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An Exploration of Success Factors from the Perspectives of Developmental Mathematics Students

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AN EXPLORATION OF SUCCESS FACTORS FROM THE PERSPECTIVES OF DEVELOPMENTAL MATHEMATICS STUDENTS

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ABSTRACT

Students who enter college underprepared for college-level coursework face tremendous barriers, including referral to one or more levels of developmental education. However, the requirement to complete developmental mathematics often becomes a primary barrier for students ever being able to complete a degree. Students who enter underprepared for college-level coursework and also identify as first-generation face even larger barriers to realizing success. Given this reality, community colleges – where most developmental education programs are housed – are seeking ways to better support students needing remediation to increase their chances of success and completion. Using the recently implemented co-requisite model of instruction in a community college, this qualitative research with first-generation students examines the influence of successfully taking developmental and college-level mathematics courses during the same semester. Fifteen participants were interviewed in an effort to learn the key factors to which they attribute their success through the developmental mathematics course. The Voice-Centered Relational Method of analysis was used and I-Poems constructed from each participant interview. Students attributed their success in the developmental mathematics co-requisite model coursework to six key factors. Key factors supporting student success that emerged from the data analysis of participant interviews were instructor practices, institutional supports, familial support, classroom environment, setting an example, and class format. Findings from this study have implications for community college administrators, faculty, and students, high school personnel, and families of community college students.

To have striven, to have made the effort, to have been true to certain ideals - this alone is worth the struggle." **--*William Osler***

I dedicate this work to all community college students, especially those who ever thought they might not be successful.

This dissertation is also dedicated to my mother, husband, and two children.

To my mom, who without being formally educated beyond high school, placed a high value on education and taught me that anything is possible if one is willing to work for it. Without your example of hard work and dedication, I would never have had the courage to attempt my undergraduate, graduate, and doctoral coursework. You helped me believe in making the impossible a reality despite obstacles that presented themselves along the way. Thank you for clothing me in strength and for all of your sacrifices to make sure I had the greatest chance at being successful in life.

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Chapter 1

Introduction

Context of the Problem

Low rates of college completion are a major problem in the United States. During the first decade of the 21st century, total undergraduate enrollment in higher education increased by 37% to 18.1 million, with 7.7 million of this total attending community colleges (Snyder & Dillow, 2013). During this same period, undergraduate graduation rates changed very little. The number of full-time students completing a bachelor's degree increased by only 2.9%, while those graduating from a two-year college showed a slight decrease of 0.6% (2013). This lack of significant improvement on graduation rates may be related to the large number of students entering college without the basic skills needed for college-level coursework. About 40% of students come to college underprepared (Roueche & Waiwaiole, 2009; Wilmer, 2008). For community college students, that number increases to 60% (Gonzalez, 2010; Levin & Calcagno, 2008; Pretlow III & Wathington, 2012).

In some community colleges, the percentage of underprepared students reaches 95% (McClenney, 2009). The underprepared students do not have the necessary reading, writing, and/or mathematical skills to be successful in college (Kozeracki & Brooks, 2006). Scores on computer adaptive placement tests are often used to identify students who have weak skills (Bailey, 2009). Colleges design specialized courses called *developmental* or *remedial* to help them improve their skills. Other terms that may be used to refer to these remedial courses include transitional, learning assistance, basic skills, preparatory, and precollegiate (Casazza, 1999).

Although underprepared students are generally required to take a sequence of developmental education courses across one or more subject areas, they have lower than average persistence and success rates. Underprepared students often have low persistence and success rates, at least in part, because they are required to take a sequence of developmental education courses across one or more subjects before being ready for college-level coursework (Hagedorn, 2010; Wilmer, 2008). The students' low persistence can be due to the fact that enrollment in developmental education is often discouraging, as students earn no college credit for the time they spend remediating their skills in these courses, which often span multiple semesters. Additionally, students are required to pay tuition for developmental education coursework even though they accrue no college credit. Despite the difficulties of making it through developmental courses, the investment is worthwhile. Students who complete developmental education courses have a greater chance of being retained than students who are underprepared and do not complete developmental education courses (Bahr, 2010; Craig & Ward, 2007; Fike & Fike, 2008).

However, only about 30% of students complete their developmental course tracks (Bahr, 2008; Bailey, 2009). Many more get frustrated and drop out before completing a degree or transferring to a four-year institution (Brothen & Wambach, 2012). While only about half of all community college students who enter during the fall semester do not return for the spring semester, rates are even lower for underprepared students (American Association of Community Colleges, 2012; McClenney, 2009). Only a small percentage of underprepared students are successful (Bahr, 2010; Boylan, 2009). Researchers have identified underprepared students as having poor academic skills, uncertain goals, and trouble connecting with the college environment (Calcagno, Crosta, Bailey, & Jenkins, 2007; Mulvey, 2009). Without early

intervention programs, these students may not persist. The co-requisite model of developmental education instruction is one intervention community colleges are implementing at their institutions to increase retention rates.

The co-requisite model is an initiative designed to give more students access to gateway courses, paired with additional academic support. With more students having access to the gateway college-level course and receiving additional academic support as needed, it is the hope that mathematics pass rates will increase and ultimately lead to higher graduation rates. Early results of the co-requisite model show improvements in pass rates for both the developmental course and the college-level course for all levels of students (McTiernan & Fulton, 2013). A community college in Tennessee implemented the co-requisite model with signs of early success. Nearly 650 students across nine campuses were enrolled in the pilot implementation of the co-requisite model within the mathematics curriculum. Enrollment was not limited to a certain level of student. Any student needing mathematics remediation was eligible to enroll in the newly offered co-requisite model (Denley, 2015).

Success was not only attained in Tennessee; other states are also seeing success with early implementation of the co-requisite model. Nationally, the developmental courses within the co-requisite model have been shown to be successful in increasing the performance of remedial students (Boylan, 1999). Within the California redesign, the results show that remedial students enrolled in the co-requisite model made statistically significant improvements in their mathematics achievement as documented by standardized tests (Mireles, Acee & Gerber, 2014). California's redesign included 16 community colleges and involved a variety of new instructional models, including the co-requisite model. Through spring 2013, the combined instructional approaches–noted as the accelerated model–increased completion rates of students

who tested into remediation to 38%, whereas completion rates were 12% with the traditional model (Hayward & Willett, 2014).

All of the participants in this study completed their developmental mathematics course under the co-requisite model during the spring 2015 semester. At the institution where the study took place, the co-requisite model was implemented in the fall of 2013. While studies show the mathematics co-requisite model to be successful, more specific research is needed to explain what makes this instructional model more effective than traditional models.

Due to the decline in retention and graduation rates, many institutions are taking a closer look at the needs of at-risk populations in an effort to retain them at higher rates (London, 1989; Riehl, 1994). One of the at-risk populations is first-generation college students. In general, first-generation students have lower entrance scores on their college admission tests (Berkner & Chavez, 1997; Hahs-Vaughn, 2004; Horn & Bobbitt, 2000) and are less likely to attend college within eight years of completing high school (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). The term *first-generation student* can be defined in multiple ways. For the purposes of this study, first-generation students are those who have enrolled in college coursework and come from a family where their parents or guardians did not earn a college degree. With the added pressure of entering college underprepared for college-level coursework, first-generation students in developmental education drop out at a higher rate than those whose parents attended college. There is a gap in scholarly literature privileging the voice of first-generation students who can speak to their experiences in developmental education.

Hearing from first-generation students who have completed developmental education could be helpful in multiple ways. For starters, it would give other students who are facing similar challenges some guidance on what steps they can take to help them be successful.

Secondly, college administrators can use what students say about their experiences in developmental education to inform decisions about supports that they might put in place at their institutions. Student experiences are important to understanding which support systems are working for students and which are in place that students do not find helpful.

In the early 1900s, a number of educators and social critics noted the exclusion of student voices from conversations about learning, teaching, and schooling; called for a rethinking of this exclusion; and began to take steps towards restoring it (Cook-Sather, 2006). Fullan (1991) asked, "What would happen if we treated the student as someone whose opinion mattered?" (p. 170), and Levin (1994) argued that the most promising reform strategies involved treating students as capable persons, capitalizing on their knowledge and interests, and involving them in determining goals and learning methods. "Instead of treating school students as voices crying in the wilderness, we would be far better served if we asked the voices' owners what they think and listened actively to the answers" (Youens & Hall, 2004, p. 4). This study aims at hearing directly from students who completed their developmental mathematics course under the newly implemented co-requisite model at a large community college system.

Purpose of the Study

The students served in developmental education courses are those who arrive at college underprepared for college-level coursework. These students struggle to perform adequately on placement exams and in college-level coursework, as they do not possess the foundational reading, writing, or mathematics skills necessary to succeed in general education and required courses in their majors. Approximately 4.6 million community college students are required to take one or more developmental education courses (Gonzalez, 2010; Snyder & Dillow, 2013). Many of these students will never attain their educational goals because they will not complete

the developmental education course sequences (Bonham & Boylan, 2012). This fact illustrates the greatest challenge for community colleges: helping underprepared students succeed in college-level work (Bailey, 2009; McClenney, 2009). The students who complete developmental education courses can help identify what helped them be successful. Their input can help institutions build student-centered responses that can address the problem of low success rates for those who enter college underprepared.

The purpose of this dissertation project is to identify the key factors first-generation community college students, who successfully complete the developmental math sequence, perceive as contributors to their success. This population successfully completed a developmental mathematics education course delivered under the co-requisite model. There is a lack of attention to students' descriptions of their experiences in developmental education. In an effort to inform design of developmental education programs, it would be beneficial to solicit the view of those who completed developmental education courses and know the program best. This study is designed to do this.

Epistemological Framework

This study is grounded in a constructivist framework. Constructivist researchers investigate constructions or meanings about broad concepts such as cultural values, or more specific issues or ideas, such as the possible ingredients of the dynamic, creative public library of the future and how to create it (Williamson, 2006). This study analyzed first-hand accounts of first-generation college students' experiences in and out of college while participating in a developmental education course track. The students who have successfully completed developmental education are the most experienced with the courses and are informative sources regarding what helped them get through the track. The participants in this study will have

constructed meaning by their interactions with and interpretations of developmental education through their own unique lens.

The constructivist research paradigm is a model of research assumptions that argue that learning and knowledge creation are socially constructed by people and that there is no one objective reality. Instead, the world, reality, and research should be interpreted from multiple subjective perspectives, and research is inevitably influenced by the values and beliefs of both researchers and participants, as well as from previous knowledge used in conducting research (Mertens, 2010). Multiple realities exist in the constructivist paradigm, as there are many ways to obtain the same knowledge through different social constructions. Furthermore, the constructivist position asserts that knowledge cannot be discovered or found, but rather constructed and that it develops throughout the learning process.

Qualitative research is aligned with this world view in its valuing of the participants' perspectives regarding a given situation (Creswell, 2008). In this study, I asked participants to describe their journeys into and through developmental mathematics education courses. Such inquiry may "offer especially translucent windows into cultural and social meanings" (Patton, 2002, p. 116). The results of this study will generate recommendations made to institutions of higher education on best practices for helping underprepared students persist and succeed. In addition, as students meet with high school counselors to discuss their future plans and goals, counselors with this information can better advise those entering community colleges. The audience for this particular study would be students currently enrolled in developmental education, administrators and faculty members at community colleges, and potential students looking to enroll in college but fearful of being underprepared.

The Researcher

As a former faculty member at a small community college in a southeastern state, I found myself questioning why so many new students found themselves in a series of remedial classes before entering their college-level coursework and struggled to successfully complete the course tracks. The community college where I served as an instructor of early childhood education for three years offered a total of seven developmental-level courses. Students would often come to their advising sessions bearing the news of their mandated enrollment in all seven of the available developmental education courses as a result of their placement test scores. The developmental education course sequence at the college only allowed students to take a maximum of three developmental education courses per semester. I found myself struggling with the reality that even if these students enrolled and completed three developmental education courses per semester, they would be required to spend anywhere from two to three semesters as full-time college students earning no credits towards their degree and paying full tuition.

I made it an important part of my advising sessions to share success stories, motivational quotes, and recommendations for successful completion of developmental course tracks and entry into college-level coursework. My hope was that students would carry my words with them as they navigated their way through the beginning semesters of their journey through college. Many of these students told stories of being the first in their families to attend college and the reality that higher education was not something they were comfortable navigating. These students in particular touched my heart. I related to them, as I, too, was the first in my family to attend college and did not have a point of reference for what college was all about.

Researcher Assumptions

I have spent the past year and a half as an Instructional Designer at the institution in which this study occurred. Prior to that, I was a faculty member and advisor at a much smaller

community college. When I did advisement, I also had to call on my own experience as a first-generation student who lacked a role model to look to for guidance as I began the journey into higher education.

My experiences shaped the questions I asked participants and the ways I analyzed the data. From my own personal experience as a first-generation student, my first assumption was that the students would advocate for themselves. This assumption is primarily based on the fact that I had had to advocate for myself in order to become successful in college. This assumption was also due to the fact that a large number of students enrolled in developmental education courses are considered emerging adults (ages 18-25) or adults (age 26 and up); adult development and learning theories tell us that adult students are generally capable of advocating for themselves (Arnett, 2000).

My assumptions for this specific study include the idea that the participants will be able to detail their experiences through the mathematics developmental education course and actually have key factors they can name to which they attribute their success through their assigned developmental mathematics course. Furthermore, I assumed students actually believed the experience they had in developmental mathematics was full of positive aspects and memories.

Research Question

This study examines key success factors according to students who successfully completed a developmental mathematics course in a community college. Overall, I will consider the factors described by students during interviews and consider how these factors helped them to be successful. This study may help colleges and universities improve their efforts to support students. The research question for this study is: How do community college students in developmental education perceive key factors that have contributed to their success?

Significance of Study

This study meets a need in the community college setting. Mathematics has been a barrier to obtaining college credentials, as 60% to 70% of students who need mathematics remediation never complete the remedial sequence and cannot graduate (Bryk & Treisman, 2010). Community colleges need ways to improve student success rates so they can earn their associated degrees or credentials. This study will name and describe the key factors students who have successfully completed a developmental mathematics course attribute to their success. Learners who have successfully completed developmental education tracks should be heard. This research study focuses on those who successfully navigated their way through developmental mathematics at a community college and the supports to which they attribute their success. The model utilized at the institution where this study took place is a newer model of developmental education.

Theoretical Framework

In addressing the topic of this study–the key factors to which developmental mathematics students attribute their success–I will explore multiple theoretical perspectives. Adult learning theories provide insight into how adults learn and can help adult educators be more effective in their practice and more responsive to the needs of the learners they serve. There is no single learning theory that can be applied to all adults, so special consideration must be given to each adult learner (Brookfield, 1986). Andragogy is a generally accepted theory describing the needs of adult learners. The second theory needed as a framework for this study is Tinto's (2007) Student Persistence Theory. Third, Rendón's Validation Theory will be used as a lens to analyze the data. These theories are discussed in more detail in the following sections.

Andragogy. In an effort to clarify the differences between the ways adults and children learn, Malcolm Knowles (1984) popularized the concept of andragogy, the "art and science of helping adults learn" (p. 6). Malcolm Knowles' theory of andragogy is a learning theory developed around the specific needs of adults. In contrast to pedagogy–or learning in childhood–Knowles' theory emphasizes that adults are self-directed and are both capable of and expected to take responsibility for decisions.

Knowles (1980) posited a set of assumptions about adult learners. He elaborated two dimensions of andragogy: its assumptions about the characteristics of adult learners and the process elements of adult education that stem from these characteristics. Knowles initially related four basic assumptions and added a fifth and sixth in later publications. He asserted that the following adult characteristics are key to guiding instruction:

- Self Concept: As people mature, they move from being dependent learners toward being more capable of making decisions about their own learning;
- Experience: As people mature, they accumulate a growing set of experiences that provide a rich resource for learning;
- Readiness to learn: As people mature, they are more interested in learning subjects that have immediate relevance to their jobs or personal lives;
- Orientation to learn: As people mature, their time perspective changes from gathering knowledge for future use to immediate application of knowledge;
- Motivation to learn: As people mature, they become motivated by various internal incentives, such as need for self-esteem, curiosity, desire to achieve, and satisfaction of accomplishment;

- Relevance: As people mature, they need to know why they need to learn something (1984, p. 43).

Knowles lists these six assumptions with the understanding that adults will have more experiences than children and will have developed beliefs about themselves that shape who they are as learners. Experience is the most important, as adults are focusing more on the process than on the content being taught. “Andragogy is an organized and sustained effort to assist adults to learn in a way that enhances their capacity to function as self-directed learners” (Mezirow, 1991, p. 21). Through this view, these assumptions become a personal interactive agreement between the learner and the learning endeavor, the “experience” (Birzer, 2004).

Tinto’s Student Persistence Theory. There are various triggers that result in students leaving institutions without successfully completing their programs of study. Investigating first-generation developmental education student experiences through the lens of student success requires the researcher to consider retention strategies at higher education institutions. Tinto’s (1993) student persistence theory suggests that students who are well-integrated into the academic and social realms of the college they attend are more likely to persist than those who are not. Tinto (1993) identifies three major sources of student departure: academic difficulties, the inability to resolve educational and occupational goals, and failure to become or remain incorporated in the intellectual and social life of the institution. Tinto’s (1993) Model of Institutional Departure states that “to persist, students need integration into formal (academic performance) and informal (faculty and staff integrations) academic systems and formal (extracurricular activities) and informal (peer-group interactions) social systems” (p. 5).

Rendón's Validation Theory. For many students, finding validation as learners is critical to their success in college. Holistic approaches to teaching and learning, such as the Validation Theory developed by Laura Rendón (2013), can aid educators who are working with students in developmental education. Validation theory is rooted in an ethics of care, one that opens the classroom as a space sensitive to the concerns of multiculturalism and social justice issues while balancing it with a phenomenological interest in the interpersonal. As a teaching methodology, Validation Theory does not rely solely upon exposing students to academic content, but seeks to counter their overwhelming sense of anxiety. It is, therefore, an appropriate approach for helping many students placed into developmental education coursework, who would otherwise view college as a stress-inducing environment of assessment and judgment. The participants shared glimpses of how validation played a role in their success through developmental mathematics.

Definition of Key Terms

Throughout this dissertation, I will use multiple terms that can be interpreted or utilized in different ways. The following definitions will support comprehension of this dissertation.

- *ACCUPLACER ®:* The placement test utilized at many community colleges to determine what skills incoming students need to strengthen. Schools will determine what their score benchmarks are and which particular set of courses students will take before enrolling in college-level coursework based on their ACCUPLACER ® score. ACCUPLACER ® is an integrated system of computer-adaptive assessments designed to evaluate students' skills in reading, writing, and mathematics. The test is automated and delivers results to the students and the institution immediately.

- *College-level:* College-level is defined as the minimal competency level of knowledge or reasoning associated with the ability to successfully complete certain courses of study designed to lead to a degree (Arendale, 2007).
- *Co-Requisite Model:* The co-requisite model designed at the site of this study is the concurrent enrollment of students in a developmental level mathematics course and a college-level mathematics course. For the purpose of this study, the mathematics co-requisite model was the only modality in which students could complete their developmental mathematics requirement. Students who were required to take the developmental mathematics course were enrolled in the co-requisite MATH 080 and the college-level MATH 123 at the same time.
- *Developmental Education:* Developmental education is defined as counseling, advisement, coursework, and services used to address a lack of academic preparation, assessment, placement, specific learning strategies, and barriers to learning (National Association for Developmental Education, 2010).
- *First-generation College Student:* The term first-generation student can be defined in multiple ways. For the purpose of this study, first-generation students are defined as those who have enrolled in college coursework and come from a family where their parents or guardians did not earn a college degree.
- *Success:* For this study, success is defined as the completion of a developmental mathematics course with a grade of C or better and the completion of a college-level mathematics course with a grade of C or better.
- *Underprepared Students:* Underprepared students are students who do not have the necessary reading, writing, or mathematical skills needed to succeed in college as

measured by standardized tests (Kozeracki & Brooks, 2006). For the purpose of this study, only those students without the necessary mathematical skills were selected as participants.

Overview of Each Chapter

This dissertation is organized into six chapters, followed by a list of references and appendices containing documents used in this study. This chapter provides an overview of the topic, the problem and the primary question being explored, my personal connection to the topic, and the theoretical framework, and it also offers some key definitions of terms. Chapter 2 focuses on a review of the literatures that frame the primary research topic: the community college, developmental education, first-generation students, and strategies for success. Chapter 3 summarizes the methodology I used to conduct the study and a research design, which includes a description of the population selected, data collection procedures, and the procedures used in data analysis and interpretation. Chapter 4 presents narratives from the participants in the study. Chapter 5 discusses common themes that emerged from the participants' stories. Chapter 6 closes this dissertation with conclusions drawn from the findings, recommendations for further research, implications for practice, and a final reflection.

