like there is not enough emphasis or information given out to students about dual enrollment, compared for example to AP classes. Every other student that I
tell about dual enrollment is 1. jealous and wished they were involved and 2. wondered why they had not heard about this. It was barely approached at one school meeting, but my Mom got curious and reached out to the college. For a course credit that has a much higher chance of being accepted as credit at a four-year college without a lot of the stress and the time commitment that AP classes require, the AP classes are still the ones that are stressed and are given the most information about.

This bias may be due, in part, to the origins of both programs. AP courses were established to challenge the most gifted students, while DE programs were designed with broader goals of providing access and momentum toward a degree (Klopfenstein & Lively, 2012). This bias may be tolerated because DE courses can absorb some students who are denied access to AP courses. Jen said, “AP courses certainly have a stronger filter when it comes to access, whether it be you have to get a teacher recommendation or you have to be taking the honors classes straight through... Whether it’s overt or covert.” Jen suggested that while there is not as much gatekeeping around DE classes, the existence of DE courses enables gatekeeping to continue at the AP level, as DE becomes a “cool catch-all” for students.

**Bias against community college students.**

The differences in gatekeeping between DE and AP courses may be exacerbated by biased perceptions of the DE community college students. For example, Michelle indicated that she had difficulty recruiting ELL students for a DE course, and remarked she was not sure if students were “intimidated” or “not ready” for the work. Similarly,
Sue referred to the DE students in her class as “not the upper-tier kids.” April described students this way, “high school students are high school students.”

This perception was also reflected by the literature. Immerwahr and Farkas (2006) noted that one impediment to DE programs was that high school students wanted to take it easy during their senior year. Community college faculty members who taught DE courses on a college campus described DE students as academically capable, but lacking in maturity (Ferguson et al., 2015), while others suggested that high school students were unprepared (Jacobson, 2005; Kanny, 2015; Mangan, 2014) and lacked maturity (Dougan, 2005). While lack of maturity was a common theme, additional criticism included the perception that DE students did not seek help or utilize office hours like their matriculated student peers (Ferguson et al., 2015). The lack of maturity of high school students was reflected, in part, in student surveys. For example, when describing the transition to a DE class, one student wrote, “There is more expected of me so I compensate by having my mom check my work.”

While student comments mentioning their “moms” and the scholarly literature may reflect the immaturity of some DE students, these perceptions and criticisms are important to consider within the context of April’s comment that “high school students are high school students.” These young adults are entering college earlier than their peers, and are navigating two disparate sets of expectations and norms simultaneously. It is important to acknowledge the tension created when students are occupying a liminal space (Hoffman & Voloch, 2012).

Other evidence provides a contrasting perspective. In their surveys, students described how they adapted to the rigors of their college classes by spending more time
and effort outside of class, not procrastinating, adjusting to strict deadlines, and managing heavier workloads. Student phrases including “self-motivation,” “independence,” and “confidence” suggests that the DE experience helps to impart maturity. This finding is supported by Hanson et al. (2015), who reported that counselors and teachers both noted the benefit of students gaining confidence by facing the additional challenges of college-level work and learning that they can be successful. For example, one student in this study wrote, “It is a more self-dependent course and there are no excuses so it teaches you to be responsible.” Bart admitted that he was immature, but he behaved appropriately in his DE course because it provided the freedom he needed in his learning environment.

Some students are drawn to DE courses because they provide an opportunity for rigor, differentiation, and freedom from standardization found in many high school courses (McCord & Roberts, 2014). Michelle, who explained that some students do not like the high school atmosphere, supported this idea and the opportunity to experience the independence of a college campus exposes them to future possibilities.

Unclear definition of college readiness.

Assessing whether a student is ready for college-level work is a challenge facing educational institutions (An, 2015; Prescott, 2006). A crucial, unanswered question in this study rests with differing perceptions of college readiness. Nancy advised, “If you can’t answer the question of who’s qualified to be in there, and how one determines eligibility, then you really could be putting students on a path to fail.” If colleges cannot find common ground on what college readiness means, then high schools will have difficulty determining what their exit criteria should be (Kirby, 2007). Yet, practices within the MCCS varied, prerequisites as indicated by students varied, and the high
school guidance counselors and community college leaders did not share similar definitions of college readiness. This variation seemed to benefit some students yet served as a gatekeeper for others.

The lack of a clear definition of college readiness has not prevented states from imposing admission restrictions on DE courses. According to a nationwide survey by Taylor et al. (2015), the existence of DE programs at most community colleges cannot be inferred as open access, because admission restrictions are the most common component of state DE policy. Karp et al. (2004) suggested that it is challenging for states to balance access and maintain academic standards. However, that claim implies that access and integrity are mutually exclusive. Although restrictions on eligibility are purportedly in place to ensure program quality and course rigor, some researchers are critical of this approach (Hoffman & Voloch, 2012; Smith, 1989; Speroni, 2011; Taylor et al., 2015; Tinberg & Nadeau, 2011).

Although DE programs within the MCCS are not open access due to admissions criteria (Maine Community College System, 2016c, 2016d), findings from this study suggest that these programs nevertheless provide access to an underserved student demographic. Findings also support the idea that rigor is not necessarily compromised by providing access to a wide range of high school students. Student perceptions of rigor as reported on the survey indicated that 65% of students on a college campus and 75% of students on a high school campus felt their DE course was challenging. Seventy five percent of students on a college campus and 81% of students on a high school campus felt that the expectations were different in their college courses. Similarly, Deanna and Brad felt that their course content at the high school was rigorous and reflected the on-
campus course. These perceptions are consistent with Ferguson et al. (2015), who compared grading, course syllabi, and student behavior as perceived by college faculty members. The authors concluded that the DE courses on the high school and college campus were as rigorous as the non-DE courses taught on the college campus.

At the same time, Sue, Jen, and Selena suggested that rigor was compromised when matriculated students were absent. In addition, April, Selena, and Beth said that maintaining rigor in DE courses depended more on individual instructors than course structure. Bart, a college graduate, supported this idea by saying that some of the courses he took on a college campus were much more difficult than high school classes, and others were much easier.

**Unclear definition of rigor.**

These wide-ranging perspectives seem to stem from a lack of a clear definition of what constitutes a rigorous course. If rigor was solely defined by the academic experiences, per Ferguson et al. (2015), then based on student and adjunct perceptions, concurrent enrollment courses are as rigorous as courses offered on the college campus. This would also be true if rigor was defined by the amount of time and study skills required of students in order to be successful in the course. If rigor was solely defined by the student population, then per Nancy, Jen, April, and Selena, rigorous DE courses rely on a blend of matriculated and high school students. In this case, only traditional DE courses would suffice. Yet, some researchers have criticized the premise that DE courses should be defined by the mix of students in them (An, 2015; Hoffman & Voloch, 2012).

The fear of perpetuating negative stereotypes (Hoffman & Voloch, 2012) and concerns about the rigor of DE courses have been used to justify strict DE admissions
policies (Hoffman & Voloch, 2012; Taylor et al., 2015). Some researchers have concluded that strict admissions requirements can impede access for students who need it most, and students can be successful in DE programs if they are provided with adequate support (Taylor et al., 2015). The differing perceptions regarding access and rigor seem to be inhibiting some of the relationships in the study of DE programs in Maine, thereby serving as gatekeepers to some students. Organizational power dynamics, such as perceptions regarding academic rigor, can affect the relationship between high schools and colleges (Howley et al., 2013).

**Guidance counselors.**

One unintended consequence of the differences in perceptions of college readiness may be that the colleges set eligibility requirements, but the high school guidance counselors must inadvertently serve as gatekeepers in enforcing them. According to McKillip et al. (2012), "High school counselors potentially hold a key position to help increase the number of U.S. students receiving postsecondary degrees, particularly to address inequalities that prevent certain students from successfully transitioning to college" (p. 49). However, within the context of DE programs, some guidance counselors are unable to address inequities. For example, Michelle said, “I think that the amount of effort that we’re putting into it, compared to the results, isn’t really equal.” She indicated that while she believes DE should continue, she added the caveat, “We... struggle with creating that culture of you can take a [community college] class and oh sorry, but only students with A’s or B’s are eligible... we want to be able to offer these experiences for all, but they’re just not for all.” This perception aligns with findings by An (2013b), who reported that admissions criteria for DE programs tend to favor students
who are already high achieving. This was true for student survey participants; 20 students had high school GPAs within the “A” range, and 19 students had grades within the “B” range.

Michelle’s description suggests that guidance counselors must also find a delicate balance in serving as both gatekeepers and gatekeys when advising students. While many students have positive experiences with their counselors, guidance counselors are not always able to provide adequate time to individual students for college counseling (Immerwahr & Farkas, 2006). While guidance counselors served as gatekeepers to DE program access by enforcing minimum enrollment standards set by the colleges, in this study they also seemed to serve as a buffer for other gatekeeping forces, particularly those that impact rural students. This buffer prevented colleges from witnessing the potential effects of gatekeeping. For example, when asked if students have indicated that transportation was a barrier for them, Beth remarked, “If they have, they haven’t voiced that to us. And that would be more... at the high school level... if they’re having an issue, they probably wouldn’t even send us a registration form to start with.” Yet, students with longer commutes ranging from 30 to 90 minutes did indicate that transportation was a challenge for them.

The relationship between the high school and community college was summarized differently by Jen. Initially, admissions policies were very strict and required standardized test scores. Over time, she worked with the [community college] and they made their placement policies more flexible. In this way, Jen served as a border crosser to help create a gateway for students. Jen said, “Placement really is the problem and responsibility of the guidance office.” In these examples, both guidance counselors have
responsibility for placement, yet the guidance counselors are not equally able to use their professional judgment about student enrollment.

Autonomy, roles, responsibilities, and boundaries appear to be additional pieces of the “massive complex puzzle” that are not clearly defined. Guidance counselors in the past were traditionally considered “gatekeepers” whose main responsibility was to help the privileged gain access to college (McKillip et al., 2012; Woods & Domina, 2014). However, it seems as though by serving as default gatekeepers for DE courses at the community college level, guidance counselors are unintentionally perpetuating this image. Lynn explained, “Most of the guidance counselors we work with are aware of and understand what the qualifications are, so I may not see all those students who wish it was a lower barrier than it is... I’m getting an application and materials from students who already meet those requirements.” Similarly, April remarked, “The access is there... Self motivation is a student’s part to meet up with the access, and again we are relying on the guidance counselors to send students along to us if they’ve met the qualifications.” Nancy further explained why minimum standards set by the community colleges are important:

If it’s a class that’s handed to us by the guidance department, we don’t know what criteria they used to decide who’s in and who’s out. So I have a hard time with that... I don’t have a sense of how many people apply to get into a program... Was there any selectivity?...I don’t know how it was done.

Lynn, April, Nancy, Beth all shared the perception that DE programs are available to a wide range of students. However, because of minimum admissions criteria set by colleges
are enforced by guidance counselors, there was no way to determine which, or how many students were excluded.

**Inconsistent policies and practices.**

The inconsistencies in policies and practices all seemed to be rooted in the early inception of DE programs. As such, access is enabled for some students and denied to others. This point is compounded by the intimation that a written state-level policy does not guarantee consistent implementation (Michelau, 2006), which seems to apply to DE admissions policies within the MCCS. For example, Nancy remembered that the ACCUPLACER was used early on to determine if high school students were ready for college level work, but it became apparent that “across the seven community colleges, it wasn’t being used consistently for the same purposes.” That point seemed to be true in this study, where less than half of student participants (17), had to submit standardized test scores to enroll in a DE program; yet Michelle, April, Nancy, Beth, and Lynn all said standardized test scores were mandatory for admission.

In an effort to clarify the differences between admissions policies, I compared how participants who were involved with different colleges described these policies. April explained that the requirement for standardized test scores, which included the SAT, ACT, or ACCUPLACER, as well as the minimum GPA of a B or better, was a result of “State-dictated” funding forces. Michelle shared this perception. When recalling the conversations she had with community college representatives about restrictive admissions policies, Michelle explained, “I feel like I remember her saying it was a state requirement. That was how they decided to offer funding was, at the State level, was that they had to have this specific thing. So I don’t think that the community college had
anything to even say about it... if I remember correctly, the State Department of Education saying this is what needs to be happening.” This perception was different from the programs Jen described, in which the high schools had a more active role in determining DE program eligibility.

As such, I contacted a key informant within the Maine Department of Education. According to Loredo (personal communication, March 4th, 2016), Higher Education Specialist for Maine Department of Education, colleges establish their own admissions requirements for DE programs. These minimum requirements are not set by the State of Maine. The Maine Community College System (2016b) website indicates that all colleges follow the same minimum entrance requirements, which include standardized tests. The cut scores listed on the admissions requirements webpage for the ACCUPLACER include Elementary Algebra, 75, Reading, 68, Sentence Skills, 74, and Write Placer, 6 (Maine Community College System, 2016b). According to the Maine Community College System (2016b), "These scores indicate that a student is qualified for college level work at one of Maine's community colleges and will not need to take remedial coursework."

The discrepancy between DE programs, resources, and student outcomes is noteworthy. These outcomes are considered broadly as “unintended consequences,” because it appears that all participants have a genuine interest in providing opportunities to help students prepare for and eventually enroll in college. Selena explained that sometimes DE leaders get so focused on developing programs that they can easily forget the original intention or purpose. Furthermore, all participants indicated that system-wide program evaluation and opportunities to share experiences have been minimal.
Many factors seem to have resulted in a “massive complex puzzle” with pieces that fit together for many underserved students, yet for other students pieces are missing or do not fit properly. The result is that after access is obtained, “Students potentially experience a wide range of benefits and drawbacks simultaneously while taking DE courses” (Kanny, 2015, p. 67). The disconnect between institutions has also likely resulted in various forms of gatekeeping. Although Michelle and Jen represent discrepant cases in their disapproval of admissions criteria, their perceptions represent a key piece in the DE puzzle. Michelle criticized, “I’ve seen some successes. I feel, I don’t know, I almost just feel like hesitant to even say that, though. Because I just feel like I’ve seen some successes, but it’s so few and far between that it’s like (sigh) I just feel like we should be getting more bang for our buck for this.”
CHAPTER 7

IMPLICATIONS AND RECOMMENDATIONS

In this chapter I discuss the implications resulting from the study, focused upon the relationship among policy, interpretation, and enforcement, which was a recurring theme in this study. The findings from the qualitative and quantitative research strands both suggest that within the MCCS the practices that result from DE policies vary significantly, and result in different impacts for students. I applied Critical Race Theory to enable students to share their perspectives on educational experiences (Dixon & Rousseau, 2006). However, the application of Critical Systems Theory (CST) was the primary theoretical framework because it includes provides a way to critically analyze inequities in complex systems (Watson & Watson, 2011).

A critical systems approach is needed in situations where stakeholders have varied interests, there are conflicts, or when power is used to reach consensus (Watson & Watson, 2011). This description is consistent with DE programs within the MCCS. In this study, while participants representing high schools and colleges shared the common interest of supporting the transition to college, DE programs were not a primary goal of either institution. Community colleges have faced increasing enrollment demands as they fulfill their mission of providing access to multiple types of programs for students from all walks of life (Mullin, 2010), while public high schools must meet the needs of all students (Fenske et al., 1997). Despite good intentions, DE programs were available to many students, while other students were excluded. This may, in part, explain why DE programs are still perceived as largely accessible to privileged students (Harnish & Lynch, 2005; Johnson & Brophy, 2006; Karp et al., 2007; Karp & Hughes, 2008;
Participants from community colleges and high schools valued their relationships, yet there were tensions and conflicts in establishing and maintaining these relationships. In addition, power dynamics depend largely on the individual relationships between the high school and the community college (Howley et al., 2013). Although multiple forces served as gateways and gatekeepers in this study, the balance of power ultimately rests with the community colleges.

CST can assist in making sense of these power differentials. Jackson (2010) proposed a specific approach to applying Critical Systems Theory to practice: (1) the aim is to take a broad, critical look at the problem situation, yet focus on the aspects most crucial to the organization at this time, (2) a choice is made as to how to address the problem situation, (3) the chosen methods are implemented, and (4) reflect on the efficacy of the interventions. Completion of all of the aforementioned steps is beyond the scope of this study, however the implications from this study address step one, recommendations focus on step three, and suggestions for future research represent possibilities for step four.

First, I discuss the implications of the admissions policies and practices of some colleges that define admissions boundaries within the MCCS. Then, I make recommendations for policy and practice based on study results. The recommendations for policy and practice are interwoven within larger themes and include:

- Align DE admissions policy to program goals
- Provide multiple pathways
- Provide differentiated student support
• Provide professional development for DE faculty
• Develop systems of intervention
• Implement boundary spanning policies
• Focus on underprepared students by (a) providing additional college readiness opportunities and (b) implementing policy to provide early access to remedial courses
• Implement policy to promote partnerships by (a) establishing a communication system, (b) sharing practices, and (c) providing adequate funding

Then, I consider implications and recommendations for future research. Finally, I conclude with a discussion of the role of DE programs within the mission of the MCCS.

**Implications of Admissions Policies and Practices**

Although it may seem counterintuitive to enroll underprepared students in college courses, research suggests that high expectations and a challenging learning environment can encourage student motivation (Fisher & Abbott, 2011). The findings of this study support that assertion, as students reported improved time management and study skills, a challenging curriculum, high expectations, and a sense of ownership for their own learning. In order to attain the benefits of college preparation, access, and financial savings to high school students offered by the MCCS (Maine Community College System, 2016c, 2016d), students must first gain admission to DE programs. Despite an existing and relatively clear admissions policy for DE programs (Maine Community College System, 2016b, 2016c, 2016d), colleges and programs in this study seemed to interpret policies differently and use their own assumptions and practices to determine which high schools students are qualified to enroll in a DE course. This conclusion is
supported by examples including the inconsistent use of the ACCUPLACER test, described by interview participants Jen, Michelle, April, and Nancy, as well as student surveys, which indicated that students had to meet different requirements in order to enroll. Boundary critique is one way to ensure methodological complementarism, and helps to show how values change when assumptions specific to certain stakeholders are valued at the exclusion of others (Ulrich, 2003). In this study, the exposure of the varied assumptions regarding admissions and the determination of which students were qualified to take a college course served as boundary critique.

When a community college utilized a guidance counselor’s recommendations in lieu of the ACCUPLACER, this seemed to serve as a gateway to DE access, although it was unclear which criteria the guidance counselors used. When a community college required the ACCUPLACER, albeit while simultaneously offering a multitude of student DE outreach programs, it served as a gateway and gatekeeper. As such, students had differential access to DE courses. This seemed to perpetuate the idea that DE admissions criteria tend to favor students who are already high-achieving (An, 2013b), thus inadvertently perpetuating the status quo. A core value of CST is its emphasis on ensuring equal participation in systems, as well as transforming systems, policies, and practices that replicate repression and injustice (Watson & Watson, 2011).

The inequity in admissions appears to be driven by a desire to maintain rigor. Some colleges within the MCCS seem to be using strict admissions requirements, such as the use of standardized tests, to define college readiness and as a de facto way to maintain and enforce program quality. Other researchers have reported this approach (Speroni, 2011; Taylor et al., 2015). For example, Speroni (2011) found that colleges established
admission criteria to ensure program integrity, yet there was no evidence to support the idea that rigid admissions requirements were effective tools in maintaining rigor. The underpinning theme that open access inherently reduces academic quality provides additional evidence that institutional approaches to diversity are insufficient (Smith, 1989). Furthermore, high school GPA is a better predictor of college success than a placement test, which has led to a push for using multiple measures to gauge college readiness (Center for Community College Student Engagement, 2016).

The lack of a clear, shared definition of college readiness also contributes to the inequity in admissions requirements. According to Nancy, the MCCS has not clearly defined which students are qualified to take a college course while in high school. This decision has a trickle down effect, for when colleges have different standards for what college readiness means, high schools have no clear guidance to align their exit criteria (Kirby, 2007). According to Watson and Watson (2011), an understanding of systems involves judging the boundaries of what is included and excluded from the system. In this case, rigor is used to justify the placement of admissions boundaries, which results in the exclusion of some students. Yet researchers such as An (2015) offered a unique perspective, suggesting that if students enroll in DE and are successful then they meet the definition of college readiness because they are participating in a college level program. An’s (2015) definition deemphasizes enrollment criteria, and challenges the status quo. This alternate perspective of college readiness is consistent with CST, which seeks to transform systems, policies, and practices that replicate repression and injustice (Watson & Watson, 2011).
While some interview participants claimed minimum admission requirements were determined by the State, Loredo (personal communication, March 4, 2016), Higher Education Specialist at the Maine Department of Education, indicated that all public and private colleges are free to set their own admissions policies. The confusion regarding the relationship between the ACCUPLACER and state-level funding and mandates perpetuated the disparity in policy and practice in this study. The differences between policy and practice depart from the recommendation of Pretlow and Wathington (2014), who insisted that DE policy should be clear, promote cooperation, and ensure equity.