Chapter 2

Literature Review

Overview of Chapter

In this chapter, I provide a review of the literature connected to the research question: How do first-generation community college students in developmental mathematics perceive key factors that have contributed to their success? The literature was collected from peer-reviewed journals, books, and online resources which describe relevant theory and research studies. The review begins by defining the community college setting as well as a historical timeline of student retention and Tinto's Student Persistence theory. Next is a description of research on first-generation students as well some of the struggles they face. The discussion then describes developmental education and the need for assisting underprepared students in college. The chapter concludes with a brief discussion of Rendón's Validation Theory and how it could help influence practices adopted in community college settings to increase student success and persistence rates.

Community Colleges

Community colleges are defined as institutions where the majority of the degrees granted are at the associate or certificate level (U.S. Department of Education, 2013). Community colleges are also referred to as junior colleges (Cohen & Brawer, 2008). Other designations include technical institutions, vocational schools, technical and adult education, people's colleges, and democracy's colleges, although these terms are not always interchangeable with community college (Beach, 2011; Brown, 2012; Cohen & Brawer, 2008). The various names for community colleges demonstrate how they fulfill a variety of needs for their stakeholders. Filling this large variety of needs presents unique challenges.

In order to understand the unique needs and challenges of community colleges it is important to understand their mission as the charge leads to a conversation about the students they serve. Community colleges were originally established as institutions with open enrollment for any person who desires the opportunity to pursue a higher educational degree (Craig & Ward, 2007). Over 95% of community colleges have an open admission policy; students are accepted for admission based solely on their having obtained a high school diploma or equivalent, not on their academic abilities (Provasnik, Platy, & National Center for Educational Statistics, 2008). Community colleges offer open, affordable access to higher education; provide comprehensive services that benefit not just the individual student but also whole communities; and maintain a constant commitment to teaching and learning (Vaughn, 2000). This desciption demonstrates that community colleges must meet the needs of a wide array of students with highly varied academic abilities.

The scope of community colleges cannot be understood by only considering their open access mission; there must also be consideration for the role they have in serving the needs of their local communities. Today's comprehensive community college is both a principle provider of academic instruction–often leading to transfer to four-year colleges and universities–and a major provider of vocational preparation and workforce development through stand-alone adult training degree and non-degree programs. The curriculum and program offerings are comprehensive, so as to support those seeking academic transfers to four-year institutions, technical education, continuing and adult education, and developmental education (Beach, 2011; Cohen & Brawer, 2008). Community colleges have developed programs that offer students education and training for careers that can prepare them for placement in entry-level positions. The degrees community colleges offer are called Associate of Applied Science degrees and are

designed specifically to help students enter the workforce. The traditional college-level courses lead to an Associate of Arts degree and prepare students for further study toward a bachelor's degree, but students can also work toward certificates and other professional, non-degree credentials (Cohen & Brawer, 2008).

The open access mission and wide array of programming has made community colleges increasingly vital in the higher education sector. Since 1970, the number of students attending two-year institutions has increased 323% compared to 209% for four-year institutions (Snyder & Dillow, 2013). Enrollment has continued to increase into the 21st century. From 2007 to 2009, enrollment in community colleges increased about 17% (Brown, 2012). In 2009, the highest percentage to date of recent high school graduates (70.1%) chose to attend a postsecondary institution, with 27.7% attending a two-year institution–also the highest percentage on record (Snyder & Dillow, 2013).

Although community colleges have provided access to higher education for millions of students, the success rates are relatively low (American Association of Community Colleges, 2012). Research has found that 84% of students who attend a community college plan to earn an associate's degree, but only 45% had reached that goal within six years of beginning the process (American Association of Community Colleges, 2012; Brown, 2012). Fourteen percent do not earn a single credit during their first semester of college (McClenney, 2009). In the next section, I will describe the history of student retention as a means of framing the need for supports in order for students to be successful in their college coursework.

Student Retention

The issue of student retention has been a major concern for educational institutions and educators since the establishment of a formal education system. In order to understand this

concern, it is important to review the history of the problem systematically. Berger, Ramirez, and Lyon (2012) divided the development of student retention studies chronologically into nine eras, as listed in Table 1 (p. 13). These eras begin by describing the prehistory of a focus on student retention and continue to the current era, in which the theoretical and conceptual foundations of the phenomenon have been established and the implications set.

Table 1: Eras of the development of student retention theories

Era	Period
Retention Prehistory	1600s – mid-1800s
Evolving towards retention	Mid-1800s – 1900
Early developments	1900 – 1950
Dealing with expansion	1950s
Preventing dropout	1960s
Building theories	1970s
Managing enrollment	1980s
Broadening horizons	1990s
Early 21st century	Current and future trends

In this section, I will focus primarily on reviewing the 20th century in order to relate the challenges of retention to community colleges, which largely developed over this time. Between the 1850s and 1900s, higher education began to deal with the concept of retention. At about this time, the Morrill Land Grant Colleges Act created at least one land grant institution in every state. Even though this act created numerous universities, postsecondary enrollment nationwide actually declined (Seidman, 2005). From the 1900s to the 1950s, educators considered methods

to increase enrollment, saw increased enrollment due to industrialization, and began to recognize the need to consider student retention rates. College degrees became a mark of distinction and high attrition was viewed as an indicator of the rigor of the university. In the 1930s, McNeely conducted the first study of what was termed student mortality rates. McNeely (1937) considered this study as "the first step in determining the advisability of reforms in higher education" (p. 1). This trend of identifying potential reforms to improve student retention continues through today. McNeely believed it was critical to base decisisons about potential educational reforms on data related to student retention.

While McNeely began looking at student retention in the 1930s, the problem of retaining students became even more challenging due to reforms that caused spikes in enrollment. The G.I. Bill and the launch of Sputnik triggered the National Defense Act of 1958 and the Higher Education Act of 1965, which caused more Americans to view a college education as an attainable goal. Seidman (2005) termed this era "Dealing with Expansion." Whether to better themselves or the nation, students believed that obtaining a college education was the right way to improve themselves. As a result, colleges experienced increased enrollment. During this time, community colleges further refined their mission to be one of preparing students who lacked a strong educational background to successfully attend and graduate from a four-year institution (Simpson, 2003).

As a result of increased enrollment in post-secondary education, there was also an increased need for accountability. Student retention became a statistic used to measure success. A student's retention rate is defined as the rate at which that student completes an educational goal at an institution. Demetriou and Schmitz-Sciborski (2011) called the 1970s the "dawn of theory in the study of college student retention" (p. 3). Renowned educator Spady (1970)

introduced the first theoretical model concerning the interaction of factors leading to retention. This model served as a forerunner to Tinto's model, which was conceived during the "Building Theory Era" (Seidman, 2005). Tinto continued refining his work through the remainder of the century. Tinto's Student Persistence Theory became the lens through which student retention must be viewed through the next eras.

Tinto's Student Persistence Theory. Tinto's (1993) student persistence theory suggests that students who are well-integrated into the academic and social realms of the college they attend, are more likely to persist than students who are not. Tinto (1993) identified different student groups, such as African-American students, students from low-income families, adult students, and transfer students, with unique experiences requiring group specific interventions and policies. Tinto (1993) identified three major sources of student departure: academic difficulties, the inability to resolve educational and occupational goals, and the failure to become or remain incorporated into the intellectual and social life of the institution. Tinto's (1993) "Student Persistence Theory" states that to persist, students need integration into formal (academic performance) and informal (faculty and staff integrations) academic systems and formal (extracurricular activities) and informal (peer-group interactions) social systems (p. 5). Students who connect with their environment are more likely to persist (Astin, 1999; Tinto, 2007). When applied to community college students, Tinto's model has presented some challenges, due to characteristics that are distinct from those of traditional students attending a four-year residential college (the setting of most of Tinto's work). About half of community college students entering during the fall semester return for the spring semester, and rates are even lower for underprepared students (American Association of Community Colleges, 2012; McClenney, 2009).

Tinto (1998) stated that in order for students to persist in their post-secondary education goals, they must be academically involved and socially integrated with their college. Criticism of Tinto's Student Persistence Theory includes the claim that it does not apply to community college settings. Students who attend community colleges do not always have the opportunities to become socially and academically integrated in the way that residential students do (Tinto, 1997). Because community college students may not have additional time to interact with faculty; involvement may be confined to the classroom (Tinto, 1998). However, Karp, Hughes, and O'Gara (2008) argued that Tinto's integration framework can apply to community college students. They affirmed that academic involvement and social integration are linked to the persistence of community college students. They stressed specifically that academic involvement and social integration are not separate: "The two forms of integration are developed simultaneously, through the same activities" (p. 18). The researchers added that faculty members could play an integral role in planning activities that develop social integration within the classroom. In addition, classrooms that are designed to be student-centered are more conducive to promoting social integration and academic involvement.

Tinto (2006) also found that faculty pedagogy is linked to student persistence. The manner in which an educator interacts with students, the atmosphere of the classroom, and the educator's teaching styles may determine whether they complete a certificate or degree (Astin, 1999; Braxton, Brier, & Steele, 2008; Tinto, 2007). Pascarella and Terenzini's (1980) study supported the predictive validity of Tinto's model of persistence. The results of the study showed that students' success and persistence relied heavily on the relationship between students and their teachers and the depth of the teachers' concern for their students' progress. Pascarella and Terenzini (1980) added that the "quality and impact of student-faculty informal contacts may be

as important as students' institutional integration" (p. 72). Similarly, Barnett (2011) proposed that when students feel validated in their courses and when they believe they are respected, recognized, and valued in the classroom by the instructor, they are more likely to experience academic success and remain in community college. His work made clear that in the case of community college students, integration actually takes place in the classroom. Barnett concluded that faculty validation had a direct relationship to academic involvement and, ultimately, students' persistence. However, student persistence can be confounded by other factors such as at-risk characteristics with one being a first-generation college student.

First-Generation Students

The term first-generation student can be defined in multiple ways. As stated in Chapter 1, for the purposes of this study, first-generation students are those who have enrolled in college coursework and come from a family where their parents or guardians did not earn a college degree. A recent review of literature reveals that the concept of being first-generation embodies a wide array of student needs (Bean & Metzner, 1985; Billson & Terry, 1982). First-generation students were once referred to collectively as at-risk students or part of the underserved student population (Rosenbaum, 2001).

In general, first-generation students share several characteristics in addition to being the first in their families to obtain a college degree. These characteristics include demographics, enrollment patterns, and persistence trends. All of these characteristics uniquely contribute to the completion rates of the at-risk population of first-generation students.

First-generation students differ from non-first-generation students in age and family background. According to Kim (2004), first-generation students are 24 and older. First-generation students are more likely to be female, African-American, or Hispanic (Nunez &

Cuccaro-Alamin, 1998). Thirty percent of first-generation students make less than $25,000 per year comparitively; only 9.2% of non-first-generation students' families make less than $25,000 per year. Given the typical income bracket of first generation students, it is not surprising that 55.1% believe they will work while in college compared to 45.2% of their peers, and 36.7% believe they will have to work full time while in college versus 24.7% of their peers (Capriccioso, 2006). In the fall of 2011, 78% of four-year students attended full time, while only 42% of community college students did so (Snyder & Dillow, 2013). This statistic is important because students who attend full time are more likely to earn a credential (Tinto, 2007). More community college students are employed while attending college than those who are employed while attending four-year institutions (Snyder & Dillow, 2013). This statistic is an indicator of the difficulties community college students may encounter in reaching graduation. The number of hours per week a student works has been found to have a negative correlation with retention and graduation rates (Brown, 2012; Cohen & Brawer, 2008; Kennamer, Katsinas & Schumacker, 2010).

Persistence is often a struggle for first-generation students. In general, they have lower entrance scores on their college admission tests (Berkner & Chavez, 1997; Hahs-Vaughn, 2004; Horn & Bobbitt, 2000) and are less likely both to attend college within eight years of completing high school (Terenzini, Springer, Yaeger, Pascarella, and Nora, 1996) and to complete a degree than their peers whose parents have a college degree (Lee, Sax, Kim, & Hagedorn, 2004).

In order to understand the financial needs of first-generation students, it may also be helpful to consider all college-going students. There are some important differences between students who enroll in two-year and four-year institutions. As shown, first-generation students may experience a number of obstacles if they try to pursue their dream of earning a college

degree. Although many are motivated to overcome the barriers that stand between them and their educational goals, it is not without huge sacrifice and extensive self-reflection. Crews and Aragon (2004) estimate that only 10% of all academically underprepared postsecondary students are likely to obtain a degree without some type of intervention, and therefore, for many this includes enrollment in remedial coursework. First-generation students are placed into developmental coursework at a disproportional rate when compared to non-first-generation students (Berkner & Chavez, 1997; Horn & Bobbitt, 2000). Developmental education students are in need of support systems to help them be successful, and first-generation developmental education students tend to need even more support systems to attain academic success.

Supports for Community College Students

As discussed previously, community college students, and in particular first-generation students, face both academic and life issues that may hinder their ability to be successful in college. Boroch et al. (2010) found complications for students because the students possessed limited academic tools and emotional maturity, therefore making it difficult to meet the new expectations of the college setting. Boroch et al. considered anxiety, apprehension, and complex educational issues to dictate the type of support services necessary to meet individual student needs. It was necessary for each community college to design an active model focused on the success and retention of developmental students. Boroch et al. and Wilmer (2008) concurred on several model elements—college orientation, advising and counseling, early warning alert systems, and tutoring—leading to effective practices in the developmental program for colleges to ensure success.

Students who were entering college for the first time found the new environment overwhelming and claimed colleges could help them through the experience by offering an

orientation or student success course (Wilmer, 2008). For instance, Boroch et al. (2010) reported the Florida Community College System offered Student Life Skills, a course focusing on test taking strategies, time management skills, and study skills. Wilmer expanded the definition of the orientation course to include orienting students to understanding "academic policies, communication skills, campus resources, relationship-building skills, stress-reduction skills, time and financial management, decision-making skills, and goal-setting skills" (p. 15). A more comprehensive approach—implementing non-cognitive tests for assessing the whole student—helped students recognize their learning styles, personality traits, and abilities. In the Florida system, Boroch et al. (2010) reported students taking Student Life Skills were 17% more likely to succeed academically. They also claimed that the orientation course built a bond to the institution and provided knowledge to students about the first semester of college. Zeidenberg (2008) explained that many students entering college needed help adjusting to college-level academic expectations, and orientation courses that accomplished this resulted in positive gains. Nevertheless, Zeidenberg (2008) further contended, "Most community colleges lack the incentive to provide the course due to state funding, which focuses on total enrollment not retention or completion rates" (p. 57).

Another support service deemed necessary–advising and counseling–supported students in successfully planning their college experiences. Wilmer (2008) found advising to be one of the most important services for student retention. In addition, Brock (2010) stated that most students needed guidance to "figure out which courses to take, how to add or drop courses, apply for financial aid, and what resources are available" (p. 119). In addition to advisement services for new enrollees, students needed continued advisement services as they progressed through college in areas such as assistance in identifying graduation requirements, major requirements

and prerequisites, and transfer criteria. While advising was found to be important, the high ratio of students to advisors–one to 1,000–made effective advising difficult. Wilmer (2008) suggested that advisors and counselors take an active role by following up with the students throughout the semester, monitoring grades, and communicating about their progress, concerns, or difficulties. Wilmer (2008) and Levin and Calcagno (2008) acknowledged counseling as a way of taking care of the whole student, leading to a proactive approach in the developmental program. Moreover, Boroch et al. (2010) believed the counseling should be ongoing because waiting and seeing did not work; the relationships students develop between advisors and counselors solidified the college connection, which in turn led to "improved first-term grade point average (GPA) and success" (p. 40).

Early alert systems offered an approach to keep students from failing so they could access support services. Boroch et al. (2010) described the early alert warning systems as "a proactive approach for academic and student service personnel to collaborate and identify students who need help and encouraging the students to seek assistance" (p. 43). As a proactive tactic, Wilmer (2008) described the early warning system as helping students and engaging advisors to assist them before the situation became unmanageable, resulting in them failing or withdrawing from classes. With an early warning system, instructors inform the advisor about problems with attendance, grades, or other concerns. In turn, the advisor compiles the information received from instructors to plan a meeting with the student. The early warning system opened the door for additional opportunities for communication and support between the advisor, the faculty, and the student. Consequently, Boroch et al. reported that when an early warning system is implemented, students were more likely to finish the course with higher persistence rates;

furthermore, advisors helped “build relationships with students and assist the students with maintaining their educational goals” (p. 90).

Colleges also offered various academic supports or assistance with the learning process through tutoring services. The different tutoring services offered ranged from writing centers, mathematics centers, study skills workshops, computer labs, or access to professional or peer tutors. As Wilmer (2008) pointed out, tutoring provided students the chance to ask questions or see the material explained differently, aiding in supporting different learning styles. However, Boroch et al. (2010) defined one problem with tutoring services, namely that some students do not access them because they see asking for support as stigmatizing, despite the fact that tutoring reinforces social learning through collaboration during the learning process. Furthermore, Wilmer (2008) believed that peer tutors who have taken the same classes could serve as mentors and role models for students.

Developmental Education

Developmental education includes a series of remedial courses designed to bring underprepared students to expected skill competency levels needed to succeed in college. Developmental education courses offer students remedial help in English/language arts (reading and writing), and mathematics. The overarching goal of developmental programs is to increase students’ skills so they can meet academic standards throughout their programs of study. By improving students' academic skills, developmental programs help make it possible for more students to persist in college while meeting higher academic standards (Boylan, Bliss, & Bonham, 1997; Keimig, 1983; Roueche & Snow, 1977).

Developmental education involves a wide range of services designed to promote personal and academic development at higher education institutions. Services available to developmental

education students may include counseling, advising, tutoring, and courses to enhance study skills and content knowledge such as mathematics and literacy, learning strategies, and promote critical thinking in college. Developmental courses may also include precollege basic skills or remedial courses.

A significant number of students enter higher education every year underprepared for college-level coursework (Crisp & Delgado, 2014; Gonzalez, 2010; Levin & Calcagno, 2008; McClenney, 2009; Pretlow III & Wathington, 2013; Roueche & Waiwaiole, 2009; Wilmer, 2008; Wolfle & Williams, 2014). These underprepared students are typically required to take remedial courses in order to gain the skills necessary to be successful in college-level coursework (Bahr, 2008; Bailey, 2009; Bettinger & Long, 2009; Boylan & Saxon, 1999; Kozeracki & Brooks, 2006; Martorell & McFarlin, 2011). The traditional model has been that students with weaker skills must complete multiple courses within an English, reading, or mathematics-sequence before enrolling in college-level courses (Bailey, Jeong, & Cho, 2009).

Given the growing number of incoming college students underprepared for college-level coursework, it has become more necessary than ever to gauge the effectiveness of developmental education programs. Several researchers have studied the efficacy of remedial education programs by evaluating course completion rates, progress from remedial to college level coursework, subsequent performance in college level courses, and the persistence rates of students who complete assigned remedial course sequences compared with those who fail to complete remedial coursework. Bailey, Jeong and Cho (2009) state that given the size and importance of the developmental function in higher education, there are surprisingly few rigorous evaluations of the effectiveness of remedial programs, and the outcomes from those are not encouraging.

Research on the success of developmental education students reports mixed results with sometimes conflicting or inconsistent conclusions (Goudas & Boylan, 2012). For example, research on community college students in California, Ohio, and Texas yielded positive results of participation in developmental education in terms of persistence and graduation rates for underprepared students (Bahr, 2008; Bettinger & Long, 2009; Fike & Fike, 2008). However, studies conducted in Florida and Virginia found either negative or inconclusive impact (Calcagno, Crosta, Bailey, & Jenkins, 2007; Handel & Williams, 2011; Wolfle & Williams, 2014). In the next section, I will look more deeply at these conflicting results.

Effectiveness of Developmental Education Programs. The effectiveness of developmental education courses has been one of the most debated issues in higher education recently (Adelman, 1996; Grubb, 2001; Levin & Calcagno, 2008; Levin & Koski, 1998; McCabe, 2000; McCabe, 2003; Payne & Lyman, 1996; Tierney & Garcia, 2008). One key reason for the controversy is simply a lack of research on developmental education programs. Grubb (2001) asserted that, "Relatively few evaluations of remedial programs have been conducted, and many existing evaluations are useless because, failing to recognize what the program does, they provide little information about what should be changed to make it more effective" (p. 1).

Another reason for the ongoing debate is that some researchers question the reliability of the studies examining the effectiveness of developmental education programs. Bettinger and Long (2005) stated:

> Research into the effectiveness of developmental programs for college students has been sporadic, typically underfunded, and often inconclusive: Many factors have hindered

> research into the effects of developmental classes, study skills courses, tutorials, and counseling programs on the performance of underprepared college students. (p. 5)

Questions regarding the effectiveness of developmental education remain an issue at higher education institutions because developmental education lengthens the time students take to complete a degree and suppresses the number of students who graduate. Bettinger and Long (2005) pointed out that increasing the number of requirements for students could extend the time to earn a degree and may negatively impact student outcomes such as persistence and major choice.

One of the problems with traditional remedial programs is that they require students to complete a sequence of coursework, usually over multiple semesters. However, only a small percentage of students successfully complete these sequences as prescribed. An analysis of records from 256,672 degree-seeking first-time community college students during the fall semesters of 2003 and 2004 at one of 57 Achieving the Dream colleges located in seven states revealed that fewer than half of the students referred to developmental education completed the required coursework (Bailey, 2009). Achieving the Dream is a national initiative funded by the Lumina Foundation to improve the success of low-income students and students of color (Bailey, Jeong, & Cho, 2009). Information collected in the study included demographics, full or part-time status, major, remedial courses taken and grades earned, and enrollment and completion status of subsequent college-level courses. Students who were referred to multiple levels of a course, males, part-time students, African-Americans, and older students had lower success rates (Bailey, Jeong, & Cho, 2009). Of those developmental education students who never enrolled in the required mathematics courses, 42% did not persist and did not earn any college credit during the three-year follow-up (Bailey, Jeong, & Cho, 2009). Other studies have shown similar results.

Less than 25% of underprepared students complete their developmental education course on the first attempt (Brown, 2012). Many underprepared students are not enrolling in developmental courses as prescribed or are not passing developmental education courses after enrollment (Bailey, 2009, Bonham & Boylan, 2012; Gonzalez, 2010; McCabe, 2003).

However, developmental educational services have helped some students of varying abilities and backgrounds to continue at institutions of higher education (Bettinger & Long, 2005; Boylan, Bonham, & White, 1999; Tierney & Garcia, 2008). Supporters of remediation believe that these programs help poorly-prepared students with the opportunity to succeed in college by providing a chance to catch up to their peers and find positive effects of remediation on college persistence and degree attainment (Martorell & McFarlin, 2007). McCabe (2000) discussed how remediation has proven to be effective at improving the chances of collegiate success for underprepared students. In order to improve the performance of students in developmental education courses, McCabe focused on the components of the developmental programs to evaluate the effectiveness of these programs.

In two national studies, McCabe (2000; 2003) sought to discover factors that led to student success, retention, and eventually degree completion amongst community college students who had to enroll in developmental education programs. Some of the factors McCabe identified were:

- Use of a variety of approaches and methods in remedial instruction,
- Provision of a centralized or highly coordinated remedial program,
- Provision of tutoring performed by well-trained tutors,
- Integration of classroom and laboratory activities,
- Use of learning communities in remedial instruction,

- Use of supplemental instruction, particularly video-based. (p.45)

With the lack of consistent success of developmental education, McCabe's recommendations on implementation are leading to new models for developmental education instruction in community college settings. In the next section, the co-requisite model of developmental education instruction, the particular model examined for this study will be described. The co-requisite model of developmental instruction is one emerging application of McCabe's frameworks.

The Co-Requisite Model. As noted above, the effectiveness of historical models of remedial instruction is under intense scrutiny. Critics claim the traditional models are not ameliorating the problem of low success rates in the courses and ultimately low graduation rates (Conforti, McClarty, & Sanchez, 2014). A few examples of alternative models of developmental education delivery include the self-accelerating emporium model, the co-requisite model, and modularized delivery (Lass & Parcell, 2014). This study looked specifically at developmental mathematics taught under the co-requisite model, which will be discussed in detail throughout this dissertation. Developmental mathematics is presently only taught under the co-requisite model at the institution where this study took place. Co-requisite courses may also be referred to as paired courses, concurrent enrollment, or co-enrollment. Throughout this review, the term "co-requisite" will be used consistently. The co-requisite model permits students to work on mathematics or English deficiencies in the same semester that they are enrolled in corresponding college-level courses (Tennessee Board of Regents, 2009). As a result, students can finish their remedial and college-level coursework in the same semester.

The typical framework of the co-requisite model is fairly simple. It consists of two courses in the same discipline completed in the same semester. One of these courses is the credit-bearing, college-level course, also known as the gateway course, which is required for completion of a specific credential. The other, a non-credit but required course, is at the developmental or remedial level in the same subject area. This research study will take a deeper look at the mathematics co-requisite model at a community college, where students enroll in one college-level mathematics course as well as a developmental level mathematics course in the same semester. While the concept of co-requisite courses is not new in higher education, co-requisite linkage as a form of remediation is a direct application of McCabe's framework implemented at the institution being studied.

Within the co-requisite model, the remedial mathematics course is designed to provide just-in-time support for the college-level course (Boylan, 1999). When this approach is effectively implemented, educators tailor the course activities of the developmental education level course to specifically support learning in the corresponding college-level course. Additionally, instructors can develop classroom activities that offer students support in an environment that encourages them to participate freely without negative ramifications (Novak, 2011). The courses are deliberately designed to include supplemental academic support to develop the skills necessary for successful completion of the gateway course, thus earning the college credit (McTiernan & Fulton, 2013; Cullinane, 2012).

The co-requisite model of remedial instruction attempts to provide students the opportunity to take advantage of just-in-time support as well as fostering their sense of capacity for learning by improving relationships between students and the institutions. As a result,

Rendón's Validation Theory provides another appropriate theoretical framework for the conduct of this study.

Rendón's Validation Theory

The theory of validation states that "validation is an enabling, confirming, and supportive process initiated by in- and out-of-class agents that fosters academic and interpersonal development" (Rendón, 2002, p. 644). Students who receive validation through encouragement, affirmation, and support are positively influenced both in and outside of the classroom in their daily lives (2002). The literature discusses the importance of validating experiences for nontraditional students, low-income students, first-generation students, women, and minority students from working-class backgrounds (2002). Affirming interactions between students and faculty members can play an important role in every student's academic success regardless of demographic background.

Rendón's (2002) validation theory is comprised of six elements:

- The responsibility for initiating contact with students falls to institutional agents such as faculty and counselors;
- Students have a better sense of self and feel more capable of learning when validation is present;
- Validation is a prerequisite to students' development;
- Validation that promotes academic growth and personal excellence occurs in- and out-of the classroom with multiple representatives, such as faculty members, classmates, family members, tutors, coaches, advisors, and others who actively support and affirm students;
- Validation is a developmental process, not an end in itself, and

- Students must be validated early in the process of their college experience, especially in the first year of college and within the first few weeks of class (p. 644-645).

Two types of validation are essential when working with students. First, there is "academic validation" that occurs when in- and out-of-class representatives purposefully facilitate students to "trust their innate capacity to learn and to acquire confidence in being a college student" (Rendón, 1994, p. 40). Second, "interpersonal validation" occurs when in-and out-of-class agents purposefully "foster students' personal development and social adjustment" (p. 40). Validation theory supports faculty and staff members in taking a proactive, purposeful role in reaching out to students to validate them as capable learners and to support them in their academic endeavors and social adjustments (Rendón, 2002).

In the mid-1990s, the U.S. Department of Education funded a study intended to better understand the experiences of first-generation students in community colleges across the country. The research team sat down with students who were the first in their families to attend college and for whom the expectation to go to college had been largely non-existent. The interviewer asked what led them to be successful or unsuccessful in their courses. One trend in particular stood out: the students spoke about stress and anxiety. The stress of taking college courses tended to induce a significant anxiety for many first-generation students (Munoz & Rendón, 2011).

Students who enter college underprepared for college-level coursework may find themselves in desperate need of validation as they enter non-credit bearing coursework at the start of their academic journey. College personnel can serve to motivate students they encounter enrolling or those who are currently enrolled in developmental education coursework. Beyond

the scope of remedial coursework, validation can also be instrumental is retaining students regardless of their preparedness for college-level coursework.

Summary of Chapter

The bodies of literature examined in this chapter frame the topic of developmental education students in the community college setting. The topic starts out by framing broad ideas and becomes more specific as it develops specific issues of interest to this particular study. The first area discussed was the community college setting. The issue of retaining students in community college long enough to earn a credential was then discussed. Particular attention was given to Tinto's student persistence theory in order to see how social and academic integration play a role in student persistence through college. The second area described first-generation students in order to develop an understanding of how being the first in their family to attend college contributed to their experience. The third area summarized some of the supports in place for community college students and how these supports are aimed to best assist them. This chapter also included a review of developmental education that includes studies that focus on helping underprepared students, such as the co-requisite model of developmental mathematics instruction. Finally, it offered a brief discussion of Rendon's Validation Theory and how it could help influence practices in both colleges and classrooms to help students be successful. In the next chapter, I will describe the methodology I used to conduct the study, which included interviews, memoranda, and observations to collect data, and used the *Listening Guide* Voice-Centered Relational Method and thematic coding to analyze and make meaning of the results.

Chapter 3

Methodology

Overview of Chapter

In this chapter, I describe the qualitative study I designed in order to understand the key factors to which students who successfully completed the mathematics co-requisite model at a large Midwestern community college attribute their success. This study was conducted over a six-month period on five out of the 14 community college campuses. The study sought to express the stories of students who successfully navigated their way through developmental mathematics at the college. By listening to students who are still enrolled at the college after having completed the devlopmental mathematics course, I was able to identify what key factors contributed to their success. This chapter includes descriptions of the sample population, data collection methods, and procedures used in data analysis and interpretation. The chapter concludes with a discussion of ethical considerations and limitations of the study.

Research Approach

The qualitative approach was best suited for this research question as it can address problems that require the exploration of a particular issue in a particular setting and a detailed understanding of a central phenomenon (Creswell, 2008). This approach allowed me to better understand the issues at hand by speaking directly to the participants about their experiences. The strength of this approach involves "detailed, descriptive data in deepening our understanding of individual variations" (Patton, 2002, p.16). I set out to get an in-depth understanding of the key factors to which students who completed the MATH 080 and MATH 123 co-requisite course model at the institution attributed their success.

Rationale for Research Approach and Data Analysis

Adopting the methodology Merriam (2009) tagged as basic qualitative research, I attempted to understand the meaning the participants in the study attached to the phenomena they experienced during their enrollment in the mathematics co-requisite model. Researchers who conduct basic qualitative research are primarily interested in "(1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences" (p. 23). While other types of qualitative research share these same foci, they include additional components not found in basic qualitative research. Researchers who conduct basic qualitative research typically collect documents and conduct observations and interviews. They then organize the data by themes or reoccurring patterns before analyzing them. In addition to thematic data analysis, I utilized the Voice-Centered Relational approach (Brown & Gilligan, 1992). The Voice-Centered Relational approach helped me to listen carefully to the participants.

The Voice-Centered Relational approach to data analysis was selected for this study as it allows the voices of the participants to be clearly heard. This approach to data analysis provides a means of acknowledging not only who is speaking, but also who is listening (Brown & Gilligan, 1992). Honoring the listener's perspective gives the researcher another way to analyze what the participants shared about what they experienced during their time in the developmental mathematics course. Letvak (2003) posits that "this method of data analysis allows narratives to be explained in terms of their relationships and the broader social and cultural contexts in which they live" (p. 638). According to Mauther and Doucet (1998), the Voice-Centered Relational approach "explores individuals' narrative accounts in terms of their relationships to themselves, their relationships to the people around them, and their relationships to the broader social, structural and cultural contexts within which they live" (p. 9). After conducting each interview, I transcribed the conversation for analysis and turned key sections into I-Poems. To create these I-

Poems, I underlined every first person "I" statement along with verb and descriptors within the interview transcript and pulled out those phrases with no deletions. I also spent time focusing on the individuals who shared information; then I extracted their words to create I-Poems. The I-Poems highlighted themes and variations that arose at different points in the interview.

Setting for the Study

This study took place at a large statewide community college system. To put this institution into context I will summarize some important demographic information from the state in which the institution is located. There are over 31 campus sites for the community college throughout the entire state. Statewide statistics show that approximately 59% of students enrolled in the community college system are enrolled part-time and take fewer than nine credit hours per semester ("Takeway Community College," 2015). The percentage of undergraduates enrolled in academic year 2014 – 2015 self-reported themselves as African-American, Caucasian, and Hispanic. According to an institutional research report from the college, approximately 10% of the students self-reported as African-American, 56% self-reported as Caucasian, and 4% as Hispanic. Thirty percent of students self-identified as "other ethnicity" or did not report at all.

The developmental mathematics co-requisite model was piloted during the fall 2012, spring 2013, and summer 2013 semesters. Beginning in the fall 2013 semester, all students who placed into remedial mathematics according to their placement test scores were enrolled in the developmental mathematics co-requisite model. In the spring of 2015, approximately 14,000 students were new to college or returning and required to take the mathematics placement test. Thirty-six percent of these incoming students placed into developmental mathematics. Prior to the pilot of the co-requisite model of developmental mathematics instruction, approximately 70% of students who attempted remedial mathematics did not earn a passing grade in the course and

could not proceed to college-level mathematics. This study gathered responses from participants who completed the developmental mathematics course (MATH 080) in the co-requisite model with a passing grade in the spring 2015 semester. The percentage of students who enrolled in MATH 080 during the spring 2015 semester and did not earn a passing grade dropped to 45.3%.

The statewide unemployment rate reported in June 2015 was approximately 5% ("Stats," 2015). Some students use community college as a springboard to a credential and beyond. Employment and unemployment rates, much more than the number of high school graduates or other population trends, are the biggest factors driving enrollment for community colleges (Kasper, 2003). New efforts to retain students at this institution come at a time when "three-year completion rates at two-year public colleges in the United States have remained at just under 30% in the last decade" (Selix & Willen, 2010, p. 2). The percentage of fall first-time (full – and part-time) students returning the following fall semester for this state system is approximately 51% ("Takeaway Community College," 2015). Additionally, for this state, the percentage of the fall first-time full-time students earning a certificate or diploma within three years or who transfer out to another institution is approximately 27%, as calculated using data from 2009, 2010, and 2011 ("Takeaway Community College," 2015).

The Recruitment Process

Upon approval from my committee, I was able to move forward with obtaining Institutional Research Board (IRB) approval from both Lesley University and the community college where the participants are enrolled. After obtaining official IRB approvals from both institutions, I was able to begin the process of recruiting participants. Before reaching out directly to students, I described the project to various mathematics faculty members and program chairs at multiple campuses and asked for their support and recommendations of appropriate

students.

Five mathematics faculty members and program chairs offered to assist with recruiting participants in their respective regions. Their process began with obtaining a report from their regional registrars of the students who were enrolled in the MATH 080 and MATH 123 mathematics co-requisite model in the spring of 2015. From that report they were able to gather how many of the students who took the courses in the spring 2015 semester earned a passing grade. In order to determine which of these students were still currently enrolled, the faculty members and program chairs manually entered the name of each student who had successfully passed MATH 080 and MATH 123 into the system that tracks student schedules and checked current enrollment. The professors then provided me with a list of those students who had continued on at the college. Once the list was completely updated, the program chairs and faculty members sent it to me. From the regionally filtered list I used free online software to randomly select 50 eligible participants and asked if they would complete the information survey. This letter of invitation can be found in Appendix A.

The invitation email also included a link to a survey I created to gain some preliminary information from the participants to confirm their eligibility for the study. A template of the survey can be found in Appendix B. Thirty-eight students filled out the survey and expressed interest in being interviewed. I added the first names of all 38 survey responders into the same online randomizer used before and made direct contact with the first 15 students selected by the randomizer software. Then I began scheduling interviews. One student I contacted, graciously filled out the survey but was due with her first baby in the next few days and did not want to schedule an interview. Using the randomizer software again, I replaced her with another random survey responder.

For the purpose of this study, the notion of success will be viewed differently than what is commonly accepted within higher education–namely that students are successful only when they have earned a college degree. While most students attend higher education institutions to obtain degrees or credentials, some go to college looking primarily for job training. Others study academic subjects strictly for the sake of learning. Adding to the diversity of definitions of success, students often adjust their goals throughout their college years ("Student Success in Higher Education," 2011). Therefore, in this study, student success will be defined somewhat more broadly than as degree completion. Student success will mean completing developmental mathematics coursework under the co-requisite model and embarking on credit-bearing, college-level coursework in individual programs of study. In keeping with the purpose of taking a closer look at success through the developmental mathematics course, this definition of success also allows for the researcher to take into account success in individual courses (Tinto, 1997).

Samples for qualitative studies are generally much smaller than those used in quantitative studies (Ritchie, Lewis & Elam, 2003). There is a point of diminishing return to a qualitative sample, and as a study goes on, an increase in data does not necessarily lead to more information. A single occurrence of a piece of data or a code is enough to ensure that it becomes part of the analysis. Qualitative samples must be large enough to assure that most or all of the perceptions that might be important are uncovered, but at the same time if the sample is too large, data becomes repetitive.

As the researcher, I sought out specific criteria in participants. The criteria for eligibility in this study was that participants be assigned to the mathematics co-requisite model after having completed the placement test. Once the co-requisite model of developmental mathematics was implemented at the institution, there was no other option for students who scored below the

college-wide cut-off score to enter college-level mathematics. The college's placement test score ranges are attached as Appendix C. Placement test score ranges used at the institution determine the level of need a student falls into. Students who earn a score of 40 or higher are deemed to be low need. Students who earn a score between 30 and 39 are deemed moderate need and students who score below 30 are deemed high need. Students who earn scores on the placement test that deem them not college ready must enroll in the corresponding developmental education course tracks. These students would enroll in one developmental mathematics course (MATH 080) and one college-level mathematics course (MATH 123) in the same term. In addition to utilizing institutional placement test score benchmarks, I also utilized the grading scale of the institution that determines whether or not a student is eligible to move on to the next course in their programs of study. This college-wide grading scale translates to the participant criteria for successfully navigating through the mathematics co-requisite model with a grade of C or better in MATH 080 and MATH 123. The participants' institution deems them prepared for college-level coursework after they have completed their assigned developmental mathematics courses with a grade of at least C. Students who successfully completed the mathematics courses with a grade of C or better in MATH 080 and MATH 123 were eligible to take part in this study. The students would also need to have remained enrolled at the institution after passing MATH 080 and MATH 123 in the subsequent semester. Participant demographics and characteristics are summarized in Table 2.

Table 2: Participant Demographics

Student's Chosen Pseudonym	*Gender*	*Age*	*Year started at Institution*	*Major*	*Math Placement Test Score &*	*Earned Grade in*	*Earned Grade in*

					Level of Need	*MATH 080*	*MATH 123*
Steph	F	26	2014	Business Administration	41 (Moderate Need)	C	B
Brett	F	21	2014	Criminal Justice	59 (Low Need)	C	C
Carrie	F	39	2013	Accounting	25 (High Need)	C	B
Ruby	F	37	2014	Medical Assisting	26 (High Need)	A	B
Beth	F	33	2015	Medical Assisting	52 (Low Need)	A	A
James	M	42	2014	Network Infrastructure	39 (High Need)	A	A
Alexis	F	31	2014	Elementary Education	36 (High Need)	A	A
Kate	F	38	2014	Dietary Management	27 (High Need)	A	A
Jenny	F	19	2013	Human Services	44 (Moderate Need)	A	B
Amelia	F	26	2013	Office Administration	41 (Moderate Need)	A	B
Sue	F	55	2014	Early Childhood	34 (High Need)	A	A
Tina	F	33	2014	Therapeutic Massage	52 (Low Need)	A	A
Marie	F	35	2014	Respiratory Care	22 (High Need)	B	C

Moon	F	42	2013	Clinical Support	44 (Moderate Need)	C	C
Alex	M	37	2014	Automation Robotics	24 (High Need)	C	C

Data Collection

The primary sources of data were student demographics as described in Table 1, in-person interviews, transcripts, I-Poems written during data analysis, and memoranda produced by the researcher. During each step of data collection, the researcher wrote research memoranda which were used as an opportunity to document initial ideas and reactions to interviews, observations, and reviewed data. The in-person interviews were conducted during the fall 2015 semester using an interview protocol (Appendix D). Each interview was recorded and transcribed. These transcripts and recordings were used to carry out the steps of the Voice-Centered Relational method, described in more detail below.

The interview protocol consisted of five to eight open-ended questions that allowed participants to voice their experiences and perspectives of their time in developmental mathematics. The interview protocol was emailed to participants prior to our scheduled meeting. The 15 participants came from five different campuses. On the day that our interview was scheduled, I traveled to meet the students at their home campuses, where we met in a conference room. Informed consent from the participants was obtained using consent forms detailing the study (Appendix E). As participants settled in, we engaged in a brief informal conversation. Once the participants stated they were ready to begin the interview, I started the recording.

Following the interviews, I wrote a memo with a summary of my perceptions of how the interview went, body language descriptions, and any intial thoughts I had. The purpose of

researcher memoranda in qualitative research is to provide an opportunity for the researcher to document initial ideas and reactions to interviews, observations, and reviewed data. Memoing assists researchers in making conceptual leaps from raw data to those abstractions that explain research phenomena in the context in which it is examined (Birks, Chapman & Francis, 2008). Memos can be effectively employed by the researcher as a procedural and analytical strategy throughout the research process. While guidelines exist to aid in the production and use of memos, memoing remains a flexible strategy wherein the process of construction and nature of content is determined by the preferences and abilities of the researcher and the aims and focus of the specific research study (Birks, Chapman & Francis, 2008).