The disparity between DE admission policies was also apparent when comparing admission policies at community colleges and four-year institutions in Maine. There was evidence to suggest that community colleges that enforce the use of the standardized tests have DE admissions policies that are more restrictive than four-year institutions. For example, a high school student can enroll in a DE course through the University of Maine’s Academ-e or Aspirations programs by obtaining guidance counselor recommendation and having a B or better GPA, without providing standardized test scores (University College, 2016; University of Maine, 2016). A high school student in “good academic standing” (University of Maine Fort Kent, 2016b) can also enroll in a DE course through the University of Maine Fort Kent without providing his or her GPA or completing any standardized test (University of Maine Fort Kent, 2016a). One participant, Jen, noted that local private colleges also have more lenient admissions policies, which is creating competition with community colleges for DE students. Data from this study showed that 10 student participants had also enrolled in a course at a four-year institution.
Resolving the inconsistency in admissions requirements is an important barrier to overcome in providing access to a valuable academic experience for high school students. The majority of student participants in this study indicated that their DE courses were more challenging than their high school courses, regardless of admission policies, course structure, or location. Student perceptions are valuable as a first step in suggesting that even when offered on a high school campus taught by a high school teacher, these courses are perceived by students differently and are taught differently than high school courses. Courses on a high school campus may provide a better middle ground for students, particularly for those who may not be quite ready for a fully integrated college course on a college campus. Data showed that students are twice as likely to ask a high school DE instructor for help than a college DE instructor, which supports this recommendation. According to Johnson (2006), when a social system changes, the environment that shapes human behavior also changes in a self-perpetuating system. Greater access to these experiences could represent a positive change to the system that connects high schools and colleges. The positive academic experiences students benefit from, including skills, aspirations, and perceptions, carry forward into college (An, 2013b).

**Recommendations for Policy and Practice**

I utilized triangulation to take a broad, critical look at DE programs in order to determine recommendations for policy and practice. Triangulation involves using different methods, sources of data, and perspectives in order to gain a thorough overview of the phenomenon (Ulrich, 2003). Systemic triangulation takes this approach one step further by switching between different reference systems to explore implications to all
stakeholders involved (Ulrich, 2003). While students were the primary stakeholders in this study, multiple sources of data and perspectives of individuals at all levels of the system provided the opportunity to consider changes that would benefit DE program leaders and instructors as well. Recommendations include (a) align admission policy to goals; (b) provide multiple pathways; (c) provide student support; (d) provide professional development for faculty; (e) implement boundary spanning policies; (f) focus on underprepared students; and (g) implement policy to promote partnerships. These recommendations are discussed, in turn, below.

**Align DE Admissions Policy to Program Goals**

One way the MCCS could begin to address the disparities in admissions policies is to first clarify the overall goals for their DE programs, recognizing that different programs may have different goals. The community college leaders in this study described the goals for their individual programs and these goals varied widely. Similarly, Jen said that goals differ between high schools. Smith (1989) urged a comprehensive, organizational approach to diversity so institutions are not fragmented in dealing with needs of various groups. Admissions policies and subsequent DE program design should be aligned to established program goals.

These suggestions align with the idea of a systematic approach to dual enrollment. Institutions can determine which student populations they want to serve, develop a strategy to meet the multiple needs of these groups, and then share successful strategies. Successful programs share goals, have the support of leaders and educators who share this goal, involve students and their families, and navigate the cultural barriers between high schools and colleges (Howley et al., 2013).
Provide Multiple Pathways

Speroni (2011) suggested that maintaining multiple pathways are crucial in order to avoid providing access only to students who are already college bound or potentially discouraging students who are still unprepared for the demands of college. Program websites seem to suggest different goals for the Early College for ME and the On Course for College programs. The Early College for ME program clearly articulates its mission, “To encourage and empower Maine students who need additional support as they transition from high school to college” (Maine Community College System, 2016c). The On Course for College program emphasizes a low-cost way for juniors and seniors to enroll in a college course (Maine Community College System, 2016d). The On Course for College program website implies a more selective approach, by describing eligibility criteria on the first page, “Students participating in On Course for College are generally required to have earned a high school grade-point average of B or better. We recommend that you contact the community college you are interested in attending to find out its specific eligibility requirements and options” (Maine Community College System, 2016d). Despite this, most participants described DE programs broadly. In addition, high school guidance counselors and DE leaders reported how students were shifted between programs in order to provide as many opportunities to as many students as possible. Lynn acknowledged that different types of students take different paths to reach their goal of attending college.

Admissions criteria, programming, and support for different DE programs should vary based on differing goals, provided that the differences are explicit. According to McCord and Roberts (2014), the first step is to establish whether a student is motivated
and ready for college coursework. If the goal of a specific program is to enroll underrepresented or marginalized students, colleges must recognize that some of these students may not be able to meet strict minimum requirements. Karp and Hughes (2008) explained, “If programs are truly going to enroll underserved students, programs must confront the fact that they unintentionally demand high levels of motivation” (p. 860). In addition, educational leaders must recognize that low SES parents are not as adept at navigating barriers to enrollment and ensuring their students are involved in a college preparatory program in high school (An, 2013b). Furthermore, students who are first-generation and low SES are also less likely to understand issues around credit transfer, fees, and obtaining support (Pretlow & Patteson, 2015). Students from rural areas may also face the additional challenge of low parental expectations and lack of access to a broad, rigorous, high school curriculum (Byun et al., 2012). According to Watson and Watson (2011), these critical and systemic perspectives are complementary and necessary in order to recognize that some groups are privileged over others in order to avoid reproducing forms of repression. For example, students who do not receive adequate preparation for college while they are in high school are more likely to need remedial courses and less likely to graduate (An, 2013b).

DE programs designed to provide access to underrepresented students could have admissions policies that use multiple measures to determine college readiness, and allow students to only enroll in courses on a high school campus, which could help ensure progress is closely monitored and support is readily available. This suggestion also aligns with the finding that students in this study were twice as likely to ask for help in courses on a high school campus than students on a college campus.
On the other hand, this study demonstrated that DE programs also appeal to and benefit students who are already college bound. Michelle noted that program variety is important, “Sometimes college credit is right for a student. Sometimes doing some sort of extra learning experience is right for a student.” Students may be attracted to DE courses for rigor and differentiation, or are unhappy with the standardization of high school courses and AP classes, which emphasize test preparation (McCord & Roberts, 2014). The students surveyed supported this perception. For example, one high school sophomore indicated that the DE program would allow her to take advantage of a wide variety of challenging opportunities not offered by her high school. Another college graduate indicated that DE courses enabled him to escape the boredom and confining culture of his high school. For those students, stricter admissions guidelines might be more appropriate and the DE program could focus on on-campus experiences with more flexibility in course selections.

**Provide Differentiated Student Support**

Just as individual DE program goals may vary, the level of student support should vary as well. If colleges within the MCCS determine that a goal is to continue to provide and expand access to DE programs for underrepresented students, the restrictive admissions policies of some programs and colleges should be reconsidered. This review should be done with the understanding that these students will be provided with support. Support should be an integral component of all DE programs (Karp & Hughes, 2008). While additional resources will benefit all students, support services are critical for low-achieving students (Cowan & Goldhaber, 2015). The key to access for poor, underprepared students is a support program that recognizes the diverse needs of
individuals and should include financial advising, access to mentors, academic advising, counseling, and an orientation program (Howard, 2001).

Findings from both the qualitative and quantitative strands of the research study indicate that student support services in DE programs within the MCCS vary widely. Participants Sue and Beth both indicated that students received minimal support in their programs. Yet, in other cases, students received ample support. For example, the Early College for ME program provides support and advising during high school and college (Maine Community College System, 2016c). Similarly, Brad and Deanna described how they worked closely with high school students in their DE course offered at the high school during the school day by providing extra help and encouragement. Both high school teachers insisted that they maintained course rigor by following a syllabus and working closely with college faculty. This approach is supported by Hughes (2010), who noted that the rigor of DE courses should be equivalent a traditional college class, yet “it’s allowable for the instructor to consider using pedagogical strategies that may be better at engaging high school students” (Hughes, 2010, p. 13). Examples of pedagogical strategies included providing extra resources, scaffolding, or referring students for help outside of the class (Hughes, 2010). In order for students with higher educational needs to achieve at similar levels as their privileged peers, they will require greater resources (Dowd, 2007). While some structures in systems represent barriers to change and are self-perpetuating (Johnson, 2006; Senge, 2006), these suggestions would provide a differentiated approach to meet the advising and learning needs of students, and represent concerted efforts to shift the patterns of oppression.
Provide Professional Development for DE Faculty

Kanny (2015) recommended professional development for college faculty in addition to structured support from the high school. While State policies have sought to influence the quality of DE programs through admissions and course offerings, program quality in terms of professional development for faculty and support services for students have been minimal (Taylor et al., 2015). Professional development for faculty members who teach DE courses could represent another opportunity for high schools and community colleges to collaborate and provide support for underrepresented students. Sue described an annual meeting for adjunct professors, in which the community college focused on student development and retention efforts. Dual enrollment programs were an integral part of the agenda. She also had the opportunity to meet with other faculty in her department to discuss the curriculum. Brad and Deanna both expressed the value of an open door policy with their local college, in which they worked closely with faculty members and met frequently to share assessments and resources.

The addition of a seminar for college faculty members who will have high school students and matriculated students in their classes with specific strategies and guidelines could also be useful. Some faculty members may not know how to handle having a high school student in their classroom, which could be facilitated by having the opportunity to meet with a high school teacher or guidance counselor. Sue noted that in her evening courses offered at a satellite site, she does not know if a student is still in high school unless that student divulges that information. This finding was also reported by Hughes (2010), who explained that if college professors do not know that some of their classes
include high school students, they cannot communicate with high school faculty if student performance drops (Hughes, 2010).

Even when faculty members are aware of high school students in their classes, Ferguson et al. (2015) reported that faculty members did not take DE status into consideration when designing their courses, and expressed frustration because high schools students were less likely to seek help during office hours. However, faculty may not be aware that college office hours may conflict with a student’s high school schedule (Ferguson et al., 2015; Kanny, 2015). Bart, a college graduate, admitted he hid the embarrassment he felt when his professor identified him publicly as a high school student during the first day of his DE class at a four-year institution. These examples indicate why a seamless transition from high school to college should include a comprehensive approach to access and student support, and are consistent with CST which emphasizes identifying and facilitating collaboration between stakeholders as groups work together to change the system (Watson & Watson, 2011).

**Develop Systems of Intervention**

A system of intervention would acknowledge and make accommodations for the fact that high school students are straddling the liminal space between two educational systems simultaneously. This recommendation is supported by the scholarly literature, which suggests that systems should address the fact that some of these students are academically ready for college, but may not be socially or emotionally ready (Ferguson et al., 2015). I previously suggested that DE programs should reconsider the use of restrictive admissions policies. A pilot DE program that has a comprehensive plan of support in collaboration with both high school and college level DE leaders could include
waiving the ACCUPLACER or some GPA requirements. This waiver may be appropriate only for students enrolled in DE courses on a high school campus, and would require close relationships with college faculty to ensure rigor. Then, student progress could be monitored and evaluated regularly to see if students who might otherwise be excluded from programs are able to be successful if provided with ample support. This could therefore be one way to provide broader access to students.

Community colleges and high schools should work together to develop an integrated system of intervention that begins with the enrollment process. Hughes (2010) explained that the high school counselor or DE coordinator should provide students with an explanation of appropriate college conduct. A warning system in collaboration with DE faculty should be in place so that if issues arise, such as low grades or attendance, they can be addressed immediately. Support services could include orientation, advising, career counseling, and tutoring to address the non-academic needs of this unique student population (Ferguson et al., 2015) and should be available during hours that are accessible for high school students (Ferguson et al., 2015; Kanny, 2015).

In addition to support and intervention, high school students also must be notified of their rights and responsibilities (Scheffel et al., 2015). High schools and colleges should share the responsibility of disseminating a consistent message about what it means to be a high school student in a college class. According to Watson and Watson (2011), a critical systems view can be used to identifying the roles and responsibilities of stakeholders within a system in order to promote collaboration and change. Jen and Brad both explained that, despite informing students, the idea that they are enrolled in a college class is abstract, particularly for those in a college course on a high school campus.
Parents and students must understand the implications associated with generating a college transcript while still in high school, as well as the importance of withdrawal if a student is unsuccessful (Scheffel et al., 2015). Yet, Lynn shared that when a high school student is not performing well in the DE course, the student may stop attending and it is unclear how the repercussions are dealt with at the high school level.

Implement Boundary Spanning Policies

Relationships between participants in systems can vary and can include shared interests and decision making, compatible interests with some compromise, or conflicting interests in which participants are forced to accept the decisions of others (Watson & Watson, 2011). In this study, the various complex relationships designed to span the boundaries between secondary and postsecondary institutions represented all of these different types of interactions. Complex systems are not easily understood and have multiple components (Watson & Watson, 2011). As a result, unanticipated consequences resulted in negative experiences for underprepared students.

The idea that students are sometimes pushed into DE opportunities before they are ready was noted by participants Jen and Michelle, and is supported by the literature (Mangan, 2014). In these instances, students should be allowed to withdraw from the course, even after the college’s deadline, without penalty to a college transcript. This recommendation conflicts with the perceptions of some DE leaders such as April, Nancy, and Lynn, who suggested that in order for high school students to have a realistic college experience, they should be held accountable to the same policies as matriculated students. On the other hand, systematic boundary critique involves exploring how a claim affects all parties involved, even if those perspectives were not included in the underpinning
reference system (Ulrich, 2003). In this case, the unanticipated consequence of underprepared students results in a failure on a college transcript while a student is still in high school. The claim that high school students should be accountable to the same rules and regulations as college students should be reconsidered. The findings in this study are consistent with the scholarly literature (Dougan, 2005; Hoffman & Voloch, 2012; Kronholz, 2011; Mangen, 2014), which recognizes that high school students are not yet college students, have to adapt to more challenging courses quickly, and are straddling both institutions and norms simultaneously.

Hoffman and Voloch (2012) suggested that DE should be viewed as a “liminal space,” and explains it this way:

Unlike the clearly articulated path of a continuum or the simple bridging of a gap, dual enrollment as a “liminal space” conveys the concomitant unease of dissolved boundaries and creates a productive tension that requires secondary and postsecondary institutions to articulate together their expectations for “college-ready students” and “college-level work.” (p. 101)

Approaching DE as a liminal space acknowledges that DE programs are different than either high school or college courses, thus policy and practice should reflect those differences. Changing programming in response to student outcomes would address the unintended consequences faced by students who may be unsuccessful a DE course.

Currently, the underprepared students who enroll in DE courses face triple jeopardy. They generate a failing grade on both their high school and college transcripts while still in high school. These students will likely graduate from high school, but may not receive additional help to address the gaps in college preparation. These students may
also need remediation if they do matriculate. This change would represent a policy initiative that recognizes that some high school students who want to try will thrive in a different learning environment, yet others may try and not be ready.

Furthermore, integrated support systems and better communication between the high schools and colleges when a student is not performing well could be part of a larger system of intervention. Focusing on the organization of systems is sometimes necessary in order to enact a meaningful change (Johnson, 2006). In some instances, tutoring or parental involvement may help get a student back on track. While this is different from a true college experience, this recommendation again recognizes the liminal space between high school and college. DE represents a structural reform because both institutions have to adapt to new education paradigms in order to make their relationship work and provide students with the support they need to successful (Karp, 2015). On the other hand, this may be an indication that a student is not ready for a college course and may need a different learning experience than DE courses. This approach could be a way to identify students who would likely need remediation at the college level.

Focus on Underprepared Students

With only a focus on currently enrolled DE students, students who were denied access or were unsuccessful in DE courses were beyond the scope of this study. Nevertheless, participants April, Beth, Jen, Brad, and Michelle all referred to students who were denied access or discouraged from enrollment in DE courses, making this a salient but emergent finding. Lynn described how some students failed their DE courses. These issues warrant future research, and should include efforts to determine which student demographics are excluded or unsuccessful. For example, what are the
consequences for these students? Do these early experiences with gatekeeping hinder future college aspirations? Also, if students are unable to pass the ACCUPLACER while in high school, what happens to these students who have met graduation requirements but do not qualify to enroll in a college level course? These students will likely need remedial coursework in college, thus perpetuating a cycle of inadequate preparation. According to Watson and Watson (2011), emancipatory values are especially important when considering social systems wherein there are inequalities in opportunity. Two themes that emerged within the context of underprepared students include college readiness and developmental education. These are discussed, in turn, below.

**Provide additional college readiness opportunities.**

The results of this study indicate that DE programs must be considered within the larger context of college readiness. The idea of providing different college preparatory programs for high schools students aligns with the MCCS strategic plan, which includes continuing collaboration with high schools and “intensive college readiness experiences at no cost to students before they matriculate in a degree program” (Langhauser, 2015, p. 2). For some students, instead of a DE course, a college preparation or readiness course might be a better fit and would provide the additional skills that students need. For example, Deanna noted she would like to offer a computation course designed specifically for underprepared students, but did not have the availability in her current teaching schedule. This method could also assist in breaking the cycle of underprepared students. A broader view of the issue of college readiness is consistent with systems thinking in that systems analysis should include a review of how schools are organized and how individuals interact and move into and out of a system (King & Frick, 1999).
Implement policy to provide early access to remedial courses.

While the MCCS has not specifically identified the purpose of DE programs to mitigate remediation (Maine Community College System, 2016c, 2016d), Michelle, Jen, Lynn, Selena, and Deanna all discussed the issue of remediation within the context of underprepared students. Community colleges should also work with local high schools to incorporate developmental course opportunities earlier in a student’s high school career. For example, colleges could administer the ACCUPLACER earlier in high school, or use existing tests that are already part of the Maine Comprehensive Assessment System (Tucker & Godfrey, 2015) to identify students who are interested in college but might need assistance. Instead of using tests as a high stakes tool to limit admissions, these could be used for early identification of students who lack academic skills. The intended goal of the ACCUPLACER is to assess a students’ strengths and weaknesses to help match courses to the skill levels of individual students (The College Board, 2016). For some students, this may mean a shift away from DE courses and more toward fundamental courses.

Another strategy could be to target high schools that have high enrollment numbers in remedial courses within the MCCS. For example, 32 out of the 149 high schools identified in the remediation report had more than 50% of their matriculating students needing at least one remedial course (Langhauser, 2015). A targeted approach to identify students who need remediation earlier (such as when they are still in high school), and providing developmental programs sooner might help to reduce the overall remediation rate within the MCCS. This idea is supported by the Center for Community College Student Engagement (2016), which recommended partnering with K-12 institutions to
provide specific courses designed to prepare students for gateway courses (college math and English courses), while providing adequate support.

An additional policy change could be to offer remedial coursework in the summer. Lynn noted that DE funding cannot be used for remedial courses. Yet, she suggested that offering a remedial course during the summer between the student’s senior year of high school and freshman year of college might give students needing remediation an advantage in the fall. Summer bridge programs have improved college readiness and persistence (Center for Community College Student Engagement, 2016). Lynn noted, “Once you land on a college campus, remedial work just acts like an anchor.” Lynn’s perception is supported by the literature, which indicates that the majority of students who enroll in developmental courses are not successful in college (Center for Community College Student Engagement, 2016). Furthermore, low-income, Hispanic, and Black, non-Hispanic students enrolled in developmental courses at higher levels than their White peers, regardless of whether they had earned accelerated credit (Prescott, 2006). This point provides evidence to support the suggestion that, for some students, access to bridge programs should be more of a priority than DE courses.