As noted above, the interviews were recorded for later transcription and analysis. Recordings were made using the SuperNote™ application on an iPad. Within 48 hours after each interview, I transferred the recording to a computer. I used Audacity™ software to play the recording while creating a transcript using Microsoft Word. Each transcript was printed and annotated with memos.

After interview data was transcribed and data analysis was completed, I set a closing interview with participants that served as a member check. During our member check meeting, I presented participants with their full I-Poems, their participant profiles as they are reported out in the study, a list of the themes that emerged from their interview transcripts, my interpretations of contrapuntal voices, and lastly, a copy of their verbatim interview transcripts. After giving them the documents, I asked them each one question, “Does this sound like you and what you were telling me?” After this meeting, I drafted a memo noting the participants’ reactions and responses. This memo became part of the data set.

Data Analysis

I employed both a thematic approach and the Voice-Centered Relational Method as the guide for data analysis. To keep with a thematic approach to data analysis, researchers review their data, make notes and begin to sort them into categories. Styled as a data analytic strategy, this approach helps researchers move their analysis from a broad reading of the data towards discovering patterns and developing themes. As Boyzatis (1998) describes, thematic analysis is a process of "encoding qualitative information" (p. 7). In thematic analysis, the researcher develops "codes," words or phrases that serve as labels for sections of data. Depending on the methodology and research question, codes can come in many shapes and sizes. Referring to a set of codes, Boyzatis explains, “This may be a list of themes, a complex model with themes, indicators, and qualifications that are causally related; or something in between these two forms” (p. 7).

The Voice-Centered Relational Method utilized specific steps in the analytic phase to encourage the researcher to focus on a particular aspect of a participant’s recounting of an experience within the context of inquiry. First, each interview was transcribed. The researcher read the transcript while listening to the recorded interviews. The Voice-Centered Relational approach presscribed listening to the interview four times with a distinct focus each round. The foci are: listening for the plot, creating poems based on the information given by participant, listening for contrapuntal voices, and composing the analysis (Brown & Gilligan, 1992). The four listenings followed the deliberate steps or cycles outlined for the Voice-Centered Relational approach. Each of the four steps are described more thoroughly below.

Step 1: Listening for Plot. The first listening entailed two components: listening to the plot and identifying my response to the transcript. Listening to the plot encourages the researcher to identify the larger social context in which the experience recounted in the text occured. To do

this, I attended to the "territory of the story– by asking what is happening, when, where, with whom, and why" (Gilligan et al., 2003, p 160). The first cycle consisted of reading and listening to each interview in its entirety.

As a result of this step, I wrote a portrait of each of the participants. This portrait describes the participants' stories of their time in college as well as the specific factors to which they attribute their success through the remedial mathematics course. These portraits are included in Chapter 4. After each recording finished, I reflected on the whole story and thought about what the participant had stated. Immediately following the first reading of each transcript, I wrote a memo summarizing my reaction to each of the participants' stories.

Step 2: I-Poems. The second listening focused on the participants and how they spoke of themselves in the interview. Brown and Gilligan (1992) explain that the researcher needs to listen for statements containing the words "I," "me," and "my" to gain insight into the identity of the participants from their own perspectives. According to Brown and Gilligan (1992), the second listening not only helps researchers identify the voices of the participants, it also creates a space for the participants to speak of themselves before the researchers speak of them. The second step involved an in-depth look at the voice of each of the participants. In keeping with the Voice-Centered Relational approach, during this phase I attended to the "participant's first-person voice for cadences and rhythms within the narrative" (Gilligan et al., 2003, p 162). The purpose of the "I-Poem" was to home in on a participant's first-person voice.

I listened to each recording with the associated printed transcript. As I listened, I underlined each occurrence of statements containing the words "I," "me," and "my," along with the verb or seemingly important companion words. Each underlined phrase was then "pulled out" of the text while maintaining the sequence in the text and placed on separate lines, like a

poem. I examined the poems and the full transcripts in relation to one another for changes or variations in themes, harmonies, dissonances, and shifts. This represents the final phase in step two and led to step three, where multiple voices are identified.

Step 3: Listening for Contrapuntal Voices. This third step involved listening to the narratives to identify, specify, and sort out the different strands that relate back to the research question. The term "contrapuntal voices," derived from the Latin *punctus contra punctum*, means note against note or, more specifically, counterpoint in music (Kutnowski, 1999). It describes the relationship between two or more voices, independent in rhythm, but interdependent in harmony. Gilligan based her development of "voice-centered listening" on the concept of counterpoint (Kiegelmann, 2000).

According to Gilligan et al. (2003) the researcher begins this step with an idea about a possible voice, creates an initial description of the voice, and then listens for this description. I identified two initial voices and conducted a separate analysis of each. The voice shift I noted was a progression away from fear and self-doubt specific to a lack of ability in successfully completing mathematics coursework. I chose this voice shift because it became evident during the analysis conducted in steps 1 and 2.

Step 4: Composing an Analysis. This phase pulled together what I learned about the participants in relationship to the research question (Gilligan et al., 2003). It synthesizes all of the listenings (plot, I-Poems, and contrapuntal voices), underlinings, notes, and summaries made for participants into an interpretation of the experience as imaged through their voices. According to Gilligan, et al., several important questions emerge at this point: "What did the researcher learn through this process and how has the researcher come to know this? What is the evidence on which the researcher based the interpretations" (p. 168)?

Once all the listenings were completed, I revisited the transcripts, reread the notes, and considered them in light of the participants' stories to gain an integrated picture. The four listenings included in the Voice-Centered Relational approach assisted me in deepening my understanding of the participants' experiences.

Analyzing for Themes. After completion of the four steps, I coded for themes. In total, the interview transcripts had 26 distinct codes. I manually highlighted printed transcripts and tallied codes. I searched for common patterns of response across the interviews and noted them as extended statements and phrases. Groups of repeating ideas suggested codes that led me to themes that, when woven together, suggested findings. I sought out interesting characteristics in the data, such as clusters of interviewee responses that were similar to each other, associations between responses, and demographic characteristics of interviewees, such as gender, ethnicity, length of time since graduation or General Education Diploma (GED) attainment, and length of time since being enrolled in the developmental education track. Once all of the relevant responses were organized in their respective thematic categories, I described the connections, if any, between the themes. Six findings emerged from the themes. These findings are discussed in Chapter 5.

Ethical Considerations of Insider Research

It is important to consider ethical issues carefully when conducting insider research, particularly qualitiative research. There are four areas relevant to this study that are discussed in this section. Those areas are the researcher's employment at the site of the study, the researcher's relationship to the participants, the researcher's beliefs about community college students, and the researcher's experiences as a first-generation college student.

The site of the study is a large, multi-campus community college. Potential participants

were chosen from campuses other than where my office is located. Secondarily, I work for the system office and not for a specific campus. During recruitment and interviews, I was careful to never use my title at the college so as to not emphasize the imbalance of power. In addition, I conducted the research with the full support of college administration and mathematics co-requisite program leads. College administration, faculty, and staff have encouraged me to share my findings from this study as they would like to continue to improve this model.

I had no personal relationship with the students prior to this study and possessed no influence over their coursework or grades. At the start of our interview, I was careful to emphasize that while I do plan to share my results with the institution, I will maintain their anonymity by referring to their experience by using only their selected pseudonyms.

Community college students have unique characteristics both in what they bring and do not bring to their college experience. During my time as a faculty member and staff member at two community colleges, I watched students use their abilities to their benefit and persist despite often overwhelming barriers. While was impressed at how they cleared hurdles, I am often saddened that they faced them to begin with. I am deeply invested in helping all students I encounter achieve their desired goals.

I myself am a first-generation college student. My parents did not attempt college after they graduated from high school. This left me with no example of how to navigate and succeed in higher education. While I tried not to let my own experiences influence my interpretation, it was natural for me to identify with students who have a similar story.

Validity. Creswell (2008) considers the term validation to mean "an attempt to assess the 'accuracy' of the findings" (p. 206). The strategies I adopted to contribute to the validity of this study include:

- *Accounting for personal biases that may have influenced findings.* I made a point to be very transparent about the fact that I work at the institution but was in no way interviewing students as part of my work at the college. I contextualized why I was interested in interviewing them in particular and made special note of the fact that I myself was a first-generation college student who attended a community college in New York City years ago. Addtionally, while analyzing data, I reflected on my own personal experiences and ensured I addressed any biases.
- *Including participants' own descriptions and accounts to support findings.* To allow readers of my study to draw their own conclusions, I included participant portraits and I-Poems verbatim in Chapter 4. The findings presented in Chapter 5 are each accompanied by direct quotes from participants' interviews.
- *Final member check interview with the participants.* The second step of the Voice-Centered Relational Method mandated a focused look on the "I" who was speaking (Gilligan et al., 2003). To complete this step, I constructed a poem for each participant consisting of all statements beginning with "I," collected in the order in which they were stated. By constructing I-poems out of the first in-depth interview with each student, I was able to identify each student's unique voice. When I was finished constructing the I-Poems, I wanted to share them with the participants. Our final interview was the perfect opportunity for sharing the I-Poems. I made a conscious choice during this final meeting to ask the participants only one question: "Does my interpretation sound like you and what you were telling me?" I watched as the participants read their poems. I watched as the

> participants giggled aloud, smiled, wiped tears, raised eyebrows, and oftentimes sighed and took deep breaths. Each of the participants responded, "Yes, this sounds like me." A few of the participants asked if they could keep a copy of their poems and cherished it as a valuable work of art. I very much enjoyed sharing this moment with them and appreciated their excitement over their words. Like them, I believe their words are a valuable work of art and a gift to me.

Reliability. Lincoln and Guba (1985) contend that reliability in a qualitative research project means looking at whether findings are dependable and consistent with the data collected. I used a detailed process for data analysis that required four readings and listenings to participant transcripts to ensure that I had accurately depicted what the participants intended for me to gather from their responses. It was not until I had finished multiple readings and listenings of the interview transcripts that I made any substantive interpretations of the data. I wrote memos throughout the entire process of data collection and data analysis. After I finalized my interpretations, I met with all participants and asked that they read and provide feedback on the I-Poem I had crafted from their interview responses.

Haggman-Laitila (1999) stressed the importance of the researcher being open to the participants' message and interpreting what each actually said and recognizing their own biases or positions. Qualitative research in nature is subjective and relies on the researchers' interpretation of the data. When I was first introduced to the Voice-Centered Relational approach, I was intrigued by the systematic approach it called on researchers to engage in. The steps outlined describe how the researcher took part in multiple readings and listenings in an effort to highlight what the participants shared during their interviews. Data analysis is sometimes difficult to articulate because in doing so researchers are confronted with the

subjective, interpretive nature of having to interpret participants' words in some way, while realizing that these words could be interpreted in a multitude of ways.

This systematic data analysis method allows researchers to examine how and where some of their own assumptions and views – whether personal, political, or theoretical – might affect the interpretation of the participant's words. Brown and Gilligan (1992) state that "writing out our responses to what we are hearing, we then consider how our thoughts and feelings may affect our understanding, our interpretation, and the way we write about that person" (p. 27). Brown and Gilligan highlight the issue of reflexivity or an immediate judgment in terms of the researcher's social location and emotional responses to the participants. This detailed process forces researchers to reflect on their own personal biases or stances so they can control those initial reactions. The first reading and listening calls for researchers to be reflexive about the later data analysis processes by: (1) locating themselves socially in relation to the participant; (2) attending to the emotional responses of this participant; (3) examining how researchers make theoretical interpretations of the participant's narrative; and (4) documenting these processes for the researcher and others.

Limitations of the Study

An important limitation to note is where I chose to conduct the study. The research sample was limited to students enrolled in one community college system and one implementation of the co-requisite model of mathematics instruction. This limitation restricts the ability to generalize the study's results to other populations at other community colleges. A limitation resulting from the use of qualitative inquiry is the researcher's role as the instrument of data collection. I collected data by conducting semi-structured interviews. I wrote many

memos in a research journal before, during, and after meetings with participants. It is important to note that my personal experiences impact the study, as described above.

Another limitation to the study and the design in which it was conducted was the timeline of events. I relied on the memories of students who had taken the relevant courses two semesters prior to our interview. Memories may have been influenced by their new experiences and feelings about the past in their retelling.

A final limitation was in the population I specifically studied. The participants came from a very specific population of students who had enrolled in and completed two particular courses during a specific semester. The students who participated in my study were deemed underprepared for college due to their placement test scores and it is highly possible that the findings of this study may not apply to students who enter college needing no developmental education courses before beginning their programs of study. Additionally, the participants in my study all earned a passing grade in the course, which likely contributed to their positive feelings about their experience in the course. The research question for this study is concerned with students who succcessfully completed developmental mathematics. Therefore, stories from students who were unsuccessful in developmental mathematics were not collected.

Summary of Chapter

This chapter described the methodology I followed in completing this qualitative study. I explored the key factors to which students who had successfully completed the mathematics co-requisite model at a large community college attributed their success. Data was collected from participants who had been asked to tell their stories based on question prompts that were in keeping with the constructivist view that human beings create meaning by interacting and engaging with the world around them. Data were analyzed using the Voice-Centered Relational

Method (Gilligan et al., 2003). Additionally, interview transcripts were coded and any themes that emerged noted. Steps were also taken to ensure validity and reliability. In the next chapter, I will express the participants'narratives using their voices as often as possible, including excerpts from I-Poems developed through my analysis of information shared during our interviews.

Chapter 4

Participant Portraits

Overview of Chapter

The general focus of this study is to identify the key factors to which students who completed the mathematics developmental education co-requisite model attribute their success. Several questions surfaced as a result of my research: What supports did students receive that helped them be successful in their developmental education mathematics course? How did students perceive the developmental education level mathematics course impacted their performance in their college-level coursework that followed? What types of relationships did the students form that helped them to be successful? How did being first-generation students affect their college journey? Examining these specific questions required me to thoroughly review the participants' transcipts. This chapter describes details of the stories the participants shared with me. In chapter 5, I will examine the themes that emerged related to my specific questions.

Participant Portraits and I-Poems

The following portraits are based on the interviews conducted with the participants, information detailed in institutional reports outlining student demographic information, and–when applicable–my observation memos, which were written immediately following my meetings with the participants. The Voice-Centered Relational (VCR) method offered me full access to the data while remaining attentive to the key points of the stories. At the end of each portrait, I will present excerpts from the I-Poem created for each participant. The excerpts included in this chapter were the ones I found to be the most telling of the participants' journeys through the developmental mathematics co-requisite model course. The full I-Poems can be found as Appendix F. These I-Poems are vivid representations of each of the participants and

how they see themselves.

Steph. Steph was the first participant to reply to my invitation email and thus my first interviewee. She arrived 10 minutes before her scheduled interview time, enthusiastically shook my hand, and introduced herself. She was eager to talk about her time in MATH 080. I could tell this because she mentioned a few times before we started recording that she was "just so excited to tell me all about her time in the course."

At the time of our interview, Steph had been enrolled at the institution for a year and a half. She had enrolled in college immediately after graduating from high school in 2008, but referred to herself as "the typical 19-year-old just moving out of my parents' place and partying and hanging out," so she "kinda failed out." She attributed her return to college to the support of her mother, who had offered to pay for her first semester and gave her somewhere to live. She said, "My mother literally pulled me from off the streets" and that had this saved her life. Pausing for a moment to wipe a few tears from her eyes, Steph went on to share that her mom "is the reason she is so excited to be on the Dean's list at the college. Mom is just so proud of that."

She said that even though her older sister had actually been attending college when Steph graduated from high school, the lack of conversation at home, along with an understanding of all that college entails, contributed to her dropping out. Watching her sister attempt college a few times without completing it motivated Steph to finally start taking college seriously but did not give her any models of success upon which she could draw.

> My older sister started college and I saw her doing that, but I never really asked her any questions about it. It wasn't something we talked about in our house. She is much older than me. She didn't finish college and I don't even remember how we figured out she wasn't going anymore. It was like no one even cared.

Steph shared her thoughts about having to enroll in the MATH 080 developmental education mathematics course alongside the college-level mathematics course:

> I wasn't as upset as other students were. I knew my [mathematics] skills were not good and I needed all the help I could get. I didn't do terribl[y] on the placement test, but I knew I had been out of school for some time and forgot everything I learned in high school. I thought the MATH 080 would be a slower pace and good for me to make sure I [could] pass [mathematics] and move on in my degree. I hadn't been to a [mathematics] class in about seven years, so I thought the 080 would actually help me.

I was impressed by Steph's positivity about having to take a non-credit developmental education mathematics course and asked her what she would say to other students who enter the college, take the placement test, and learn they have to enroll in a course that will not earn them any credit. She responded:

> If it is a needed course, don't worry about it too much. Just face [the fact that] you need it. You are clearly not the only one in the class. Use the information to your advantage. That is the mindset I had and it worked. I kept telling myself I need[ed] this because I wasn't very good in [mathematics] in high school, so I needed this course to get better. So I, you know, I am not the only one here and I shouldn't be embarrassed and I wasn't. I went in with the mentality that I was not going to care too much and just get through it.

Steph believed that the biggest factor in her success through MATH 080 was the constant communication she kept up with her instructor. She stated, "He was very personable with us. He tried really hard to make sure we knew that we could ask him anything." She believed that having a positive mindset is the reason students are successful in developmental education courses.

In addition to her positive attitude, Steph sought out "one-on-one help from tutors" to make sure she understood the material. I asked her why she believed the tutoring center was helpful. "I struggled with [mathematics] and needed someone to break down the examples for me. I couldn't just read the stuff after class and know it all myself enough to do well in the homework and later the test," she told me. Steph was one of the participants who utilized online tutoring which was newly available to students during the spring 2015 semester.

> Online tutoring was the best! I have such high anxiety with tests so I needed to check with a tutor before tests to make sure I knew what was going on. They helped me with my hissy fits when I couldn't figure something out. Especially around 11 o'clock at night the day before a test.

Although Steph speaks positively about her experience in the MATH 080 course, she did have some advice for the administrators of the college that she believed would help students be more successful in the course. She wanted them to take a closer look at the current textbook choice as she believes it lacks examples. "I would say the books need to be changed. If I had [had] to learn from the book alone, I would have failed for sure. I don't know how any students are going to learn without examples." Steph leaned on the instructor's teaching methods in class to offset the lack of examples in the text. She recommended that future faculty members give "lots of examples to the students."

Excerpt from Steph's I-Poem

I did use tutoring
I like the one-on-one feeling
I felt really supported
I got all the help there
I made friends with the tutors
I also used online tutoring
I was able to log in whenever

I liked that there was always someone available
I was able to walk through examples with the tutors
I felt they were so patient with me
I liked the whiteboard feature
I loved it
I liked to work slowly on an actual problem
I would say I logged in at least once per day
I definitely knew what was going on

I am really close to my family
I am so close to my mom
I went through a drug phase
I was pregnant
I was homeless
I needed her help
I moved back in with her
I had to do something for myself
I decided to go back to college
I am a different person now
I was a troublesome child
I am so excited to be on the Dean's list
I love making my mom proud
I am always striving for that for her

I am not scared of [mathematics] anymore
I remember the basics from this class

Brett. Brett was prompt to his interview and seemed very shy from the beginning. Once the interview started, it was very clear that Brett was timid, and while he answered every question, he did not offer any details. When we met, Brett had been at the college for a total of three semesters and noted that he had chosen to take a semester off after graduating from high school "to figure out what major to pick." As far as career goals go, Brett hopes to complete a degree in criminal justice and become a correctional officer. Brett seemed excited to share his future plans and mentioned enjoying the coursework in criminal justice, saying, "I got the English and [mathematics] out of the way so I can get on with the fun stuff – the criminal justice

classes." He plans to transfer to a four-year school after graduation and said he was not nervous about mathematics as he had learned all the basic skills he needed at the community college.

When I asked Brett to describe his journey in college so far, he stated that he really enjoyed the campus where he attends because it is "small, and the teachers–when you need help–they will help you." Brett shared that he enjoyed the developmental mathematics course he took because he could get all his questions answered there. He specifically noted the instructor as the reason why he really enjoyed the class and believed he learned so many basic skills.

> She'd go over every page and every question I had. She put the problems up on the board. She would even stay over after class if we didn't get it. She made her own examples and worksheets for us to practice with. That was really useful.

Brett was thankful for the friendships he made in the MATH 080 class. Brett told me the instructor did not assign seats and the students he sat with at his small table ended up becoming "some good friends who we talked about [mathematics] with but also everything else."

We talked a bit about the barriers Brett has faced during his time in college so far. Brett spoke of being a first-generation college student with a little bit of resentment in his voice. He shared that the expectation level amongst family members for his success was high and that put a great deal of pressure on him. This pressure has come with little to no support from his family members–none of whom have ever navigated their way through college themselves.

> My sisters are much younger than me and my brother is 18 and not on the right track. It was kind of hard being the only one in my family to ever try to go to college. They expect so much from me and put so much pressure on me but couldn't help me because they didn't know. I had to break the cycle and do something so different, so that is a lot of pressure and that makes it so hard for me. I have to do good or else…. I am the one

> everyone is looking up to. Everyone is always like, "Brett is going to do so well and make so much money" and take care of them.