These proposed integrated approaches focus on a systems approach to change (Banathy & Jenlink, 2004). An (2015) explained that singular efforts made by high schools and colleges, such as the adoption of new standards or offering remedial education, are unsuccessful because they do not require collaboration between institutions or mend the gaps in the high school to college pathway. These suggested approaches would further enhance the relationship between high schools and community colleges to help fill in some of these gaps.
Although the purpose for DE programs has not been to explicitly reduce the number of students needing remediation, this issue cannot be ignored when viewing DE from a critical systems perspective. Remedial education policies perpetuate the idea of community colleges as gatekeepers (Dowd, 2007). Students needing developmental courses are denied admission to four-year colleges, while community colleges admit these students and provide remediation (Dowd, 2007). This assertion is supported, in part, by the University of Maine System Remediation report, in which Page (2016) indicated that, as of the Fall of 2015, The University of Maine and University of Maine at Presque Isle are no longer offering remedial coursework. As gatekeepers, community colleges have taken the pressure off four-year colleges by absorbing large numbers of new students (Dowd, 2007). As a result, four-year colleges have been able to focus on selectivity, which has created a more stratified student body by ability and SES (Dowd, 2007). Pretlow and Wathington (2014) warned, "In the end, DE might reinforce educational stratification where it need not exist" (p. 54).

**Implement Policy to Promote Partnerships**

A finding consistent in both the qualitative and quantitative strands of this mixed methods study was that there were differences between each college, within each college, and with each college and high school partnership. DE policy should promote cooperation between institutions in order to increase access and improve success (Pretlow & Wathington, 2014). By improving the structural relationships between institutions, disadvantaged students will have fewer barriers to overcome to navigate the social and cultural norms of college (Karp, 2015). Key components of developing sustainable partnerships include establishing a communication system, sharing practices, and
providing adequate funding (Stephenson, 2014). These recommendations are discussed, in turn, below.

**Establish a communication system.**

While the focus of the recommendations thus far has been for the MCCS, it is important to recognize the role of the high school, which needs to take an active role in better preparing students for college (Andrews, 2004; Bailey et al., 2002; Harnish & Lynch, 2005; Johnson & Brophy, 2006; Jordan et al., 2006; Karp & Hughes, 2008; Kirby, 2007; Kronholz, 2011). All participants in the qualitative strand recognized the importance of the relationships between high schools and colleges, with the shared goal of providing beneficial opportunities to students.

There is a strong need to have an open dialogue to find the balance between the placement needs of the community colleges and the expertise and understanding of students by the guidance counselors. According to Hoffman and Voloch (2012), DE program leaders are important components of the liminal space because they serve multiple roles within their primary institution, build relationships with their partner institutions, and try to meet the needs of participating students. Participants also pointed out the need for more collaboration among teachers in the schools utilizing these DE programs. Professional development workshops and regular meetings might assist in getting key teachers “singing the same song about expectations,” as Jen remarked.

April reiterated that she does not have the opportunity to learn about how other schools conduct their dual enrollment programs. She suggested it would be best for students if Maine community colleges and universities shared their practices. Similarly, Michelle shared her hope for an early college consortium. This perception was
reported by other researchers, who shared that support from leaders and collaboration between high school and college faculty were key to successful DE programs (Howley et al., 2013). A first step in establishing a communication system should include a meeting with DE leaders, representing all colleges within MCCS. Participants should have the opportunity to participate using video conferencing technology to ensure geographical distance does not hinder adequate representation from each college. This initial meeting would serve as an opportunity to discuss current issues, establish priorities, and begin the process of determining next steps in forming an early college consortium that should include four-year institutions.

In July of 2011, the “Governor’s Task Force on Expanding Post-Secondary Access for High School Students in Maine” was formed (Governor's Task Force, 2012). This group included representatives from the Maine Legislature, Maine Department of Education, Maine Community College System, University of Maine System, private colleges and universities, K-12 school districts, and other educational organizations (Maine Department of Education, 2015b). The results of this task force could inform future efforts. An interim report was published based on a survey of Maine’s high schools, and included barriers to DE access as well as specific recommendations (Governor's Task Force, 2012). While no final report was published, and there have been no task force updates since 2012 (Maine Department of Education, 2015a), the findings and recommendations from the Governor’s Task Force could serve as a starting point for an early college consortium.
Develop policy based on shared practices.

Several policy recommendations were discussed previously regarding admissions and support. DE policies can help to facilitate alignment between high schools and colleges to improve DE quality (Taylor et al., 2015). While policy will, inevitably, drive practice, the reverse should also be true. As DE leaders share practices, challenges, and successes, this could lead to informed proactive policy recommendations.

At the same time, institutions must ensure that practices are adopted without instituting cumbersome regulatory measures (Lowe, 2010). Policymakers should recognize that DE program leaders have multiple responsibilities within their institutions. Nonetheless, increased collaboration could help leaders find ways to work efficiently while implementing program changes. April explained, “I sense that there’s a strong desire to increase dual enrollment at a State level and it’s going to take enough people to do it well.” Each state should have a clear policy that addresses all aspects of DE, that can be found in one location, so that policymakers can view and make decisions based on the whole (Pretlow & Wathington, 2014). April suggested that a unified state policy would be helpful. She clarified that while she was referring to primarily to DE students, greater consistency would benefit all students who transfer from one college to another. When policies are disconnected, unintended consequences may occur when decisions about one component fails to consider the potential effects on other areas (Pretlow & Wathington, 2014).

The challenge for the MCCS will be in balancing the importance of consistent policy while recognizing the value of the autonomous relationships that support specific student populations. Selena described how she communicates with each high school to
determine their goal for their specific student body, and then works to fulfill the requested niche. While more collaboration could benefit both institutions, Selena’s comment is a reminder to recognize the differences between Maine’s high schools and student populations. Once consistent policies regarding admissions and support are in place, institutions could then work within those parameters to develop their own unique programs. A systems perspective encourages the effort to view the interconnectedness and interdependence of each level within an education system (Banathy & Jenlink, 2004). Individuals within each program must find the best fit for each community and make individual programs work to benefit their students. At the same time, a holistic approach is needed to ensure change is viewed within the context on the larger organization (Thornton et al., 2007).

**Provide adequate funding.**

According to scholars, in order to truly become a gateway to opportunity, the mission of community colleges must be clarified and unified (Beach, 2011). Additional state support must be concomitant with any new DE initiative (Beach, 2011), yet few state policies provide additional funding to support these partnerships (Taylor et al., 2015). These critiques are relevant to Maine. Selena and April indicated that statewide initiatives should have a greater role in funding and driving programs than they currently do. This point was evident in data from the MCCS on student enrollment in DE programs provided by a key informant, which showed that budgets in the 2014-2015 school year were curtailed. In addition, one potential participant within the MCCS indicated that because her position was reduced from full-time to part-time due to budgetary constraints, she would not be available to answer questions.
In order to improve and expand DE programs, particularly programs that emphasize access for underrepresented students, additional resources may be needed. At the same time, programs must be designed to provide efficiencies in rural areas that are mutually beneficial but do not serve as a competition for limited resources (Howley et al., 2013). According to Taylor et al. (2015), "For community colleges that already receive the smaller share of state funding among public institutions of higher education, compliance with these state policies may come at an increased cost to institutions as an unfunded mandate" (p. 17).

**Implications and Recommendations for Future Research**

Program evaluation with a student focus should be an integral component of institutional research (Scheffel et al., 2015). Future research efforts should focus on a review of student admissions policies, and their effectiveness in ensuring student success. For example, this approach could help determine whether students with higher GPAs or ACCUPLACER scores perform better in their DE college courses. Additional research to investigate the patterns of DE course taking would also benefit both two-year and four-year institutions.

Before programs are evaluated, success has to be defined. According to April, community colleges used to consider enrollment numbers as synonymous with success, but the definition has shifted to include student performance in the classroom. This working definition should be refined in collaboration with other community college leaders to determine if other factors should be included, such as the numbers of students passing their courses or the number of underrepresented students enrolled in courses.
Researchers should also focus on student outcomes from a systems perspective, focusing on the relationships between and among institutions (Thornton et al., 2007). Bronfenbrenner (1994) suggests that the entire ecological system in which human development occurs is composed of subsystems. An ecological model guided by Bronfenbrenner (1994) could provide a way to consider the complexity of the partnerships inherent in DE programs and how these impact student development. Jen noted that developing multiple partnerships will facilitate the bridge between high school and college. She then added that these partnerships should be assessed regularly so that the college courses have merit. For example, Jen’s high school offers a DE college math course. However, there has been no evaluation to determine if the high school students who successfully complete course perform better on the ACCUPLACER than those who do not take this course. This approach may be helpful in determining if the DE programs are providing students with the skills they need for college success. Jen stressed, “We have so much data at our fingertips and do not do enough with it.” Future research should include studying long-term outcomes for students who struggle academically, and determining which aspect of DE programs influence high school completion and college matriculation rates (Cowan & Goldhaber, 2015).

Future research efforts should continue to address the gaps in the literature on DE programs such as the lack of data systems that track students throughout their educational career (Harnish & Lynch, 2005; Reese, 2008; Swanson, 2008). Data that span both the secondary and postsecondary sectors would be particularly useful (Karp & Jeong, 2008). At the same time, data reported have been largely descriptive (Harnish & Lynch, 2005; Johnson & Brophy, 2006; Swanson, 2008), and there have been few empirical studies
Despite some earnest attempts, researchers have found it difficult to control for pre-existing factors such as academic ability (Eimers & Mullen, 2003; Karp et al., 2007; Swanson, 2008) and student motivation (An, 2015; Karp et al., 2007; Karp & Jeong, 2008; Pretlow & Wathington, 2014; Swanson, 2008). In planning efforts to fill these gaps, researchers should look at methods and outcomes in other states to avoid potential pitfalls. For example, Florida also requires students to have a minimum GPA in order to enroll in DE courses, yet researchers have found modest to no effects of DE courses on student performance in college (Pretlow & Wathington, 2014).

Moreover, researchers critical of DE programs are scarce. Some DE professors have asserted that the programs did not work and only perpetuated a cycle of ill-prepared students (Dougan, 2005; Mangan, 2014). In addition, there is a disconnect between the perceived benefits of DE programs and research on how program design and implementation affects student learning (Tinberg & Nadeau, 2011). While my study attempted to partially address the disconnect, some of my findings were consistent with An (2015), who noted that the benefits DE programs may be overinflated and may even have a negative impact in some cases.