Another barrier was the fact that he did not have access to the Internet at home. Brett stated that he spent "hours upon hours on campus to complete homework before and after class to use the computers and Internet as often as possible to stay on top of things." The availability of these computers for Brett to use was a benefit to being on this campus. "There were so few students at the school that I never had to fight for a computer. One was always available for me when I needed it."

Brett's advice for students who enter college and must enroll in the developmental mathematics course is to "show up every day. Listen and take notes and ask questions to the instructors and to anyone at their table or friends who know [mathematics]. The [mathematics] center is there to help and they should use it." Having taken and failed the developmental mathematics course before the co-requisite model was implemented, Brett had strong feelings about this new course-taking sequence.

> I think that it is working better than the way we took developmental [mathematics] before. I did not like that and did not pass that. I had a much better time in the co-req classes than in the old ones. The support we had in the class made it so that I would pass. The old way I felt alone and never felt like I could keep up. If I fell behind one week, it was over for me. I am taking the ENG co-req model now too and really think it is helping me in the same way the [mathematics] did. It was the same kind of experience.

Finally, I asked Brett if he would have to take any other mathematics courses when he was ready to transfer, and he paused to sigh and responded, "Yes." "Are you nervous?" I asked. "No. I am ready. I know the basic stuff from MATH 080 and still remember it all."

Excerpt from Brett's I-Poem

I like this campus because it's small
I feel like the teachers are there for you when you need help
I have also used the [mathematics] center and writing center for help

I got so much help with my questions in that class
I would ask the teacher and get everything answered
I would ask her to go over everything
I wasn't lost when class was over

I sat at a table with three other people
I made friends with them
I talked to them about life and outside of college things
I keep in touch with them still
I see them around the college still

Carrie. Carrie was four hours late for her interview. Her car broke down on her way to the campus from a weekend trip, leaving her stranded. She did keep in touch with me and I assured her I would stick around campus to meet with her. When she finally arrived, she was tremendously apologetic and thanked me for waiting for her so we did not have to reschedule at a later time.

Carrie was very passionate and friendly from the second she walked in to the conference room. From the beginning of the interview, Carrie noted just how overwhelming her journey through college had been thus far. Since her parents never went to college and still succeeded in life, they never put a strong emphasis on higher education.

> My mom didn't graduate [from] high school. My father didn't graduate [from] high school either. He's a truck driver and has been a truck driver since he was 16 years old, I believe. It affected me big time. I guess when I look back now, no one talked to me about college. No one encouraged me to go there. I never thought it was for me. [I thought,] "My parents don't have the money–how am I gonna pay for this?" I guess my parents

> were kind of ignorant to the fact of college and that there were programs out there for me and they didn't know about [them]. There [were] ways for me to pay for college, but they always made me feel like it wasn't something for me and I needed to go get a job. It was the feeling that they made it without going to college.

Aside from being a first-generation college student, Carrie shared with me that she often struggles with being a new single mom after a recent divorce while also battling some illnesses. She was very open about wanting to complete college to show her daughters how important it is to set a goal and stick with it. "College has been quite overwhelming to be honest. I signed up for college to basically to teach my girls to never give up on their dreams because they are eight and nine years old."

When asked about support and help she has received so far in college, Carrie noted she loved this college because "there are so many programs to help you." Carrie noted that she appreciated the services available, such as the tutoring center and online tutoring service, as they helped her "not be so discouraged during times of struggle."

I specifically asked Carrie what her thoughts were about taking the MATH 080 developmental education mathematics course. She was enthusiastic about her experience in MATH 080 and loved telling about her time in the courses.

> I think if I [hadn't taken] 080 before 123 I wouldn't have passed 123 at all. I would have probably gotten a big fat F. I made a B because I took the developmental education class and it taught me what I needed to know. I had the extra help from the extra professor in 080. I took 123 first in the morning and then went to 080. She spent more time with me because the class was so small. I wouldn't have passed 080 if it wasn't as small as it was, either.

Her advice for students who have to take the developmental mathematics course was to "go into it with an open mind and don't look at it from the beginning as a waste of time." Carrie feels very strongly about the MATH 080 course having helped her succeed in the college mathematics course she completed.

> In all actuality it will help you so much in any other [mathematics] class or any other type of class you need to take. I even got help with writing. When I first signed up I did not want to take two [mathematics] classes and my initial thinking was, "Are you kidding me?" But once you get in there…you realize [that one of] the benefits of that class is [that] they are connected in so many ways and it is benefiting you to take the developmental education class.

Excerpt from Carrie's I-Poem

I have had an overwhelming journey so far
I signed up for college
I wanted to teach my girls to never give up on their dreams
I have lupus
I am now going to finish my degree in accounting
I know it'll take me longer than most
I have to do what my body lets me
I still want it
I am constantly in pain
I also have rheumatoid arthritis
I have fibromyalgia
I also have a dream of graduating, though
I have these little kids looking up to me
I have joint custody with their dad
I wouldn't be able to take many classes
I am able to go to class and get studying done
I went to college for them
I want to be a role model for them

I wouldn't have passed any [mathematics] without 080 first
I would have gotten a big fat F
I took the developmental education class
I had the extra help

I wouldn't have passed if it wasn't so small
I liked the small class size
I would recommend it to all students
I think they'd feel better about it once they start
I wouldn't have made it in college level [mathematics] without the 080

I liked the small class
I liked the people in my class
I think you develop more of a relationship with people when there aren't so many
I like working in smaller groups
I heard people explain problems in different ways
I think that was really helpful
I know I learn differently
I didn't think of it like that
I thought that was beneficial

Ruby. Before I could begin asking Ruby any questions, she wanted to share a little bit of background information with me. Ruby thought it was important to share that she was not born in the United States and brought her perceptions about education in India with her to the college and ultimately to this interview. Ruby mentioned her strict upbringing in India, which included the idea that her parents expected her to choose a path in life they approved of. "I found it easier to study here than in India. I was happy the first time I came to the college. The best thing is the college here is ready to help you. I felt so good. I never felt so good in India."

Aside from learning the differences between attending college in the United States and education in India, Ruby noted that the family dynamic in her home growing up had also had an impact on her college journey. Ruby shared that college meant she was finally making choices for herself.

Ruby spoke candidly about her lack of mathematics basic skills. She stated, "I am very weak in [mathematics] and when I initially [went to] college I did not want to do anything with [mathematics]. I wanted to [pick] a major that would never make me take [mathematics]." In addition to the mathematics skills Ruby picked up in the course, she mentioned that the course

gave her some other life skills. “I learned how to pace myself in this class. Those skills I will have forever. She gave us time to map out a plan for the semester and now I do this with every course.”

Ruby’s advice for other students taking MATH 080 includes enrolling in the course as soon as possible and being open-minded.

> Don’t hesitate about actually registering for it. Just get it on your schedule and over with. It is important to take it because it will give you confidence in [mathematics]. It will let you know that you can do better and know that there is nothing impossible. To be truthful, I was at a zero level in [mathematics]. I didn’t know even addition or multiplication and my son used to do better than me and I kept thinking there is no way I am going to be able to do this and study [mathematics]. It really helped me and built [my] confidence…to go ahead and know I am capable of doing it. So, I think people need to take this up to build confidence … and to know …[that] they can achieve their dreams.

Ruby spoke about the importance of remaining positive through the trials that college brings and most especially maintaining a positive outlook for coursework that is difficult. “I had to have the right attitude. I want the knowledge from the instructors and what they are doing right now is really good.”

Excerpt from Ruby’s I-Poem

I formed good relationships with the instructor
I am very weak in [mathematics]
I did not want to do anything with [mathematics]
I wanted to pick a major that would never make me take [mathematics]
I was very scared
I learned every single major needs some kind of [mathematics]
I said let me just put my brains into this
I got to meet people who were scared like me
I built my skills for all of my other classes that have [mathematics] in them

I understand better

I always felt good to keep a relationship with the instructor
I feel that's the way you help students feel that what they are teaching is important
I want them to try their best
I wanted them to feel like I was really listening
I was really paying attention
I was really learning
I understand things I didn't before

I would tell them to go ahead and get into the course
I hesitated to register for it
I think it is important
I believe it gave me confidence in [mathematics]
I was done
I didn't know even addition or multiplication
I kept thinking there was no way to pass
I am going to not graduate
I think people need to take up this to build confidence

Beth. Beth was timid at first but quickly opened up and seemed excited to be part of the study. As soon as she walked into the conference room, she pulled out a signed consent form and a copy of the interview protocol with notes written all over it. She mentioned that she was a little nervous and had prepared responses to make sure she did not forget to tell me anything.

When I asked her about her college journey so far, she told me she had started at the college in 2006 and never selected an actual major to study. "I wasn't really sure what I wanted to go for. Just knew I wanted to go to college." Beth told me about spending time on the college's website and chatting with advisors to look at the courses she had already taken and credits she had earned to figure out if any of them led to her completing a degree. After some long discussions and questions, the advisor helped her figure out the steps to declaring a major and working towards actually earning the degree she wanted. Soon afterwards, she enrolled in her desired major; however, she then quit college altogether.

> I started with a gen ed major and after about a year, I realized that what I was going for only a technical certificate and I wanted an actual associate's degree and then [I] transferred into [a] medical assisting program in 2007 but stopped coming to college for about four years because of a job offer that conflicted with my course schedule.

After four years, Beth returned to college when a schedule change at work allowed her a bit more flexibility and she started taking classes to earn a degree in medical assisting. She was quickly hired by a local hospital after having spent time at the facility for an externship and once again stopped taking classes at the college to work more hours. In 2013, Beth returned to the college and declared, "this time [it's] for good." She reported that she had one more semester of courses to take before she graduates.

When Beth took the placement test she learned she had to take MATH 080. "I wasn't surprised that my [mathematics] skills were weak. It was such a long time ago when I had [mathematics]. I knew I was going to have a hard time," she told me. I asked Beth if she believed the MATH 080 class helped her be successful in other courses.

> It did. The MATH 080 helped me, for when I went into MATH 123 I was better prepared and not as scared as I thought I would be. I was able to really learn the basic skills in MATH 080 and was able to practice things that were hard for me in MATH 123 [by] using everything I learned in 080. It did help a lot.

Beth spoke at length about the things she wished she had known before taking the course. She spoke of the format of the class and wondered if she should have reviewed material to be covered in class before their scheduled beginning. This was not a practice she adopted, but she advised other students taking the MATH 080 class to consider it. Additional advice to students who will enroll in MATH 080 is to "definitely attend class and if you can't go, make

sure you figure out what you missed." She mentioned that she noticed that the peers who struggled in the class were usually those who were not attending class regularly or catching up after missing class.

By the end of our interview it was clear that Beth believed her success through the mathematics coursework was due in part to the co-requisite model because she kept telling how lost she would have been in MATH 123 if she had not previewed the mathematics skills in MATH 080 earlier in the day. We spoke about the administrators who put this course model together. I asked Beth what advice she would give the administrators of the college in regard to the co-requisite model of teaching developmental education.

> I think it is an awesome running class and I think that there should be more classes like this. I really do. It would save the students so much stress from trying to learn the basic skills and the hard stuff all from one instructor in one class setting. I really think this works great!

In addition to the struggles she faced as a returning student who had left college for some time, Beth mentioned that it was difficult to come back to college because she did not have anyone in her home telling her that earning a college degree was a good goal to have. She noted that it was difficult to seek any advice from home because her parents had graduated from high school and never pursued college. Her parents started raising children early in life and this meant they needed to obtain jobs at a young age. Her father sought out employment immediately after high school and her mother stayed home to raise her first child.

> Yeah, my mom graduated high school but didn't go to college. She got a job right away. She had my sister at 16. There [weren't] really a lot of options for her. At the time, she had to just be a mom. My dad didn't graduate high school and just looking at different

job positions and things, I knew I needed a degree in something in order to be successful myself. I did research, heard about college, and knew I needed to do something if I was ever actually going to become a nurse. I was the first one to actually join college in my immediate family. I have an older sister who had her first child when she was 16, so she went off and had to do like my mother and become a mom too. And she worked, too, because she needed money to raise her kids. No one told me, "Hey this is what you should do!" Even the simple financial aid form was a problem for me. I had no help to fill it out. It did motivate me to be the example and things like that.

Excerpt from Beth's I-Poem

I think mainly coming to [college] in the small campus helped me
I am a little bit introverted and shy
I liked the smaller classes
I have a lot of people that were in my class
I worked with during the term
I had some awesome professors

I made friends with one person in my class in particular
I really formed a relationship with him where we helped each other out
I actually built kind of a relationship with him since we sat next to each other

I mean, if I was to teach it
I would pretty much follow what my professor did
I would give students the opportunity to ask questions
I would set up group activities
I would want them to become friends
I would do a lot of visuals and tell them to do the same
I would make myself really available to the students
I had the opportunity to get specific questions answered

James. James was ecstatic to be part of the study and did not let an opportunity to share his excitement pass. In addition to taking classes at the college, James is also employed there. He works in the student success center on his home campus as an English tutor. He attributes much of his success through all of his courses so far to the fact that he works at the college and has

access to tutors whenever he needs them and also to any instructors who spend their office hours in the student success center.

James enrolled at the college in the fall of 2014. He is a part-time student at the college; he enrolls in no more than two classes per semester. James is currently pursuing a computer infrastructure degree and summarizes his future plans as "working somewhere to set up the actual computers and stuff at the company." Working with computers is what James describes as his dream career.

James reports that his high school did not push college and neither did his family. This lack of conversation made it so that James did not see himself as someone who would ever go to college. It was not until he had worked as a custodian for many years and spent a few years as a stay-at-home dad that James made the decision to pursue something different and more "challenging."

> I didn't know about applications or SATs or anything else I needed to do to even think about going to college. It wasn't even really mentioned. And then at home, no one knew about college, so we were definitely not talking about it there. It was expensive and that is all I knew about college. I didn't know there were grants or scholarships or even loans as a way to pay for college. I didn't know what I wanted to be and I didn't know that anything I would ever be would really mean I had to go to college. The economy was fine and I never wanted to be rich. I just wanted to make a living and be comfortable. I just wanted to support my family and not be rich; I wanted to have our needs met and that's all. I don't feel bad that no one could help me. I got a job out of high school and was making money, so I didn't feel like I needed to spend time on going to college. The priority was not college at that time in my life. My younger sister went to college and

> that's when I thought about it again. Then I was a stay-at-home dad for 10 years and then went back to work as a custodian at school and thought there had to be something better than that and ended up back in school.

When James summarized the key factors he believed helped him get through the MATH 080 course, he mentioned that his English teacher from the previous semester had remained a mentor of his.

> She is very positive and has been a very positive influence on me. I met her when I took English in fall 2014. She would take time after class to work with her students and I really looked to her for help with English while I took her class, but really even if I had questions about [mathematics] or college in general, she was always available to me.

James believes that the positive reinforcement from his peers, mentors, co-workers, and instructors helped him gain confidence in mathematics skills, which helped him get through the course. Their words of encouragement were especially helpful when concepts were difficult for him to grasp. He suggested that future faculty members speak in a positive manner to the students and learn to tell when they are struggling to ensure that students are successful in the course. I also asked James–as I did all participants–what advice he would give incoming MATH 080 students.

> They just need to stay with it. And be able to devote the time outside of the classroom to get help and the time it takes to do this stuff. Too many times students come in, they enroll in a class, and want nothing to do with the class after they leave the lecture. They have to put in more time and effort to pass with good grades and get to the next level in [mathematics] prepared enough to do well in the college-level classes.

James stated that time management is key to students succeeding in this developmental

mathematics course. He noted during our time together that it is especially important for those students who are juggling other life demands such as spouses, employment, children, and other coursework to have a good understanding of how to balance their time.

> I took my mentor's advice and my wife's since she went to college – same thing. You need to set a specific time to meet with your instructor and always ask questions when you're confused. If you get too frustrated, you're going to hate the class and the assignments. Time management is also very important for someone who is a parent, spouse, or working. It matters that they take the course stuff in small chunks.

Excerpt from James' I-Poem

I've encountered very positive instructors
I liked that she was relaxed, very laid back
I felt very comfortable
I wasn't nervous or anything
I thought she was helpful
I didn't have the uncomfortable feeling when I had a question
I never felt like I couldn't ask something
I never felt like a question was stupid or silly
I was in a good atmosphere
I felt like it was a nice family environment
I liked the small class size in [mathematics]
I needed the one-on-one time
I almost felt like I had a personal tutor
I never had to wait for a turn to ask a question or get help
I loved her videos
I felt like I never missed class
I had a very positive experience

I took my mentor's advice and my wife's since she went to college
I set specific times to meet with my instructor
I always asked questions if I was confused
I tried not to get too frustrated
I knew I would hate the class
I cannot think that way
I go to the student success center
I contact my instructors if I am having trouble
I check Blackboard all the time

I want to succeed
I have to put in the work

Alexis. Alexis rescheduled her original interview time because one of her children became ill the morning we were set to meet. Alexis has four children and has attempted college a few times. The main reason she has returned this time with such determination to graduate is because her oldest son is at the age where he is discussing his options for college and she wants to be able to speak from experience as well as show him how important it is to earn a college degree.

Alexis starts off her story about her academic journey by sharing that when she was a high school student she was on the highest honors and never struggled with classes. Notably, Alexis stated mathematics was her "thing." She loved numbers and aspired to be an accountant. Her short-term plan in life was to graduate from high school and go to school to be an accountant. Her plans changed when she found out she was going to become a mother a few months after high school graduation. After high school graduation, Alexis still wanted to at least give college and an accounting degree a shot, so she enrolled at a local four-year institution and about eight weeks into the semester realized it was too difficult to live with her parents while being a parent herself, so she needed to get a full-time job and work towards moving herself and her son out to a place of their own. Ironically, Alexis was able to get an entry-level position at an accountant's office and worked at this office while raising children for 13 years. Giggling, she told me that she is so grateful she never earned her accounting degree because "actually working in accounting showed me how much I hated accounting."

Knowing now how much she did not enjoy the accounting field, Alexis decided to major in mathematics education when she returned to college a year ago. Alexis' recounting of her

return to college was interesting as she admittedly entered with "no self-confidence and knowing I would be so low in my skills and have to take a bunch of non-credit courses."

I asked Alexis to elaborate on why she believes she made the right choice in taking the MATH 080 class and she noted, "Once I was actually in the class I realized how much it helped and recommend it to everyone who is taking college-level [mathematics]." I was eager to hear Alexis' advice for other students having to take MATH 080. "Attendance!" she shouted.

> You can't learn if you're not there. And make sure when you are there that you are paying attention and asking your questions to communicate to the instructor whenever and however you want. If the professor thinks you're good and you're not communicating that you need help, then she is just going to move on. If you let her know you're stuck, then she will make sure you catch up. I think with any course, you make sure to go and get your questions answered.

Alexis' motivation to complete mathematics and be the example for her entire family–but most especially her own children–was clear in her responses.

Excerpt from Alexis' I-Poem

I was borderline with my English and my [mathematics] on the placement test
I didn't put my best foot forward
I spent time at the center
I did not really do much better
I had too much going on
I just decided to take the scores
I love that I made this choice
I actually needed the class

I recommend it to everyone who is taking college-level [mathematics]
I attended every single MATH 080 class
I knew I really needed these basic skills
I knew what was coming in other [mathematics] classes
I went to the instructor for everything I needed help with
I felt comfortable enough to go to her

I took the college-level [mathematics]
I still went to her for help
I felt far more comfortable with asking her questions
I always communicated with her about any questions I had
I loved the videos

Kate. Kate was very enthusiastic and open to answering all of my questions. She was a former student who was returning to the college after taking some time off for work, and her journey was unique in that she had passed remedial courses once before. The results of her placement test put her back in a remedial course for mathematics but she shared that she went to remedial mathematics with a different attitude this time around. She was detemined not only to earn an A in the course but she also wanted to actually learn something and be able to apply it in the future.

Kate's college journey started many years ago. In fact, Kate had already earned a diploma from this college in graphic design, which led her to work for a single publishing company in the field of graphic design for 15 years. At some point throughout those 15 years, Kate grew to hate the job and began envisioning what she wanted to do next. She noted that her second time around at the college she was going to be "super picky" about the major she pursued and ultimately the next job she took. In 2014, she re-enrolled at her alma mater and is now pursuing a degree in nutrition. Upon graduation from the college, Kate plans to enroll at the local four-year institution to pursue a program that will allow her to become a registered dietician. When Kate first started college she was undecided on a major of study. After some time in the workforce and a few years at the college, she is well-prepared to transfer after graduation and know exactly the major she would like to pursue.

While she knew how to apply, enroll, and register for classes, it seemed that being first-

generation had affected her first experience in college, as she did not know enough about selecting a major.

> Nobody ever talked to us about college when I was young. Talking about it does a lot of good and granted, like I said, this is my second go at it and I have paid for it both times. So my first go was a good experience but I wasn't smart about what I was doing and how I had enrolled and picked a major, but really just went with the flow. That's why I am back again. I didn't do what I wanted to do the first time around. I did what was the easiest for me to get started doing at college. I absolutely didn't take it seriously the first time around. I do now. But I am older now and really wish I would have done it right the first time around and done what I wanted to do then. I wasted so much time and so much money on a degree I will never use again. I hated every second of using that degree.

When we discussed her thoughts about the MATH 080 class and its effectiveness, Kate noted that she found the course to be helpful and the reason that she and most of the peers she formed bonds with were successful in college-level mathematics.

> During class, we would even talk to each other about how we would ever pass the 123 class without the 080. It felt like a preview to what we were going to do in the college-level class and we learned all the basic skills we needed to make sure we passed.

Kate shared some of the decisions she made as a student in MATH 080 and told me she believed that any students who apply themselves fully to the course will "pass with flying colors and have a good experience." I asked Kate to share with me any advice she would have for students who have yet to take MATH 080.

> The first thing I would say is to make sure you show up. Number one–you have to be there; you can't just skip the class and think you're going to be able to do it on your own.

> You are obviously in there for a reason, so take advantage of it. If you…are determined [to get] a good grade, you will be ok, but you have to apply yourself and use the resources available. You have to know yourself.

Excerpt from Kate's I-Poem

I liked the much slower pace
I felt like it was a preview to what we would need later
I enjoyed the extra help she gave us
I am the type of person who took the extra worksheets
I would actually do them all, too
I knew what it would mean
I would be spending more time at home doing work
I was going to really learn the concept
I stayed after class
I struggled sometimes and it helped a ton

I made it because of the 080 classmates
I forgot something
I knew to ask them
I can contact them
I am completely lost
I always feel better
I form relationships with people well

Jenny. Jenny agreed to the interview within 10 minutes of receiving my invitation email. She was very flexible about scheduling our interview and said she would make it work for me as she knew I was going to have to drive two and a half hours to get to her campus. We communicated by email only to finalize the details of our meeting. Although I sent Jenny the interview questions ahead of time, it was clear from the beginning of our time together that she had not taken the time to review them. Jenny did not seem interested in our interview, rolled her eyes, and giggled at some of my questions. From my observation of Jenny during our short time together, I do not believe that she knew what she was getting herself into when she agreed to be interviewed, and if presented with the opportunity again, would likely not take me up on it. I

often felt rather intrusive when I asked questions, as her responses often started with "Geez," or a sigh, or even body language signs that she did not want to respond. I approached questions cautiously and when Jenny was clearly uninterested, I moved on.

> Geez! I think I applied to Ivy Tech in 2013-2014 but I don't like school, so I didn't wanna come, so I didn't. I sat out until 2014-2015 and then that is when I came and completed the [mathematics] whatever. Ummmm college sucks. Man, college sucks. It's a lot of work. A lot of hard work. And I am a big procrastinator. I do everything right before it's due. It's terrible.

I asked Jenny whether or not being a procrastinator works for her. She responded that it does work for her but "it's terrible and you have to make sure you get it done and don't run out of time." I was curious if procrastinating was something that Jenny recently picked up or if it had always been part of her work habits. She responded, "I didn't procrastinate in high school. But I didn't care about high school. I care more about college."

Jenny's interview did not start off as positively as I had hoped, but her advice to administrators was positive.

> Well it was a nice format and it helped me. I really like that there is a class at the college I can take to get all of my basic [mathematics] skills stronger. It helped me a lot. Even in other classes. We did things like learn to balance a checkbook, read a recipe, and work with money, and these were all things I use in my life.

My interview with Jenny ended with a conversation about being first-generation students. I shared my experience and asked about hers. Jenny started by sharing that she had honestly never thought about being a first-generation student until now.

> I never really thought about [being first-generation] but it really has [influenced my experience in college] now that I think about [it]. I want to be the first person to do something great and get [my] degree to be the first in the family. I really want to set the example for my son and also for anyone else in my family and show them that even though a lot of them are doing great–they could be doing better–I am sure. I want to be the example for everyone and even my older family and show them it is never too late to go back to college. I am hoping they will.

Excerpt from Jenny's I-Poem

I didn't always understand things
I asked her to go over things a few times
I would also meet her outside of the class
I could get together with someone in the class to work in groups
I hoped someone in the group understood
I wanted to know the easiest way to do things

I think it was a nice format
I really like that there is a class like this
I can get all of my basic [mathematics] skills stronger
I use the skills in my life

Amelia. Amelia works as an administrative assistant at a church across the street from the college. She came to meet me immediately following her work shift. I was actually running a few minutes late to my scheduled interview time with Amelia as my earlier interview went over our scheduled time. She was very patient and when I called her to let her know I was about two minutes away, she said "No worries. See you soon." When we finally linked up, we started the interview right away.

I asked Amelia to tell me about her college journey and she started by telling me that she had actually started at the college in 2008 and stayed for about a year before transferring to a

four-year institution. Late last year she left the four-year institution and transferred back after hearing that the community college was a much more economical option.

Amelia shared her thoughts on how she had decided to set an example for her little brother so he can feel supported through his college journey since their parents do not have the experience in college to give them any firsthand knowledge.

> I definitely think that it has had some effect. Even when I was in high school my parents struggled to help me. My dad is tremendously proud of me [that I have gotten to] this point. My parents dreamed [that I would] go to college but never dreamed of it for themselves, so I am so happy to make them proud. My younger brother is going to college and I am making sure I help him since no one really could help me. I am doing this for myself but I really want to be the example for him and show my parents that this was my dream, too.

Amelia is currently working towards a degree in office administration as she works as the secretary at her church. Amelia and I discussed mathematics skills and the struggles she has always had with the subject area.

> [Mathematics] is very much a struggle for me. Always has been. Even in high school I struggled with it. When I came home, I was very concerned about taking [mathematics]. With MATH 080, I was slightly concerned I might fail but it was the complete opposite. I would have failed [MATH 123] without the MATH 080. I leaned on my family quite a bit to make me feel better, calm me down, and talk me off the ledge. My family has always made me feel better when I struggled with anything in my life so I needed them as I started [mathematics] classes.

After we discussed her struggles, we moved the conversation to MATH 080 in particular

and the value of the course for Amelia. Amelia took the time in our interview to share that she enrolled in the course without exactly knowing what the course entailed.

> I think that at first along with the other students, we were all super apprehensive about the class. It was really weird because the MATH 080 class was three hours a week but we didn't get college credit. We didn't understand the format of the class. I don't know who was supposed to tell us before class but they didn't. I had no idea what to expect. After the first class I knew what was coming but I was so apprehensive about the content. I definitely think it was really great but we need to know more about MATH 080. I really hated not knowing what I was going to do in the class. Thinking back, I really should have asked, but it would have been nice for them to just tell us.

Her feelings about the course changed when she was actually with the instructor and other peers. She attributed her change of heart about the course to the following advice she took to heart herself.

> Remembering how I felt, I would make sure the students know what MATH 080 is all about. For a long time I felt like it was a mistake that I had two [mathematics] classes. I remember the feeling of concern having to take remedial [mathematics]. I was a bit disappointed at the beginning when I first heard the news. It was one of the best decisions I ever made to take the class. I would have never been as successful in any [mathematics] if I [hadn't taken] the remedial class. Give it a chance and if you really go and put forth the effort–it will really help you. You could always tell the students who gave up and didn't stick with it. They never used any resources. Take any resource available and if you are struggling, don't struggle alone. Get some help. Make a friend and go ask the

teacher or a tutor so you can feel better and more at ease. There is no reason for anyone to really struggle alone with all the tools out there.

Amelia was adamant about the institutional resources such as the testing sessions on the weekend and the mathematics lab she took advantage of during her time in MATH 080 contributing to her success in her mathematics courses. When I asked her if she could give any advice to instructors of MATH 080, she stated that she would encourage the instructors to share the institutional resources with the students in the class to ensure they are familiar with their availability.

Excerpt from Amelia's I-Poem

I like tutoring
I like the small group help before and after class
I like to talk to my classmates
I like learning from them
I also talk to the teacher
I could get my questions answered from her as well

I have always had a struggle with [mathematics]
I struggled with it even in high school
I was very concerned about taking [mathematics]
I was slightly concerned
I might fail
I would have failed without the MATH 080
I couldn't imagine passing any of the other classes without it

I needed my family to talk me off the ledge
I went to anyone in my family who could motivate and encourage me
I made the choice to go to the [mathematics] lab for help
I really needed some [mathematics] test prep
I can't imagine passing any of the tests without it
I would walk in very unsure
I would walk out feeling super confident
I was one of the ones who always went
I do believe it definitely helped me

Sue. Sue arrived 15 minutes before our scheduled meeting and was very apologetic about arriving so early. I welcomed her into the conference room and thanked her for being so early. Sue enthusiastically responded to my questions and seemed to love spending time with me. We started our time together discussing Sue's major and how much she has enjoyed her time at the college. Prior to Sue's interview, I was unaware that she was an early childhood major. She was excited to hear that my experience included teaching early childhood courses. "I have a 4.0 grade point average and plan to keep it that way."

When we discussed her 4.0 grade point average, she jokingly said she was not sure why it meant so much to her to maintain a perfect grade point average. During this time, she mentioned her son for the first time and shared that he was a college student at the same campus. "This is an interesting story. I pushed my son to go to college for a few years and after he enrolled, he turned the tables on me."

Sue began by saying that it must be said that times were different when she graduated from high school and was ready for college. Her thoughts were that high schools really emphasize attending college in today's world and this was not the case when she was a senior in high school.

> I was young and dumb and my parents just sort of let me be young and dumb. I regret it. I live with a regret of all the things I could have done earlier in my life. I am old now. And my kids–oh my kids started college so late because I started so late, I bet. If I [had gone] to college, maybe my kids [would have, too]. My parents finished high school and that's all they needed. Today's world – you need extra education to get a good job. Totally different generation for my parents–where they were going to be just fine with just a high school diploma. They didn't know college would be of value, so they didn't bother.

Sue told me she was extremely intimidated when she started college and worried she was "too old to learn anything." This feeling went away a few weeks into her first semester when she realized that even though she was the oldest student in all her classes, she was really picking up on the concepts and could further discussions in class and online. "Sometimes I feel the need to give other people in my class advice so they won't make the same mistakes I did and actually graduate."

When she mentioned advice I took the opportunity to ask specifically about the advice she would give students who enter the college and are required to enroll in the developmental mathematics course as she had been.

> I would tell them that, yes, I was confused about why I had to take MATH 080. I didn't understand how the whole thing worked. I would tell them to not be so mad about it. It will do you good. Take MATH 080 because it will help you. Especially if you're a visual person like me. They have the time to get you ready for the other classes you will need. When you get into the class – pay attention, come to class, get the help you need, and get the support you need when you are there and if it isn't enough time for you there, get the extra help like the [mathematics] lab that you need.

Continuing the conversation about advice, I asked Sue what she would say to college administrators about the developmental mathematics course. Her advice was a response to the confused feelings she had when she first enrolled in the course.

> I would say maybe you need to explain to people more of what it entails because when you just see that on your schedule, you wonder why and how you're supposed to do it. If you don't understand what it is, you are probably not going to be happy about it and get overwhelmed before you even get in it. After the first day, you say you understand it

now, but if I [had known] before, I would have felt more comfortable going into the class.

Excerpt from Sue's I-Poem

I think taking MATH 080 went slowly and really helped
I had some problems with learning the stuff
I really understood [mathematics] things
I could apply them later
I don't think I would have passed any other [mathematics] without 080

I liked that she went over particular problems to start the class
I liked that she would break it down and put it all on the board
I appreciated that she spoke in our terms
I needed her to slow the process down and she did
I understood it
I could apply it to the other problems

I wanted to go to college right after high school
I don't know
I was young and dumb
I had a parent that kinda let me do whatever
I regret it
I live with a regret of all the things
I could have done earlier in my life
I bet my kids would be different, too
[If] I would have went to college maybe my kids would have
I regret it so much

Tina. The story behind how Tina ended up being part of my study is an interesting one. Tina was in the mathematics lab when I got a call about a cancellation. One of the participants scheduled to interview with me could not make our meeting. I had driven two and a half hours to this particular campus and was disappointed that I was leaving one interview short. Tina had received my invitation email and when I walked out of the mathematics lab, she asked the lab monitor if I was the Stacy from the email she received who had been conducting the interviews. The lab monitor sent her to the conference room where I was and I described the study. Tina agreed on the spot to be interviewed but told me it would be about two hours before she could

come sit with me as she was rushing to her history class. I waited for her and we met later in the day.

Tina started at the college in the spring of 2015. She noted that it was her first semester in college and she quickly recognized that she was an adult student in the college. Her major is massage therapy. Tina noted that she is currently a part-time student because of her current work load and because she has children. “It’s just two classes a semester, and you know currently that’s really about the biggest load I can take.” Tina spoke about how much she liked the co-requisite mathematics course set up and in particular the developmental mathematics course.

> The MATH 080 class gave me all the basic skills I needed to get ready for the other [mathematics] classes I had to take. My program doesn’t require too much [mathematics], but still, I struggled with [mathematics] even in high school and now I [had been] away from it so long that it was even harder for me. It made me feel better about taking college [mathematics]. I knew there would be additional support and help for me and a good refresher of [mathematics] skills I could take with me to the other courses.

Tina was enthusiastic about the co-requisite model set up. I asked her what she would say to students from the start of the class to help them leave with a positive experience like hers.

> Just number one–try and soak in what you can in MATH 123. But, that MATH 080, that was the big key and it is a big key. I think it helps a lot of students and I don’t know what kind of work they did afterwards but I’m pretty sure that everybody that was in the MATH 080 passed the class. You know, that was the whole point of it was, you know, to get you to pass that class and I think most… everybody passed it with at least the grade they needed, if not better than what they expected. It’s still an investment. I mean, it’s, um, nobody wants to have that extra workload, especially if you have a support class that

> has [its] own assignments outside of, you know, your MATH 123. And, it's like, oh yes even though it's the same subject. It kind of seemed squished together, and you're like, 'I got to remember to do this,' but it's still an investment. I believe it was worth all of [the] money.

Aside from sharing enthusiasm with students who will be in her position upon enrollment at the college, Tina had some positive things to say to college administrators.

> I think that they made a smart move when they started this model. Most of the people who are coming back to school are adults that have–I'm not very old but I've been out of the loop of school for enough time to go–"I kind of remember that happening but I don't remember the full procedure how–you know I don't remember the steps to do it," so it was nice to have that. So, I think they did fine in that.

Speaking to instructors, Tina recommended they have open discussions in their classrooms in an effort to ensure that students are on the right track and understanding the topic before moving on to another topic.

> You know, finding out what it is got them puzzled. Make sure that you know when they leave that if that they understand what the concept was and if they don't give them the option for maybe some tutoring or meeting with you later or whatever, you know.

We ended our time together discussing that Tina considers herself a first-generation student and the effect that that has had on her college journey. She began by describing her parents and ended by talking to me about her older brother who graduated from college and works as a pharmacist.

> Both my parents are not college graduates. My dad is a business owner, but he's worked really hard to get where he is and he is kind of one of those phenomenons on being able

to be in the position he is and dealing the business he's dealing without the education. I think business management without that formal background is tough. Dealing with other competitors and people–I feel like, like you know, maybe he could benefit from some education, but he didn't go. I have one sibling who did go to college, and he's a pharmacist. My parents supported him and they try to support me, but it's hard. They don't quite understand, but they're supportive.

I furthered the discussion with Tina about her brother who had graduated from college and asked if she considered him a good point of reference for navigating higher education. Tina then shared that her brother lives in Arizona, so on a few occasions she has reached out to him for advice or help with a college question, but it is not a consistent conversation.

Excerpt from Tina's I-Poem

I struggled with [mathematics] even in high school
I was away from it for so long
I took the class to feel better about [mathematics]
I could take it all with me to other courses

I did get close to the instructor
I felt like we were friends
I talked to her so much during the semester

I think they made a smart move when they put the course out
I am not very old
I have been out of the loop of school for enough time
I kind of remember this [mathematics] process but not exactly
I needed to practice some more before taking college [mathematics]
I think they did fine in the courses

Marie. Marie waited patiently for me while I wrapped up the interview before hers that went a little over our scheduled time. I was very apologetic when she entered the conference room and she assured me that she was eager to meet with me and did not mind waiting a few extra minutes to get started. She apologetically explained that her phone would likely ring in the

middle of our interview and she would have to stop for a quick second as it would be her youngest daughter confirming she had made it off the bus and was at the house. This indicated clearly that Marie was balancing college life with a home life.

Marie described her college journey so far as "interesting." Before enrolling at this college, she had spent some time at a local private college, and in between had spent a number of years working full-time and not taking classes at all.

> I was a little disappointed when I enrolled again because I had to start all over again, it felt like. But overall, I need to say it's been rewarding so far. It's been very interesting but also a great transition. The college has been very accommodating with the resources that they offer. There was always tutoring available and the [mathematics] lab was easy to use because you didn't need an appointment. Ummmm…the programs that they have to offer and just that ease of being an adult in the college life. It isn't easy to come to college as [an older] adult, so it's nice that they recognize that and support that by offering programs for students who have been out of college for some time. The reality is that I don't learn like [an] 18-year-old. High school vs college. College is easier than high school. A lot of the instructors that I have had the pleasure of working with have been great at understanding. There is not a whole lot of pressure. I don't know if it will be different once I get into my chosen program. But as of right now, it has been amazing.

When I asked Marie about being a first-generation student. She looked at me, pulled out a tissue from her pocket, and said "I will try not to cry." She took a few deep breaths and began to respond. "My parents didn't go to college, but I have a really special cousin [who did] and I am so proud of her." I asked Marie to tell me more about her and she did.

> She has done such amazing things and has been such a great role model to me. I really wanted to be like her. I know it's not going to be easy. Every day I think about my classes and I think about where she is and where her education is allowing her to go. She actually started her college career here and transferred to the university down the road and graduated as a pharmacy tech. She has been my motivation and my inspiration. She has paved the way for me and her own son. I want to pave the way for my own kids.

Marie talked about her transition out of high school and shared that college was not at the forefront of conversations at home or really anywhere. Her parents had no experience with college to share.

> If my mom or dad had gone to college, I wouldn't have thought college goals were so impossible. At 40, I found my motivation through my cousin. But I wish I was 20 years old, taking the example of my parents. Life might have been so much easier. There are endless possibilities when you start so early. There is so much out there and I feel like I missed out because I am starting so late. Better late than never I guess, but I wish someone [had been] there as the example for me to start sooner.

Marie's major is respiratory therapy and she reports that she will be ready to apply for the program of study by fall 2016 when all of her pre-requisites and core classes are completed. After we talked about her overall goals at the college, we shifted our chat specifically to MATH 080. I asked Marie if she thought the course was helpful to her. While she eventually found the course helpful, she stated that she had been confused about the purpose of the class until she asked about it on her first day. She said, "I got in there and hoped someone would tell me why I was there and how it was going to help me. It ended up that I really enjoyed the class and format but wish I [had known] sooner what to expect."

When I asked Marie what advice she would give to students who entered the college and after completing the placement test learned they had to enroll in MATH 080, she shouted out one word: “Resources!” I asked her to elaborate further and she went on to give a few more details.

> Utilize the resources available and go in with a totally open mind. Go in knowing how you learn and how best you will be able to make it through the class. Sixteen weeks is a long time. Just stay focused on your goal and don’t be discouraged. Know that the college and the instructors really want you to pass. But definitely utilize the resources. I would have maybe passed the class without going to the tutoring centers, but it wouldn’t have been pretty and I may have passed by the skin of my teeth.

Marie would encourage instructors specifically to get to know the students as best they can. She became emotional as she described what she hopes instructors of future MATH 080 courses would do to assist their students. She believes that if instructors take the time to get to know the students and understand their personalities and learning styles, the students will likely relate more to them and approach the course with a more open mind.

As far as advice for administrators goes, Marie circled back to her response for the instructors and what they need to do in order to ensure their students are successful. Instructor training is where she focused her advice, stating she would advise administrators to make sure they “train their teachers to learn about the students’ learning styles in their class. It depends on their learning style and how they will teach them that will determine whether or not they’re gonna pass.”

Excerpt from Marie’s I-Poem

I had this big fear of [mathematics]
I attempted
I said I was deathly afraid of [mathematics]

I didn't know what resources were available
I didn't complete the course
I go into the course knowing more now
I want to graduate
I definitely needed to make sure to put it all together
I set my sights on the degree

I have a 12-year-old and a 9-year-old
I think it was the inspiration that it gave them to see me doing homework
I had class
I think they wanted to make sure
I could get through the [mathematics]
I was really in it
I am almost 40 and going back to school

Moon. Scheduling a time to meet with Moon proved to be a challenge. Moon works, has children, and is enrolled in a full-time course load at the college. She finally told me we could meet between her Tuesday morning class and the start of her afternoon shift at work. Moon walked into her interview wearing scrubs as she was scheduled to work immediately following our time together. We jumped right in and began discussing her college journey so far. She started at the college two and a half years ago, and even though she had hoped to graduate already, she is still really enjoying being a student at the college. I asked her if there was a reason she had not graduated yet and Moon shared that she had had some health issues that put her a bit behind. Moon's major is medical assisting, and she has only one semester left, during which she will complete her final externship and be all set to graduate.