In a DE program in Illinois, DE course assessments are tracked, and high school outcomes are compared to matriculated students to ensure consistency in assignments, grading, and projects (Scheffel et al., 2015). This DE program is evaluated through the use of surveys administered to students after they graduate from high school and again three years later. Surveys are also administered annually to high school DE instructors, guidance counselors, and administrators. The authors admitted that low response rates are
common (Scheffel et al., 2015); however, these attempts to gather data represent a proactive approach toward program evaluation. Despite the pitfalls described, Scheffel et al. (2015) noted that obtaining feedback from students who have graduated from a postsecondary institution has provided valuable information. The results in the study by Scheffel et al. (2015) reflected many themes found in this study: most students felt their DE experience was valuable, they were better prepared for college, and they would recommend DE courses to their peers. Researchers could utilize these findings to determine the best approach for DE program evaluation in Maine.

Currently, data on DE students in Maine are limited and aggregated, which is one reason why research questions regarding the demographics of DE students in this study were inconclusive. There are no system-wide processes in place to track all DE courses and students within MCCS. Data should be disaggregated to reveal whether demographic factors have a role in student outcomes (Dowd, 2007). This step will be important in determining whether low-SES students benefit from participation (An, 2013a). Similarly, relationships between geography and access should continue to be explored. For example, Byun et al. (2012) reported that rural students were more advantaged than nonrural students in community social resources, yet fewer rural students earned a bachelor’s degree due to low SES. Additional research on the impact of rurality on DE access and experiences would be helpful. According to Dowd (2007), “If the problem of outcome inequity is not revealed, it is unlikely it will be addressed” (p. 412).

In this study, high school students, college graduates, and DE leaders reported positive student outcomes. These findings merit further research, as few studies have explored why students in DE courses are successful in college (Kanny, 2015). A ccording
to Kanny (2015), additional qualitative research is needed that focuses on student perceptions of the advantages and disadvantages of DE courses. Research efforts should aim to better understand family, peer, and school influences that affect dual enrollment participation, recognizing that high school students with parents who attended college are likely to matriculate, regardless of DE participation (An, 2013a).

**Conclusion**

In conclusion, the MCCS has made tremendous efforts to provide college opportunities for high school students in Maine. The mission of the MCCS is to provide programs to meet the needs of the State’s citizens and the workforce needs of employers (Maine Community College System, 2016a). Outreach efforts such as DE programs align with this mission. The MCCS offers affordable and accessible programs (Jones & Palmer, 2006). The Rural Initiative has exemplified the commitment of the MCCS to ensure access to rural students (Maine Community College System, 2007a) and this study showed that rural students have been able to access DE programs. Furthermore, 92% of the population in the State of Maine live within 25 miles of a community college or outreach center (Jones & Palmer, 2006). As an extension of its mission, thousands of Maine’s high school students have had the opportunity to earn free or low cost transferable college credits due to partnerships with high schools throughout the state.

The results of this study are supported by other research (Fisher & Abbott, 2011; Gallagher, 2015; Governor's Task Force, 2012; Hoffman & Robins, 2005; Plimpton, 2008, 2011), and suggest that high school students who participate in Maine’s DE programs within the MCCS have, for the most part, benefitted from the opportunity to participate in a challenging and rigorous learning experience to help prepare them for
college. The MCCS has demonstrated its commitment to the education of Maine’s high school students by providing thousands of students with affordable college credits. With additional efforts to evaluate programs, unify policy, and collaborate with secondary schools to provide expanded access and support, the MCCS could reach a larger population of Maine’s students and promote college readiness.
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APPENDIX A: RURAL DEFINITION

RURAL INITIATIVE

Rural Definition

A Committee of representatives from the Maine Department of Education, the Maine Department of Labor, and the Maine Community College System has worked to define the term rural as it relates to participation in activities of the MCCS Rural Initiative.

The Committee determined that two factors would prevent a community from being considered rural:

- Population of over 10,000;
- Communities contiguous to towns and cities with populations over 10,000.

Based on these two factors, residents of the communities listed below are not eligible for participation in MCCS Rural Initiative activities.

Maine communities not on this list are considered rural, and their residents are eligible to participate in the activities of the MCCS Rural Initiative.

**Communities Not Considered Rural**

<table>
<thead>
<tr>
<th>Alfred</th>
<th>Gorham</th>
<th>Portland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arundel</td>
<td>Greene</td>
<td>Sabattus</td>
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<td>Auburn</td>
<td>Hallowell</td>
<td>Saco</td>
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<tr>
<td>Augusta</td>
<td>Hampden</td>
<td>Sanford</td>
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<tr>
<td>Bangor</td>
<td>Harpswell</td>
<td>Scarborough</td>
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<tr>
<td>Bath</td>
<td>Hermon</td>
<td>Shapleigh</td>
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<tr>
<td>Benton</td>
<td>Kennebunk</td>
<td>Sidney</td>
</tr>
<tr>
<td>Biddeford</td>
<td>Kennebunkport</td>
<td>South Portland</td>
</tr>
<tr>
<td>Brewer</td>
<td>Lebanon</td>
<td>Topsham</td>
</tr>
<tr>
<td>Brunswick</td>
<td>Lewiston</td>
<td>Vassalboro</td>
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<tr>
<td>Buxton</td>
<td>Lisbon</td>
<td>Veazie</td>
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<tr>
<td>Cape Elizabeth</td>
<td>Manchester</td>
<td>Waterville</td>
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<tr>
<td>Chelsea</td>
<td>Minot</td>
<td>Wells</td>
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<tr>
<td>Dayton</td>
<td>New Gloucester</td>
<td>West Bath</td>
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<tr>
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<td>North Berwick</td>
<td>Westbrook</td>
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<td>Fairfield</td>
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<td>Whitefield</td>
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<td>Falmouth</td>
<td>Old Orchard Beach</td>
<td>Windham</td>
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<td>Freeport</td>
<td>Orono</td>
<td>Windsor</td>
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<tr>
<td>Glenburn</td>
<td>Poland</td>
<td>Winslow</td>
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</table>

(Maine Community College System, 2007b)
APPENDIX B: INTERVIEW PARTICIPANT INVITATION EMAIL

Dear Participant,

My name is Amy Hubbard and I am a Ph.D. candidate in the Higher Education Leadership Program at the University of Maine. My dissertation will focus on dual enrollment (DE) programs in Maine (any program in which high school students enroll in college courses). In addition to conducting a student survey, I plan to interview individuals involved in leading and researching DE programs in Maine. I would appreciate the opportunity to interview you about your experiences and perceptions as a (DE program leader, instructor, policymaker, researcher). Your insights would be very helpful for the purposes of my research.

The interview would take approximately an hour and could be conducted in person or over the telephone at your convenience. With your consent, I plan to record our conversation for future analysis. However, if you are uncomfortable with recording I can take notes instead. Any information shared with me will remain confidential and your individual identity and responses will not be connected to any findings. My hope is to compare the perceptions of DE leaders and researchers with those of DE students in Maine to determine which students are able to access DE programs, and whether student access and experiences vary with program structure.

Please reply to me at amyhubbard1@gmail.com if you would be willing to participate or have any additional questions. Participation in this study is voluntary and you can withdraw at any time. The University of Maine’s Protection of Human Subjects Review Board has approved this study. If you have any questions about your rights as a participant, please contact Gayle Jones, Assistant to the University of Maine’s Protection of Human Subjects Review Board, at 581-1498 or at gayle.jones@umit.maine.edu. If you have any further questions, please do not hesitate to contact me.

Sincerely,

Amy Hubbard,
Ph.D. Candidate, Higher Education Leadership
University of Maine
Amyhubbard1@gmail.com
(207)671-9282
APPENDIX C: INTERVIEW INFORMED CONSENT FORM

You are invited to participate in a research project being conducted by Amy Hubbard, a graduate student in the Higher Education Leadership Department at the University of Maine. Dr. Susan Gardner, Associate Professor, is the faculty sponsor for this project. This study explores student access and experiences in dual enrollment (DE) programs at Maine’s community colleges. Dual enrollment programs are any program in which a high school student takes a college course. The purpose of the research is to compare the perceptions of DE leaders and instructors with those of DE students to determine which students are able to access DE programs, and whether student access and experiences vary with program structure (program purpose, course location, instructors, and student support).

What Will You Be Asked to Do?

If you decide to participate, you will be asked to participate in an interview. The interview would take approximately an hour and could be conducted in person, on the internet using Skype, or over the telephone at your convenience. With your consent, I plan to record our conversation for future analysis. However, if you are uncomfortable with recording I can take notes instead. Any information shared with me will remain confidential and your individual identity and responses will not be connected to any findings.

Some sample questions include:

- Please describe, in general the DE program(s) offered at the community college.
- Please describe the structure of the DE program(s) (program purpose, course location, instructors, and student support)
- Please describe your perception of the relationship between the structure of the DE program(s) and students experiences in the course.
- Please describe your perception of the relationship between demographic factors and student access to DE programs within the DE program(s). How you have witnessed student access among the following categories: gender, race/ethnicity, socioeconomic status, high school academic record (including GPA and standardized test scores), parental education level, and student's rural status.

Voluntary

Participation in the interview is voluntary. You may stop at any time or skip any questions you do not wish to answer.

Confidentiality

To ensure confidentiality, audio recordings of the interviews will be destroyed after data is transcribed. I will create a pseudonym for all interview participants and will use the pseudonym on transcripts. I will create a key to linking participants to pseudonyms. This key will be stored electronically on my computer, which is password protected. The key will also be stored using software to provide additional security. If data contains identifying references, these will be removed to ensure privacy. In addition, in the results and discussion I will report themes only and remove any information linking informants to data. I will not include the names of individual colleges in my findings. All data will be destroyed in June, 2016, when this research project is complete.
**Risks**
Despite the measures to ensure confidentiality, I will be interviewing only ten individuals including DE program leaders and DE course instructors. This small sample size will serve as a risk to participants as I am narrowly focusing on DE programs within the MCCS and the names program leaders are available on MCCS websites.

**Benefits**
While this study will have no direct benefit to you, this research may help us learn more about DE students as individuals, the barriers they face to enrolling in college courses, student experiences within the variety of DE program structures within MCCS, and how students navigate between both high school and college courses simultaneously.