I asked Moon if she planned to continue her education after graduating with her associate's degree and she giggled while sharing that she was not sure yet, especially because she had just obtained employment in the field.

I know I want to be a medical assistant and I know that I have enjoyed school; I just don't know that I am ready to confirm it is going to happen. I work now as a medical assistant.

> I actually just got a job as an MA a couple weeks ago. So I am really excited. I am going right into the work force. They were willing to hire me right now as long as I finish school within the next few months.

Moon spoke of the struggles she faced by being first-generation and then shifted to the focus she has placed on being a role model for her own children and the hope she has for their college journeys.

> This is something I feel quite often. My parents don't understand anything that I am going through right now with trying to balance time and trying to make a better me for my family. I don't blame them or get mad at them, but it does make me sad. When something good happens at school like [my making the] Dean's list, it's hard to explain to them the importance and the pride of being on the Dean's list. They must think "Who's Dean and why do you care if you're on their list?" I know it's funny and comical, but it is also quite sad. I have all these good things to share, like my GPA and how much I love a new professor, and they just don't get it. Well, they might get it. But it takes so much effort to get them to understand that sometimes I don't even bother. Knowing that feeling, I am committed to not letting my kids feel that way. I want them to know that I know what their experience in college will be like and that I am here to support them through it. It's the little things I wish I had their support with and I know they couldn't. I think I spent so long out of school after high school because there was no push to actually make college happen. I was to get married and stay home. But I didn't want to get married and stay home. I did get married and I did eventually stay home, but I had other dreams. [Dreams] that include a degree and a career. In my mid 40s that's what I plan to do now. So I am not mad at them, but it definitely affected [me] and still does affect my

> journey. I am determined to make a better support system for my own children because I know what it feels like to not have one.

Moon spoke very positively about her journey through MATH 080 and at the college in general, but she did have some advice for future students who will enroll in MATH 080. She wanted to express her deep belief that the students in the class need to advocate for themselves, be sure they know what they need help with, and express that to the instructor.

> I would tell them to make sure they ask all of their questions in class while they are in front of the instructor. Never feel bad about what you have questions about. Most people might have the same question and you just expressed it for them and helped them, too.

Just as Moon had some advice for students, she had some for instructors. She advised them to hear students out when they express their concerns and questions. Fostering a positive environment where students do not feel intimidated will help increase the success rates in MATH 080, she believes. She challenged instructors to remain positive and understand that all of the students are not always going to love taking a remedial course. "It is given that we are lacking skills in [mathematics] because we have to take the class, so it would be beneficial to learn from an instructor who is positive."

We moved on to discussing what Moon recommends for college administrators. She was very passionate about what she had to say and expressed how important it is for them to understand her feelings and implement ways to help with the confusion students feel upon finding out about their enrollment in MATH 080.

> I have something very important to say to the administrators. I feel like they are not doing a great job of telling students what this remedial [mathematics] is all about. I had no idea what it was and even thought to get rid of it on my schedule. I was so frustrated that I had

to actually take two [mathematics] classes in the same semester that I almost didn't even want to show up to the MATH 080. I am so glad that I did show up, but I am so frustrated even now that no one even told me what to expect until I was in the class on the first day. I think I got really lucky with my instructor because she could sense our frustration and tried to make light of it, but if I had ended up with an instructor who wasn't so thoughtful, I probably wouldn't have gone back. Tell us from the beginning that it is going to help us. Reassure us that it won't be a waste of time. [Keeping us in suspense] until the first day is not fair. Sorry, I am still really concerned about that and wonder about the students who ended up not showing up out of confusion or just not wanting to because they didn't know what to expect.

Excerpt from Moon's I-Poem

I don't know if it is just this campus
I really lucked out
I get support there and from my family and friends
I think it began before I even started school
I was researching things
I decided at that point
I needed to set realistic goals
I needed to take my family into account
I know they would have a change of life, too
I didn't have time to attend [to] everything

I dedicate it all to them
I know it is a really hard balance
I often wanted to quit school
I sometimes felt guilty
I know this was my dream, not theirs
I know there were times they were disappointed
I couldn't have done it without their support

Alex. Alex was eager to schedule and conduct our interview. He was open from the start of our time together about feeling intimidated as an older returning student. At first, when he

entered classrooms he recalled looking around and quickly realizing how much older he was than most of the students and questioning whether he should even be a college student.

Alex entered the conference room and shook my hand, thanking me for meeting with him and waiting the extra five minutes it took him to find the room number where we were meeting. I began by asking him to please share his college journey so far. He started off by sharing that he "got a really late start in college and started at 38 years old." When I asked him to elaborate on his "late start," he spoke of his recent career change from working at an RV factory for many years. His career change had been triggered by some work-related health issues.

Alex stated that he had enrolled in college because he wanted to work in the orthopedic field and was majoring in advanced robotics. In response to my question about why he had chosen this particular program of study, Alex told me that "this area … is the orthopedic capital of the world and the RV capital of the world. You pick one or the other. With the degree, I hope to maintain the robotics of one of those industries."

Alex noted that he knows he started college at such a late age because he had no role model when he was graduating from high school. He believes he is well-equipped now with role models from the college and the support of his wife and children to actually be successful and one day live out his dream of graduating and getting a better-paying job.

> When I got out of high school, I didn't leave with any high honors or anything and actually wound up getting my GED. But you know I went…into manufacturing right out of high school. My whole life, that's all I ever knew. Orthopedics requires more education, so I went to the RV work and manufacturing assembly lines. My wife and I got together and decided we needed to make a change for the family. That change meant I had to go to college. No one [had] ever talked to me about college. It was [assumed]

> that I would work in manufacturing because I [hadn't gone to] college. No one really cared or was bothered by that in my family because nobody in my whole family has ever been to college. Now, I look for my children to really go to college and I hope they see me sitting there going through college–even [my youngest] at six years old. They are so supportive and so involved with my education and with me going to college; I almost can guarantee they will go to college. I wish someone in my family [had gone] to college because I wouldn't be switching careers so late and maybe [would have] had an easier time in my classes and especially [mathematics] and my placement test.

Our conversation moved to the time in which Alex enrolled at the college and the experiences leading up to his beginning coursework.

> Before I started college, I didn't test high enough for college-level [mathematics] or even remedial [mathematics], so I was really intimidated. I had to do the tutoring program four days per week for free to be able to score high enough to take MATH 080. I spent so many years out of school, I was really behind and clueless. Then I started the class finally, and I know that I could never have passed college [mathematics] without first taking MATH 080.

I asked Alex if he believed he had had a positive experience in MATH 080 and he confirmed, "Very much so." Alex had some advice for students who will enroll in MATH 080 in the future after their acceptance to the college so they, too, can be successful in the course and believe it was worthwhile.

> I would say to not be afraid to ask questions. The instructors have to answer your questions, so ask them how best they want to get your questions. They really want you to ask questions, so there is something to move on in the class. Definitely to ask questions

> and take advantage of the opportunity to get some refresher skills. It's there to help you, so take advantage and make sure it does help you later in other [mathematics] classes.

Alex was adamant that instructors play a significant role in the success of the students in MATH 080. He believes that the instructors' role is even more important in remedial courses, as the students who enroll in them often feel uneasy about the subject matter. "Math was foreign to me when I first started the class. I didn't know anything about any processes to follow and had really uneasy feelings." Alex and I discussed the co-requisite model of mathematics instruction, and he confirmed how helpful the model was in making sure he had an easy way to practice the skills he was learning in mathematics and get all of his questions answered.

Excerpt from Alex's I-Poem

I had a great instructor for MATH 080
I was intimidated still
I was the oldest person in the class
I didn't know this new way to do [mathematics]
I don't think I would have ever passed college [mathematics]
I got so much more time to slow things down in 080
I needed more of the basic stuff
I learned in MATH 080
I just wasn't grasping some of the stuff
I am a visual learner
I didn't realize how much it helped
I am actually going through that again
I am not grasping the concept again
I watched every single video she posted
I would have not done as well
I worked really hard
I first came into class with uneasy feelings
I didn't know anything about any processes to follow
I learned it too back then
I learned it a long time ago
I know it was definitely out of my brain

Summary of Chapter

In qualitative studies, a detailed description of the setting of each story is necessary

before one can identify and analyze themes, patterns, or issues (Stake, 1995). In this chapter, I shared the 15 participant stories. Each of the participant stories is unique, yet they all share some of the same experiences as first-generation community college students who completed the mathematics co-requisite model during the spring of 2015. In Chapter 5, I will continue the analysis of data by reporting thematic findings.

Chapter 5

Findings

Overview of Chapter

In this chapter, I present the key findings of the study, and conclude with a discussion reviewing themes that resulted from both the construction and the sharing of the I-Poems. Six findings emerged from the analysis of 15 in-depth interviews, I-Poems constructed from those interviews, and final individual conversations with each of the participants. This chapter delves into the themes that emerged from participants' responses to my specific questions. To keep with the Voice-Centered Relational Method I chose to analyze the data, I will share what I found to be the contrapuntal voice in my participants' responses.

Themes

I utilized both a thematic approach (Boyzatis, 1998) and the Voice-Centered Relational approach (Brown & Gilligan, 1992; Gilligan et al., 2003) to analyze the transcripts from the interviews I conducted as outlined in Chapter 3. Utilizing a thematic approach is a common form of analysis in qualitative research. The thematic approach calls for the researcher to examine and record patterns or themes within the data. Themes are patterns across data that are important to the description of a phenomenon and are associated with a specific research question (Guest, 2012). The Voice-Centered Relational approach allowed me to examine the data from a variety of approaches through the many steps inherent to the method. Although the multiple readings and listenings were time-intensive, this method allowed me to be immersed in the data, which facilitated my being able to see emerging themes, commonalities, and differences (Ritchie, Spencer, & O'Connor, 2003).

Using both thematic analysis and the Voice-Centered Relational approach simultaneously helped me to listen carefully to the participants and maintain my impartiality. These methods allowed me to recognize common themes that emerged from their responses. The major findings that emerged from this data analysis process reflected dominant themes throughout the participants' accounts. These six findings are categeorized according to whether they are a support inside the college or outside the college.

Inside the College

1. Instructor
2. Institutional supports
3. Class format

Outside the College

4. Familial support
5. Peer relationships
6. Setting an example

Analysis of the semi-structured interviews yielded a large amount of data. Careful review of this data allowed for the identification of several common themes. The themes are summarized in Table 2 along with the frequency that the theme emerged from the data. In both Table 3 and the paragraphs that follow, the themes are presented in order of frequency with which they occurred.

Table 3: Interview Themes

	Theme	Frequency	Number of Participants
Inside the College	1. Instructor	118	15

	2. Institutional supports	90	12
	3. Class format	25	7

	Theme	Frequency	Number of Participants
Outside the College	4. Familial support	70	7
	5. Peer Relationships	55	11
	6. Setting an example	34	12

The following discussion uses direct quotations from the participants to identify, support, and articulate each of the six findings noted above. The purpose of this section is to allow the voices of the participants as storytellers to emerge and be heard.

Finding 1: The developmental mathematics instructor was instrumental in helping students feel confident in themselves and their abilities.

Each of the 15 participants placed a high value on the instructor that taught their particular section of MATH 080. There were a total of 10 instructors mentioned throughout the study by the 15 participants. Six of the participants had the same instructor. It was clear that the participants believed the methods used by their instructors, how their instructors made themselves available to the students, and their instructors' overall demeanor in the classroom affected their success through the developmental mathematics course. The participants' voices will be used to further explain each of these aspects of the finding.

Learning Support Strategies

The participants noted that the quality of the instruction inside the classroom contributed to their success in the developmental mathematics course. A few of the participants mentioned the importance of their instructors' use of visual support strategies during their time in MATH 080. Alex shared that during his time in the class he was having difficulty "following the steps to find solutions to the [mathematics] problems." He spent some time explaining these difficulties to his instructor, and she had the "brilliant idea to switch marker colors whenever she introduced a new step to finding a solution." Alex said the color switch "worked wonders," as he considers himself to be a visual learner.

This type of responsive instruction was possible due to the small class size. Participants perceived that smaller class sizes allowed instructors to spend more individual time with them. James appreciated having his developmental mathematics instructor spend more time with him than his other "instructors were able to…because of the class sizes." A small class size is an element of the mathematics co-requisite class format which is detailed further in Finding 3.

Tina stated that part of the reason she earned such a high grade in the MATH 080 course was that her "instructor reinforced material and provided students with worksheets to reinforce the skills outside the class." Alex shared a similar experience when he said, "She would stop everything and make sure we understood everything we were doing that day before moving on to another topic." Ruby added, "I liked being able to spend a long time [in class] on the same concept and practice those skills throughout an extended period of time." Kate appreciated that her instructor "did not move on to the next topic until [the class] had no further questions and a really good grasp of what they needed to do for homework and other assignments." Steph's

instructor "never rushed through anything and made the class believe [that] even though there [were] a lot of us in class, we were all important."

The participants also indicated that they found it very helpful when instructors provided them with additional materials that reinforced and supplemented the textbook and methods they had learned in class. Brett echoed Tina when he said the instructor provided the students with worksheets she had created to help them practice the concepts they had worked on in class. Brett loved these worksheets, as they served as "additional examples to work on besides the ones in the textbook." Alexis attributed much of her success in the course and mastery of difficult concepts to the fact that her instructor "did things outside of her textbook to help the class practice [the] main ideas of what was being taught in class." Alexis added, "This was the time the instructor took the opportunity to show the class different ways of solving a problem." James noted that his instructor "used additional examples not in the textbook to reinforce the steps to solve a problem."

Some of the participants identified instructor-created videos as another valuable tool that helped them be successful in the course. Four of them told me that their instructor had created and posted videos for the students to view. These videos were tailored to their specific needs and could be viewed at any time during the entire semester. James described the videos as "a reinforcement tool to have at home to make sure we were on the right track as we did our homework. It was like [the instructor] was going over the steps in class again right on your computer screen." Alex said he watched "every single video and that alone helped [him] get through the class." Alexis loved the idea of the videos because as a mother of four, "missing class was sometimes going to happen and the videos were a way to stay in the loop and keep up."

Instructor Availability

The participants shared how much they appreciated the fact that their instructors were available for help inside and outside the classroom. Alex shared that he would often leave the class thinking that he was ready to go home and complete his assignments and then find himself "stuck" on a problem. Whenever this happened, he would quickly draft an email to his instructor. "She always did [reply to emails] and it really helped me because sometimes I would be so stuck I couldn't keep [going] on assignments at home." Jenny believed email was a "very helpful way to get some one-on-one time with the instructor" and have her specific questions answered. Emailing their instructors worked particiularly well for the participants because their instructors replied quickly. Not only were they easily accessible and quickly responsive, instructors actively invited students to contact them and this helped them feel comfortable in doing so. In addition to instructors being very available by email, students reported that on-campus instructor availability was also a key factor to which they attributed their success in MATH 080. Some instructors offered their students time after class to go over any concepts with which they were still struggling. For example, Brett met with his instructor a few times after class to get some clarification on something he did not completely grasp. While Amelia did not contact the instructor much before or after class, she shared that she was aware that her instructor was "pretty much available to help us whenever we wanted." Sometimes the instructor created spontaneous small group study sessions after class when enough of the students seemed as though they needed additional reinforcement of a particular topic. Kate found these study groups to be "helpful and engaging." "One-on-one help from the instructor" helped Steph to feel prepared to work on homework when she left campus. "I would have never been able to complete my homework if I [hadn't had] help understanding the material one-on-one from my instructor after class," she mentioned.

Instructor Demeanor

The participants spoke positively of their instructors' demeanors in two specific ways: first in being warm and setting a welcoming tone in the classroom and second in communicating enthusiasm for their topic. Some students spoke of only one of these qualities, while others spoke of both. Alex stated, "Her positive spirit always made us feel welcome when we came into class." When I asked him to elaborate more on which of his instructor's qualities made him feel comfortable, he shared some specifics. "She was upbeat and really loves [mathematics]. When she spoke about how much she loved [mathematics], it made us enjoy it so much more." Jenny talked about how the nature of her relationship with her instructor "contributed to [my] wanting to come to the class." Kate offered, "I felt comfortable talking to him and asking him questions because he was always so positive and reassuring that the question wasn't dumb." She giggled as she told me that she believed her instructor was not a "[mathematics] robot and even though he has been teaching [mathematics] for so long–even he makes mistakes with the steps and that is okay." James described his instructor as "very positive and relaxed and laid back." He went on to tell me that "she has this high energy and it is so infectious, which was really unexpected in a subject like [mathematics]." Beth said her instructor's demeanor made it the first time she "had fun in [mathematics] and wanted to actually be there." It was clear to me that the instructors' demeanors–both in reassuring students and in communicating enthusiasm for the subject–influenced the participants.

The participants appreciated the validation they received from their instructors while enrolled in developmental mathematics. Validating experiences such as "encouragement, affirmation, and support have a significant impact on student development in- and out-of-college (Rendón, 2002). Faculty members can play a significant role in academic validation. It is the

instructor who sets the tone within the classroom. They can create the optimal environment in which validation is likely to occur. At its core, Validation Theory is rooted in an ethics of care that emphasizes the importance of interpersonal bonds and relationships. Within this framework, concepts such as empathy and teacher-as-listener play a prominent role. The students' perspectives confirm Rendon's assertion that educators should not just see themselves as content masters whose job it is to share their knowledge with students. Rather, they should also serve as mentors and coaches who actively help students find internal motivation and gain confidence in their ability to learn.

In the study conducted by Munoz and Rendón (2011), first-generation students reported that having someone else provide reassurance about their place in college made a significant difference in their ability to persist and complete (Munoz & Rendón, 2011). The simple act of reassurance was often described in lofty, awe-inspiring tones by students. It was also cited as the single most important factor influencing their success. While the source of reassurance and validation sometimes came from advisors or friends and family members, importantly, these words of encouragement often came from teachers. As this study involved first-generation students, for many of them, this was "the first time in their life someone had expressed care and concern and the first time someone had made them feel that prior life experiences and knowledge were valuable" (Munoz & Rendón, 2011, p. 15).

Validation Theory, one of the theories used as a lens with which to analyze participants' responses, includes strategies for expressing respect for students, such as instructors taking the time to learn every student's name. But it also involves an emphasis on seeking out those opportunities for students to witness themselves as successful learners. In Validation Theory, instructors should play the role of mentor by telling students, "You can do this, I am going to

help you." Students reported that they experienced validation from their teachers in many ways. For example, when faculty would spend time working additional examples–never indicating that all students should understand the material in only one way, but rather providing additional ways to help them succeed, students felt validated. Validation Theory invites students to become partners in learning by asking them to bring their own experiences to the class. Perhaps the most important element of Validation Theory is to encourage students to support each other by entering into peer networks, forming friendships, and providing consistent positive reinforcement (Munoz & Rendón, 2011). The peer relationships that developed in part because of the instructional practices in the classroom will be further discussed in Finding 5.

As noted above, the participants attributed much of their success in the mathematics course sequence to the instructor that taught their section of developmental mathematics. In particular, many of them cited the instruction in the classroom, including specific instructional materials, the availability of the instructor, and the instructor's demeanor, as contributors to their success in the course. In addition to the factors related to the class instructor, participants mentioned a variety of institutional supports that contributed to their success.

Finding 2: Institutional supports such as tutoring centers gave students opportunities to access assistance beyond their instructors.

Institutional supports played an important role in the successful completion of developmental mathematics for 12 of the 15 participants. The students complimented the institution on the number and quality of institutional supports available to them. Carrie said she was so happy she "picked [this college] because there are so many programs to help students." Sue enthusiastically told me that she believed the college "has one of the best support systems that there is in a college setting." James ended his discussion with me by saying that the college

"wants students to succeed and graduate, so they put all these support systems in place. The students have to work for it, too, but the support is always there."

Participants overwhelmingly noted their respective campus mathematics labs as one of the key factors that helped them successfully complete MATH 080. Campus mathematics labs offer a variety of services, including individual and peer tutoring, additional computer stations, and access to tools such as calculators. The participants were most grateful for the flexibility in hours the mathematics labs offered. Ruby told me that "going to the [mathematics] lab was good for her because there were people there who could help us and guide us. I walked into the [mathematics] lab and there was always someone there who was willing to help me." Sue went to the mathematics lab because "there wasn't an appointment requirement" and she could go "whenever it fit her schedule." Amelia shared that she made the choice to go to the mathematics lab as often as she did because "she walked in very unsure and always left feeling confident about [mathematics]."

The participants shared with me that they often struggled to find a balance between home priorities and school priorities. While the time they spent in the mathematics lab took away from their free time, two of the participants decided they would rather spend some extra time on campus to get their work completed so they could focus on their home priorities once they left the college. Sue stated that "the [mathematics] lab helped to save time at home from doing so much homework alone" and Moon said she "tried to separate home life and school work as much as possible and going to the [mathematics] lab allowed that to happen."