**Contact Information**
If you have any questions about this study, please contact Amy Hubbard at 4 Little Ossipee Trail, Limington, ME, 04049, amylhubbard1@gmail.com, or at (207)671-9282. You may also reach the faculty advisor on this study, Dr. Susan Gardner at 336 Merrill Hall, University of Maine, Orono, ME 04469-5749, susan.gardner@umit.maine.edu (207)581-3122. If you have any questions about your rights as a research participant, please contact Gayle Jones, Assistant to the University of Maine’s Protection of Human Subjects Review Board, at 581-1498 (or e-mail gayle.jones@umit.maine.edu).
APPENDIX D: INTERVIEW SCRIPT

Interviewee Name & Pseudonym:
Thank you for taking the time to meet with me. First, I will ask you questions related to student access to DE programs within the MCCS and student experiences in these programs based on program structure. Then I will ask you about DE policy and the relationship between the community college and local high schools. Finally, I will give you the opportunity to offer any additional insights into DE programs at Maine’s community colleges.

Note: Due to the nature of this semi-structured interview, the following questions may be modified during the interview and new questions may be added as insights emerge.

1. Please describe, in general the DE program(s) offered at the community college.
   a. Geographical location of the college and general information on the area
   b. Cultural attitudes about college (in general), impact of DE program(s) on cultural attitudes

2. Please describe the structure of the DE program(s)
   a. What is the purpose of the DE program(s)?
   b. Where are courses located?
   c. Who are the DE instructors?
   d. Program configuration ranges from individual courses to intensive programs with a focus on a specific student population. Student support varies as well. Please describe the program configuration(s) in the DE program(s).

3. To what extent are high school students involved with the college community?

4. Please describe your perception of the relationship between the structure of the DE program(s) and students experiences in the course.
   a. Course rigor
   b. Student-faculty relationship
   c. College aspirations
   d. DE course grade

5. Please describe your perception of the relationship between demographic factors and student access to DE programs within the DE program(s). Do you feel that underrepresented students have equitable access to DE courses? Please describe how you have witnessed student access among the following categories:
   a. gender
   b. race/ethnicity
   c. socioeconomic status
   d. high school academic record (including GPA and standardized test scores)
   e. parental education level
   f. student’s rural status as defined by the MCCS Rural Initiative (Maine Community College System, 2007b)

6. Please describe your experience with DE program(s).
   a. What are some program challenges?
   b. What have been some of the successes of the DE program(s)?

7. DE policies include regulation of DE instructors’ credentials, admissions requirements, lack of funding, and course location. What impact has DE policy at the state, college, and high school level had on the DE program?
a. What has been the impact of policy in initiating and maintaining a program?
b. What has been the impact of policy on access to DE courses for underrepresented students?
c. Are there any policies that specifically help facilitate access?
d. Are there any policies that specifically hinder access (or have had unintended consequences)?

8. Please describe the relationship between the secondary and postsecondary institutions involved in the DE program(s).
   a. How was this relationship established?
   b. What are some challenges to maintaining this relationship?
   c. What are some strengths of this relationship?
   d. Do you believe the relationship between the high school and community college facilitates or hinders student access? Explain.

9. What (if any) research has been conducted to evaluate the effectiveness of the DE program(s)? What are the criteria for determining program success?

10. Is there anything else regarding DE programs that you would like to mention?

I sincerely appreciate your time. Once this interview is transcribed, I will provide you with a copy of the transcripts for review.
## APPENDIX E: QUALITATIVE INTERVIEW QUESTION ANALYSIS

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>Research Question(s) addressed*</th>
<th>Theoretical Framework</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Quant 1</td>
<td>Critical Theory</td>
<td>Context of the college, demographics of the area (SES, rural, etc.)</td>
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<tr>
<td>1b</td>
<td>Quant 1</td>
<td>CST</td>
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<tr>
<td>2a-d</td>
<td>Quant 2</td>
<td>Critical Theory</td>
<td>A priori code: barriers, systems (positive or negative)</td>
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<tr>
<td>3</td>
<td>Quant 2</td>
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<td>HS student involved in college?</td>
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<tr>
<td>4</td>
<td>Quant 2, Mixed methods research question 3 (MM3)</td>
<td>CST</td>
<td>A priori code: systems (positive or negative)</td>
</tr>
<tr>
<td>5</td>
<td>Quant 1</td>
<td>Critical Theory</td>
<td>A priori code: Barriers, cultural attitudes about college</td>
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<tr>
<td>6</td>
<td>MM3</td>
<td>CST</td>
<td>General perception of program to compare with student perception</td>
</tr>
<tr>
<td>7a,b,d</td>
<td>Quant 1</td>
<td>CST</td>
<td>A priori: barriers System-negative</td>
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<tr>
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<td>CST</td>
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<td>8a-d</td>
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<td>Systems Theory</td>
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<tr>
<td>9</td>
<td>Qual, MM3</td>
<td>CST</td>
<td>General program success</td>
</tr>
</tbody>
</table>

*In addition to the Qualitative Research Question*
APPENDIX F: STUDENT SURVEY

Dual Enrollment

1. A dual enrollment course is any class in which a high school student enrolls in a college class. How many total dual enrollment community college courses have you been enrolled in for at least 8 weeks? Include past and current courses in your total, even if you did not complete the course or earn credit. Please do not include Advanced Placement or international Baccalaureate courses.

   Mark only one oval.
   
   [ ] 1
   [ ] 2
   [ ] 3
   [ ] 4 or more
   [ ] 0

2. In order to enroll in the dual enrollment course(s), what requirements did you have to meet? Please select all that apply.

   Check all that apply.
   
   [ ] I had to take a standardized test and earn a minimum score
   [ ] I had to take another class as a pre-requisite or co-requisite
   [ ] I had to have a letter of recommendation from a teacher, guidance counselor, or principal
   [ ] I had to have a minimum high school GPA
   [ ] I had to be among the top of my class in class rank
   [ ] I had to complete an application
   [ ] I do not know/remember
   [ ] Other: ________________________________

3. Do you feel it was difficult to enroll in the dual enrollment course(s)?

   Mark only one oval.
   
   [ ] Yes  Skip to question 4.
   [ ] No  Skip to question 5.
4. Please explain why you feel it was difficult to enroll in the dual enrollment course(s)?


Dual Enrollment Course #1
The following questions refer specifically to your Dual Enrollment courses(s). Please include information for each course separately. If you have taken more than two courses please include the two most recent courses.

5. Please list the name of the college you enrolled in for course #1.


6. What was the format of course #1?
Mark only one oval.

- Online
- College course on a college campus
- College course on a high school campus during the normal school day
- College course on a high school or satellite campus outside of the normal school day
- Hybrid – both online and on-campus
- Other: __________________________

7. Who was your professor for course #1?
Mark only one oval.

- A college professor
- A high school teacher
- Other: __________________________

8. Who were the students in course #1?
Mark only one oval.

- High school students only
- High school & college students

9. Would you consider course #1 to be challenging?
Mark only one oval.

- Yes
- No
10. In course #1, do you feel your college course has different expectations and procedures than in your high school classes?

Mark only one oval.

☐ Yes  Skip to question 11.

☐ No   Skip to question 12.

Expectations and procedures of college versus high school

11. Please describe how course #1 and your high school courses are different and how you manage these differences.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Experiences in college course(s)

12. Please select the grade range(s) that represents your grade in course #1

Mark only one oval.

☐ A+, A or A-

☐ B+, B or B-

☐ C+, C or C-

☐ D+, D or D-

☐ F

13. Have you ever needed help in course #1?

Mark only one oval.

☐ Yes

☐ No

14. Do you feel like you could ask your instructor for help in course #1?

Mark only one oval.

☐ Yes

☐ No

15. Do you feel better prepared for college because of your experience in course #1?

Mark only one oval.

☐ Yes

☐ No
16. Please explain your answer to the previous question
   Explain why you feel better prepared/do not feel better prepared for college because of your dual enrollment class


17. Did your experience in course #1 impact your desire to attend college after high school?
   *Mark only one oval.*
   ○ Yes
   ○ No

**Tuition and Fees in DE courses(s)**
Please respond based on all of the DE courses you have enrolled in.

18. Did you have to pay any tuition, fees, or purchase books in order to attend any of your DE course(s)?
   *Mark only one oval.*
   ○ Yes  *Skip to question 19.*
   ○ No  *Skip to question 22.*

**Tuition and Fees**

19. Did paying tuition, fees or purchase books cause a financial hardship for your family?
   *Mark only one oval.*
   ○ Yes
   ○ No

20. Please indicate the total amount you had to pay for all of your DE course(s), including books


21. Did your experience in your dual enrollment course make you feel connected to the college community?
   *Mark only one oval.*
   ○ Yes
   ○ No
22. Did you have to travel to a site other than your high school in order to attend any of your DE course(s)?
   *Mark only one oval.*
   
   ○ Yes  "Skip to question 23."
   ○ No  "Skip to question 26."

**Commuting**

23. Please indicate how long (in minutes) your commute to your DE course(s) was.
   If you were enrolled in more than one DE course, please list your longest commute

24. Did you ever find it challenging to commute to your DE course(s)?
   *Mark only one oval.*
   
   ○ Yes  "Skip to question 25."
   ○ No  "Skip to question 26."

**Difficult Commute**

25. Please explain what challenges you faced in commuting to your DE course(s)

**Demographic Information**

26. What is the name of your high school?

27. Which town do you live in?

28. Please select your gender
   *Mark only one oval.*
   
   ○ Male
   ○ Female
   ○ Transgender
   ○ Prefer not to answer
29. Please select the letter grade range(s) that represents your overall high school G.P.A.
Mark only one oval.

☐ A+, A or A-
☐ B+, B or B-
☐ C+, C or C-
☐ D+, D or D-
☐ F
☐ Other: ________________________________

30. How do you describe yourself racially/ethnically? (Select one or more responses.) Check all that apply.

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or Other Pacific Islander
☐ White
☐ Other: ________________________________

31. Does any child in your family (including you) qualify for Free or Reduced Lunch? Mark only one oval.

☐ Yes
☐ No

32. Have any of your parents (including stepparents) earned a college degree? Mark only one oval.

☐ Yes
☐ No

33. Please include any comments or concerns you would like to add that you feel are important for the researcher to consider regarding your experiences in DE programs.
34. Please indicate your student status: *
Mark only one oval.
- I am a high school student  Skip to question 37.
- I am a college student  Skip to question 35.
- I have graduated from college  Skip to question 35.

High School Graduate

35. Please describe how your dual enrollment courses did or did not help you when you went to college.

________________________
________________________
________________________
________________________
________________________

36. If you are 18 years old or older, and are willing to allow the researcher to contact you if there are follow-up questions, please provide your name, email address and phone number.
If you provide your contact information, your responses will not be anonymous. Any information shared will remain confidential. If you do not wish to be contacted, please leave this question blank.

________________________
________________________
________________________
________________________
________________________

Dual Enrollment Course #2

37. Have you enrolled in more than one dual enrollment course?
Mark only one oval.
- Yes  After the last question in this section, skip to question 37.
- No  After the last question in this section, stop filling out this form.

38. Please list the name of the college you enrolled in for course #2.

________________________
39. What was the format of course #2?
   Mark only one oval.
   □ Online
   □ College course on a college campus
   □ College course on a high school campus during the normal school day
   □ College course on a high school or satellite campus outside of the normal school day
   □ Hybrid – both online and on-campus
   □ Other: ________________________________

40. Who was your professor for course #2?
   Mark only one oval.
   □ A college professor
   □ A high school teacher
   □ Other: ________________________________

41. Who were the students in course #2?
   Mark only one oval.
   □ High school students only
   □ High school & college students

42. Would you consider course #2 to be challenging?
   Mark only one oval.
   □ Yes
   □ No

43. In course #2, do you feel your college course has different expectations and procedures than in your high school classes?
   Mark only one oval.
   □ Yes  *Skip to question 44.*
   □ No  *Skip to question 45.*
44. Please describe how course #2 and your high school courses are different and how you manage these differences.

________________________________________

________________________________________

________________________________________

________________________________________

Grades in Course #2

45. Please select the grade range(s) that represents your grade in course #2
   Mark only one oval.
   
   ☐ A+, A or A-
   ☐ B+, B or B-
   ☐ C+, C or C-
   ☐ D+, D or D-
   ☐ F

46. Have you ever needed help in course #2?
   Mark only one oval.
   
   ☐ Yes
   ☐ No

47. Do you feel like you could ask your instructor for help in course #2?
   Mark only one oval.
   
   ☐ Yes
   ☐ No

48. Do you feel better prepared for college because of your experience in course #2?
   Mark only one oval.
   
   ☐ Yes
   ☐ No
49. Please explain your answer to the previous question
   Explain why you feel better prepared/do not feel better better prepared for college because of
   DE course #2

   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

50. Did your experience in course #2 impact your desire to attend college after high
    school?
    *Mark only one oval.*
    ☐ Yes
    ☐ No
## APPENDIX G: QUANTITATIVE SURVEY QUESTION ALIGNMENT

<table>
<thead>
<tr>
<th>Survey Question #</th>
<th>Research question addressed-Null hypothesis correlation</th>
<th>Conceptual Framework</th>
<th>Notes</th>
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<td>Additional questions contact information (high school graduate)</td>
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Hi,

My name is Amy Hubbard and I taught biology at Bonny Eagle High School in Standish, ME. I am currently a graduate student at the University of Maine working on my dissertation on dual enrollment (DE) programs at Maine Community Colleges. I hope to help educators plan future programs by learning more about the experiences students have in the different types of DE programs at Maine’s community colleges.

I am writing to request your help in distributing this email to high school students in community college classes:

http://goo.gl/forms/XHZsJvTE2t

The electronic survey may take up to 20 minutes to complete and has been approved by the University of Maine’s Protection of Human Subjects Review Board. If you feel students would be more likely to participate if a hard copy of the survey was provided, please let me know and I will mail surveys and provide a return postage paid envelope.

If you know of other individuals that may be able help, please forward this email or let me know and I will contact them directly.

I sincerely appreciate your support. Please let me know if you have any questions.

Sincerely,

Amy Hubbard
PhD candidate
University of Maine
(207)671-9282

---

Hi,

My name is Amy Hubbard and I taught biology at Bonny Eagle High School in Standish, ME. I am currently a graduate student at the University of Maine working on my dissertation on dual enrollment (DE) programs at Maine Community Colleges. I hope to help educators plan future programs by learning more about the experiences students have in the different types of DE programs at Maine’s community colleges.

As a high school graduate who took dual enrollment courses when you were in high school your perspective is very valuable and I am hoping you will participate in the electronic survey at the following link:

http://goo.gl/forms/XHZsJvTE2t

The electronic survey may take up to 20 minutes to complete and has been approved by the University of Maine’s Protection of Human Subjects Review Board.
If you know of other individuals that may be able help, please forward this email or let me know and I will contact them directly.
I sincerely appreciate your support. Please let me know if you have any questions.

Sincerely,

Amy Hubbard
PhD candidate
University of Maine
(207)671-9282
APPENDIX I: STUDENT SURVEY INFORMED CONSENT FORM

You are invited to participate in a research project being conducted by Amy Hubbard, a graduate student in the Higher Education Leadership Department at the University of Maine. Dr. Susan Gardner, Associate Professor, is the faculty sponsor for this project. The purpose of the research is to learn about student access and experiences in dual enrollment programs at Maine’s community colleges. Dual enrollment (DE) programs are any program in which high school students enroll in college classes.

Am I eligible to participate in this survey?
Dual enrollment programs are any program in which high school students enroll in college courses. These include classes taught by a high school teacher during the normal school day as long as you could earn college credit as a result of successful completion of the course. Please complete this survey only if you have ever enrolled in any DE community college course for at least 8 weeks, even if you did not complete the course or earn a passing grade. Please do not complete this survey if you are only enrolled in an Advanced Placement course, International Baccalaureate course, or dual enrollment course offered by a four-year college.

What Will You Be Asked to Do?
If you decide to participate, you will be asked to complete the survey using the link provided (for online participation), or the paper survey. It may take approximately 20 minutes to participate.

Voluntary
Participation in this survey is voluntary. You may stop at any time or skip any questions you do not wish to answer. Return of the survey implies consent to participate.

Confidentiality
HIGH SCHOOL GRADUATE
If you are a high school graduate who is 18 years old or older, and are willing to allow the researcher to contact you if there are follow-up questions, you will be asked to provide your name, email address and phone number. If you provide your contact information, your responses will not be anonymous. Any information shared will remain confidential. I will create a pseudonym for you and will replace your contact information with that pseudonym. The key linking your name to the dataset will be stored on my password protected computer and encrypted. All data will be destroyed upon completion of the project in December, 2016. If you do not wish to be contacted, you may leave this question blank and your responses will be anonymous.

HIGH SCHOOL STUDENT
If you are a high school student, please do not write your name on the questionnaire. The survey will be anonymous and there will be no records linking you to the data. The data will kept until Dec, 2016, and then destroyed, when this research project is complete.

Risks
Except for your time and inconvenience, there are no risks to you from participating in this study.

Benefits
While this study will have no direct benefit to you, this research may be helpful for DE program leaders to use in planning future courses. The goal of this research is to learn
more about DE students as individuals, the barriers students face in enrolling in college
courses, experiences students have in the different types of DE programs at Maine’s
community colleges, and how students adapt to taking high school and college courses at
the same time.

Contact Information
If you have any questions about this study, please contact Amy Hubbard at 4 Little
Ossipee Trail, Limington, ME, 04049, amylhubbard1@gmail.com, or at (207)671-9282.
You may also reach the faculty advisor on this study, Dr. Susan Gardner at 336 Merrill
Hall, University of Maine. Orono, ME 04469-5749, susan.gardner@umit.maine.edu
(207)581-3122. If you have any questions about your rights as a research participant,
please contact Gayle Jones, Assistant to the University of Maine’s Protection of Human
Subjects Review Board, at 581-1498 (or e-mail gayle.jones@umit.maine.edu).
APPENDIX J: FOLLOW UP QUESTIONS FOR HIGH SCHOOL GRADUATES, 18 YEARS AND OLDER, WHO PROVIDED CONTACT INFORMATION

1. You indicated in your survey that you took DE courses (at your high school/on a college campus/online). Do you feel that the (location of the course/course instructor) had an impact on your learning experience?

Sample probing questions depending on student survey responses:

- How would you compare the difficulty of the DE course that you took (during the school day in your high school/on a college campus) to the classes you have had in college.
- You indicated in your survey that you (did/did not) feel like you could ask your DE instructor for help. Could you explain why you felt that way? Do you think you would feel differently if the course were in a different location/had a different instructor?
- You indicated in your survey that you felt like your DE course helped prepare you for college. Could you explain how that course was different from your high school courses?

2. Some leaders of DE programs believe that when students take a DE course and are successful, it helps students gain confidence that they can be successful when they go to college. Based on your experience, do you agree? Explain.

3. Some leaders of DE programs believe that in order to give students a true college experiences, high school students must attend college classes on campus with other college students. Based on your experience as a high school student who took courses (at your high school/on a college campus/online), do you think this is important to ensure a college experience?

4. When you first enrolled in a DE course while you were in high school, your permanent college transcript was created based on that course. Was this something that you were aware of? Did you understand that that those grades would remain on your college transcript throughout your college experience? Now that you are a college student/graduate, how have the grade(s) earned in your DE course affected your college transcript/G.P.A.?

5. Describe the process of transferring the DE college credits to the institution you attended (Did all credits transfer? Was there any difficulty with transfer of credits?)

6. Did you benefit financially from earning DE college credits?

7. Did you benefit by graduating sooner because you earned DE college credits?
BIOGRAPHY OF THE AUTHOR

Amy Lynn Hubbard was born in Berlin, New Hampshire on October 23, 1974. She was raised in Milan, New Hampshire and graduated from Berlin High School in 1992. She attended the University of New Hampshire and graduated in 1997 with a Bachelor’s degree in Horticulture and Agronomy. She moved to Maine and earned a Master’s degree in Education at the University of Southern Maine in 2002. Amy was a biology teacher at Bonny Eagle High School in Standish, Maine when she entered the Higher Education Leadership graduate program at The University of Maine in the fall of 2007. Amy is currently employed as a Science Assessment Specialist at Measured Progress in Dover, New Hampshire. Amy is a candidate for the Doctor of Philosophy Degree in Education with a concentration in Higher Education from the University of Maine in December 2016.