Spending time in the mathematics lab was fruitful due to the environment of the lab itself. Tina described the mathematics lab as "a working environment. It was never really quiet, but it also wasn't really loud. It was a fun place to be but also was [a place] where we could get a lot of

work done with some help." Kate said the mathematics lab was "really relaxed and laid back" and she liked spending time in this setting. Marie told me the mathematics lab had a "warm and welcoming feeling with no pressure." Sue ended our discussion about the mathematics lab by stating, "The [mathematics] lab helped me pass MATH 080. I couldn't have passed without the extra help."

James shared that he loved going to the mathematics lab because he could work one-on-one with the tutors and this made him feel "confident in getting the work done." Ruby told me she believed the "tutors were important helpers." Carrie noted that she could tell that the tutors "want you to succeed and finish the class. They were helpful with anything we brought for help." Kate raved about how "friendly, encouraging, supportive and helpful" the tutors she worked with were. "Anytime I walked in with a huge problem and thought I couldn't ever figure it out, the tutors broke the problem down for me and showed me the steps in a way that made me understand." She went on to tell me that she went to the mathematics lab on days when she felt "confused and overwhelmed with the [mathematics] stuff from class" and said she often felt "stupid and like an idiot." With tears in her eyes, she told me she was extremely grateful to the tutors she worked with during the spring 2015 semester because they never once made her feel inferior or "like an idiot for being so lost."

In addition to on-campus mathematics labs, students took advantage of online tutoring offered by the institution. Three of the 15 participants made specific mention of online tutoring as an institutional support they took advantage of during their time in MATH 080. The online tutoring service allows students to connect with a live tutor on demand 24 hours a day, seven days a week. The online tutoring sessions include an option for students to engage with the tutor using the virtual whiteboard or a chat box feature. Carrie learned of the online tutoring service

during her first few weeks in MATH 080 and knew it would be helpful to her. Her voice shook as she told me she liked the online tutoring option because "it helps me at night when I can't get up because of my lupus." Carrie paused for a second to wipe her tears and clear her throat and then began to speak again, saying, "It makes it so I don't have to get up and drive to school for help. I can get help from home at any time while I put my legs up to try and feel better and not fall behind in the class." Kate said she also learned about the online tutoring option early in the spring 2015 semester when she was enrolled in mathematics and began "using it right away and often." It was obvious how much Steph used and loved the online tutoring service. She excitedly shared that she believed "online tutoring is the best thing ever." "You could log on to the services through [our learning management system] directly and there was always someone available to help," she told me. When I asked Steph why she continued using the service throughout the semester, she responded by telling me "the tutors walked through examples with their own examples, which was helpful and allowed for questions along the way."

The participants in the study took advantage of various institutional supports available to them to help them progress in their developmental mathematics class and earn a passing grade. The participants indicated that the institutional practices were aligned with their desire to be successful and complete their program of study. A key characteristic of institutional supports was their flexible capacity to address student needs. These included providing on-campus study space that created a third option between class time, home time, and tutoring.

Finding 3: The co-requisite class format supported successful completion of mathematics coursework.

As described in chapter one, the co-requisite model of mathematics instruction is one way to format developmental education in the community college. The co-requisite model is not only

a unique way of formatting developmental mathematics education, it is also a newer model for this institution. Seven of the 15 participants spoke about the co-requisite model format and how it contributed to their success in developmental mathematics.

Commander, Stratton, Callahan, and Smith (1996) found that participating in paired courses using structures similar to the co-requisite model improved student performance and resulted in higher levels of reported student satisfaction. While the co-requisite model of mathematical instruction is a newer model at this institution, it has been used successfully at other institutions. Mireles et al. (2014) found that students enrolled in co-requisite courses were significantly less likely to withdraw from their college-level mathematics course and were significantly more likely to earn higher grades in the college-level mathematics course when compared to the baseline group (stand-alone college-level mathematics students). In this study, students identified two specific elements of the co-requisite class format model to which they attribute their success: just-in-time support and a slower pace which led to them feeling more confident in the college-level mathematics course.

The students who enroll in this co-requisite model of developmental mathematics instruction are deemed underprepared for college-level mathematics coursework and in need of remediation to sharpen their basic mathematics skills. The MATH 080 class acts as the required form of remediation for students enrolled in the co-requisite model. MATH 080 is structured to provide instruction in the mathematical and algebraic concepts students will apply in the college-level mathematics course. This just-in-time support gives students the ability to practice and refine a skill before applying it in the college-level mathematics course. Tina reported, “Before starting the college-level [mathematics] class, I had the developmental class during the same week to get my questions answered, so when I took college [mathematics] I wouldn’t be so

confused going into it." She believes the MATH 080 class "cleared up everything that was confusing in the college-level [mathematics] class and gave [her] the basic skills [she] needed to do well in the college-level class."

Kate called the MATH 080 class a "preview of what they would do in the college-level [mathematics] class." Sue agreed with Kate and added that the MATH 080 class made her "really understand [mathematics] things to apply them later in homework and the college [mathematics] class." Steph said the MATH 080 course taught her "everything" she needed to "know in order to pass college [mathematics]." Beth told me she believes the MATH 080 class taught her the "basic skills and the hard stuff in enough time to apply it to college [mathematics]." She finds mathematics to be a stressor for her. She believes the new class format "saves students from so much stress as they have an easy way to learn and practice the basic skills before the college [mathematics] class."

Participants also noted that this just-in-time support was delivered at a pace that worked well for them. Specifically, four participants attributed their success to the slower pace of instruction in MATH 080. Alex enjoyed the fact that in the developmental mathematics course students "had more time to slow things down, which is important in [mathematics]." Kate said she was able to pass the course with no trouble because it was a "much slower-paced course." Sue said she "loved" having a class to "refresh [mathematics] skills" but more importantly "enjoyed that MATH 080 went slowly."

The co-requisite model of developmental mathematics education was unique and new to the college. Although the students were unfamiliar with the model and entered without truly knowing the perceived benefits of this course sequence, the seven participants who mentioned the model found it to be helpful. They particularly found just-in-time support provided at a

slower pace to be a benefit. They enthusiastically shared why the model worked for them and considered it one of the key factors to their success.

Students enrolled in developmental education courses face barriers before even beginning their programs of study at the college. Support of any kind is essential to keeping them motivated enough to persist through their developmental education course requirements and on through actual completion. The three preceding findings identified supports that the institution and in particular, the instructor, can directly influence. The next three findings relate to factors that occur largely outside of the institution's scope. However, where the institution can directly impact these supports through such things as instructional practices and course design, those aspects of the findings are specifically discussed.

Finding 4: Familial support enabled students to focus on their coursework.

Thirteen of the participants cited familial support as a key factor to their earning a passing grade in their developmental mathematics course. The actual family members who supported them and the type of support offered them varied. Immediate family–classified in this study as spouse, parents, and children–were often mentioned as an important factor that contributed to the participants' success in MATH 080. Cheng, Ickes, and Verhofstadt (2011) sought to clarify how aspects of perceived family support affect college students' academic performance. The results of their investigation revealed that the level of perceived social support that students receive from their families was important as a major predictor of the magnitude and stability of their grade point average scores across three successive semesters. In the following paragraphs, I will describe the specific familial support the participants shared with me. While actual types of familial support noted by the participants varied, the types were divided into the following categories: hands-on support, major life decisions, sacrifice, and parents.

The first major role family members played in supporting participants was hands-on support. In this role, the family member directly assisted with academic coursework. Ruby was grateful for how "clever" her husband was in mathematics. "I was able to ask him any questions I needed help with and needed to understand more. His help was one way I got through the class." Aside from her husband's help in mathematics, Ruby noted that he also helped her with "how college goes and works in general, too." James' wife is an elementary school teacher who went to college during the time they have been married. James said his wife "always motivates" him and "since she loves English, I had an at-home paper proofreader."

Going to college is a major life decision and requires significant family support. Lyubomirsky, King, and Diener (2005) have asserted that family social support satisfies fundamental needs for acceptance, belonging, and love, which cannot be satisfied by economic security alone. Agreements were made within the participants' families to make short-term accommodations so that the participants could enroll in college. Tina giggled when she told me that she and her husband recently switched roles in the house as he had just graduated from college himself and had been in college when they were married. "It took him eight years to graduate [from] college, and as soon as he was done, I knew it was my turn to take classes and his turn to support me." When the time came for Alex to enroll in coursework, he called a "family meeting to discuss what going to college" meant for all of us. "My family was so supportive from the beginning because we made the decision together." He mentioned that his "entire family committed to my journey in college, even though they didn't directly sign up for courses." Kate wanted to go to college in order to switch careers as well but did not know if her significant other would support her new dream. "I shared my desire to switch careers with him, and he was so supportive of me and let me quit my job and get a part time job so I could focus

more time and energy on school work." Kate was a little surprised by his reaction and commitment to assisting her with her college journey because "he [had] never been to college himself but [knew] how to be supportive in other ways like when I am busy doing school work."

Like Alex, Moon wanted to make sure her spouse and children understood what her starting college meant for their family–especially the sacrifices it meant every member of the family would make. Moon said as she approached the time her college journey would actually begin, she, her spouse, and children made "realistic goals and responsibilities for them and for myself. I wanted to make sure I knew what my family would sacrifice during my journey." She continued, "My home life and the support that I get there from my entire family plays a huge part in my success. Especially through the difficult classes like MATH 080." Moon told me she often felt guilty for not being around as often as she had been before she enrolled in college:

> Some of the fun times with family were cut down because my husband was going to have to take on additional responsibilities with the kids so I could stay home and study. College is difficult and studying and doing homework is difficult, but my family also made sacrifices and they really supported me and still do. I couldn't have passed the tough classes like [mathematics] without them.

The final type of familial support identified by participants involved parental relationships–both the relationship with participants' parents as well as their own roles as parents. This type of family support is found to offer individuals a sense of security and comfort because it represents how much the participants' parents care about them and are supportive of their goals (Trusty and Lampe, 1997). Brett and Steph spoke about the support they had received from their mothers. Brett said his mom was "the greatest support system; even though she never went to college herself, she always knew how to support and motivate me. I was really

discouraged in [mathematics] and she really stepped up to support me at that time." Steph held back tears as she told me about her relationship with her mother. "My mom and I are the closest," Steph started. At this time tears started to stream down her face, but Steph continued, "I went through a drug phase and I was pregnant and was homeless and my mom offered to pay for my first semester at [the college] as long as I worked hard and promised to make good grades." By the time Steph finished this statement she was sobbing and kept apologizing for crying. Taking some deep breaths and wiping her tears away, she went on to tell me that her mother gave her "a second chance at life and success by dragging me off the streets to get me to where I am now."

One participant also identified her own role as a mother as a type of family support for her. Sue shared that while she did not have the support of her own mother at this time because she had passed away, she has been the support for her own son and his journey through college. Sue's son is currently enrolled at the college with her and she said that she supports him in college, but "he is also a huge source of support" for her. "My son has been a really huge support because he tells me I can do it when I feel weak, which I did during MATH 080." Smiling brightly, Sue ended her response by stating, "I am so lucky to have such a supportive son and be sharing this college journey with him at this time." This type of support also relates to the later discussed finding of setting an example and serving as a role model for others. Both Sue and her son served as direct supports and role models for one another.

Familial support is critical to college students' access to and persistence in higher education. Family members can serve as a helpful source of insight, a shoulder to lean on when students face a challenging class or assignment, and, more importantly, a means of encouragement and praise. A strong support system can help students find the motivation and

confidence to face the toughest challenges in college. Participants identified family support as an especially important support for their academic achievement. They shared that they needed family support because coping with academic demands is stressful enough that family supports are often welcome and helpful and facilitate their coping and positive adjustment.

While direct familial support is important, participants also identified peer relationships as a beneficial factor to their success through the developmental mathematics course. In the next finding, I will summarize the ways in which peer relationships influenced them during their time in developmental mathematics.

Finding 5: The peer relationships built in the classroom allowed participants to learn from other students with comparable achievements.

In addition to support from family, participants identified support from peers as a key factor in their success. Peer relationships as a support system often begin in the classroom. As such, this finding is related to Finding 1. Faculty clearly took steps to form informal learning communities. Nine of the 15 participants noted a relationship they had formed with a peer in the course as a contributor to their success. According to them, instructors implemented specific practices to aid in the formation of learning communities. These included seating arrangements, small group work, and class discussions. These types of direct instructional practices were identified regularly by participants in creating opportunities to form peer relationships.

The use of learning communities in developmental education courses has been found to improve the performance of students enrolled in remediation. Tinto (1997) found that underprepared students participating in remedial courses organized around the principles of learning communities had better attitudes toward learning and had higher course completion rates than students in traditional remedial courses. In later research, Tinto (1998) found that the

use of learning community models to teach remedial courses resulted in improved retention for participating students.

Brett described the class seating arrangements and told me that the students "sat at tables of four and got to know each other really well throughout the semester since the table was small and we were able to talk about everything including [mathematics] and other courses." Carrie said she knew from the first day of classes that she "would enjoy the class because of the relationships instantly built with the other classmates." When I asked her how she had bonded, she told me that they worked in "smaller groups on the first day and realized the whole class was sort of struggling in [mathematics] on the same sorts of things." Carrie said she knew they were "all in it together." Carrie's sentiment is the other major theme expressed by students about peer relationships as a support. These two factors–instructional practices leading to peer relationships and a sense of being "in it together"–melded together for most of the participants. Jenny had a similar experience to Carrie's and said that after her class had worked in small groups on the first day, she "felt comfortable to ask the others questions to see if there was another way to solve the problem."

James shared, "Each class meeting was like meeting with family members for dinner." Kate loved the relationships she formed with peers in MATH 080. She attributed her success in the course directly to her peers and stated that "all of the classmates I was with in 080 were the reasons I made it in that class. My classmates were always there for me and showed me new ways to solve the [mathematics] problems."

Marie was grateful for the relationships with her peers and noted that "all of the students in the class worked together. Some of us picked up on things a lot faster, so we were able to really help each other out." In the middle of the semester one of Marie's children became ill,

causing her to miss a few class meetings. At that time, she leaned on her classmates to "catch her up" on the lessons she had to miss. Marie referred to her classmates in MATH 080 as a "network" and shared that it was "extremely bittersweet to finish the class." While she was excited to have earned a passing grade in a rather difficult course, she told me she "really missed seeing her classmates twice a week."

The relationships the participants formed with their peers made them feel relaxed in class. Moon talked about how "the classroom environment was one where we all felt comfortable and felt like we were all in it together." She added, "In a subject where we were all kind of behind, it was important for us to feel comfortable enough to ask questions when we were lost. Having classmates who made you comfortable was good." Other participants shared Moon's sentiments. James said, "I always felt it was okay to ask questions and never felt like anything was a stupid question because my friends in class would not make fun of me." Similarly, Alexis told me she "never felt like a question was stupid or silly." Carrie shared that she believes relationships were easily formed in MATH 080 as a result of the smaller class size. She noted, "I think you develop more of a relationship with people because there aren't so many in there and you kind of help each other." Alex, who described himself as "quiet and shy," said he was actually able to form relationships "with the people in the MATH 080 class because we had such a small class."

The learning communities that formed in the co-requisite developmental mathematics class were beneficial to students and their completion of the course. The class format also fostered an environment within the classroom where students could experience another means of validation that could lead to higher persistence and academic success rates (Rendón, 1994, 2002).

Nine of the participants attributed peer relationships formed in class to their success in MATH 080. The closeness amongst peers allowed participants to feel comfortable enough to ask their questions. Peer relationships grew most often out of either a direct instructional practice such as small group work or a sense of being "in it together." This sense of being "in it together" also foreshadowed how many participants saw themselves as role models for others. The final finding tells of the participants' desires to set an example as being an important reason they realized success in MATH 080.

Finding 6: The desire to set an example for others was instrumental in students overcoming any obstacles they encountered in the co-requisite course track.

Twelve of the participants noted that their desire to set an example for someone in their lives was an important source of motivation to successfully complete developmental mathematics. They recognized that their stories of completing this difficult course could serve as an example of determination for a loved one. These included their own children and various other family members. All of the participants identified themselves as first-generation college students and discussed the difficulty of attempting college without a college-going role model in their family. The lack of a role model or example of how to navigate their way through college served as a strong motivator for why the participants wanted to set an example for others.

Setting an Example for Children

Alex noted that he is the father to four children and "wanted to set a good example for them." He shared, "I look at my kids and really want them to go to college and I hope they see me and believe they can do it." When asked if he did anything intentional to ensure there were conversations at his home about college, Alex responded, "I complete school work around them

so they are very involved in my education. I want them to see me and have a way of knowing what to expect when it's their turn."

Carrie said she "initially signed up for college to basically teach her girls to never give up on their dreams." She went on to say, "I went to school to make an example for my daughters. I always wanted to teach my kids that no matter what struggles they face, they should always work toward their dreams and make them a reality." I asked Carrie the same follow-up question I had asked Alex–whether or not she was doing anything intentional at home that her daughters would see. Carrie responded, "I make sure my daughters see me working hard and striving and I hope they will do that when they go to college."

Alexis shared that she often reflects on her childhood and remembers thinking about college at the age that her oldest son is now:

> I came to college for my oldest son. Because he is getting to that age where he will start asking questions about college and the school is already asking him about future careers and college goals and I want him to speak about what he will do and have someone to help if need be. I want to be able to help him by showing him my example, my goals, and my accomplishments.

Aside from equipping her son with examples as he prepares for his own college journey and goals, Alexis says she wants to change the image her children have about their mom and college. "I want to be able to show my children that even though I didn't go to college right away, I still achieved it and they can do it, too…preferably, without all the obstacles I faced."

Sue's story of motivating her son to go to college was inspirational. Sue wanted her son to go to college so badly that she "enrolled herself to set the example of going to college for him." Moon said she was "committed to not letting [my] kids feel the way I felt going to

college–all alone with no help or guidance." She ended by saying that she is "determined to make a better support system for my own children because I know what it feels like to not have one."

Marie shared that her cousin was her only point of reference of what college was like and even that example came later in her life. Marie has a 12- and a 9-year-old who "watch everything" she does. "My children see me doing homework and they ask lots of questions and I hope my responses stay in their minds as they make their way through college," said Marie. "I want to pave the way for my own kids," she shared excitedly.

Setting an Example for Siblings and Other Family Members

Jenny's desire to serve as a role model not just for her own children but for other family members demonstrates a common sentiment among many participants. Jenny spoke about her son. "I really want to set the example for my son and also for anyone else in my family and show them that even though a lot of them are doing great–they could be doing better." Brett and Amelia spoke about their desires to set an example for their siblings. Brett has two sisters that are much younger than he is and knows they are "always looking up to me." Brett's brother is a few years older than he is and "not on the right track, so I am hoping he will see me and want to change his life and go to college, too." Amelia's younger brother just started college and "is having a hard time with tough classes." Amelia does not want her brother to "quit or give up," so she is "making sure to help him since no one really helped [her]."

Beth spoke about setting an example for her younger cousins. She said that she was motivated to "be the example for the family." She stated, "I am first-generation and the one my younger cousins are looking up to for an example of how college works and what to do. It is rewarding knowing that I am their example and it pushes me to succeed."

The desire to set an example and serve as a role model for children, siblings, and other family members was a deeply important motivator in pushing participants to complete their assigned developmental mathematics course. The participants knew that completing developmental education courses would not be easy and would require a great deal of determination on their part. In their minds, however, the sacrifices were well worth it because they were showing children, siblings, friends, and other family members the value of an education. Undeniably, most of the motivation and the deep desire to set an example for others came from them lacking models and wanting their relatives to have a different experience.

The participants shared details about the people in their lives they would like to set an example for. It was interesting that the participants often mentioned that their desires to set an example were fueled by the lack of an example in their own lives. I learned from the 12 participants who wanted to set examples for loved ones that the difficult parts of their college journeys–such as the time they spent in developmental mathematics–fueled their desire to set an example for others and contributed to their motivation to succeed.

Additional Findings

While most of the responses from the 15 participants were positive, there were some criticisms discussed during our time together. My study was designed to collect individual stories from the participants about their time in the mathematics co-requisite model at the college. It is important that as I share the key factors to which they attribute their success in those courses I also share the factors they named that they believed detracted from their potential success. I used the same thematic analysis techniques to identify both the factors to which they attributed their success and the factors participants claimed created barriers to their success.

Textbook. Students enrolled in both MATH 080 and MATH 123 need to purchase only one textbook. At the time in which the participants in this study completed MATH 080 and MATH 123, there was a custom textbook selected for use in these courses. I did not directly ask students what they thought about their course textbook, but three participants brought it up anyway. Alexis told me that even though she thought the textbook was "a good start" and "reference," it did not have "enough examples." Ruby liked the textbook overall and has referenced it a few times in her other mathematics courses, but at the time she did not find the book to be "an accurate fit for what they were learning in class." I asked Ruby if she could give me any specific examples of why she did not find the book to be an accurate fit, and she shared that "it seemed like the harder concepts had fewer examples, while the easier concepts had a lot of examples. It should be the opposite." Steph echoed the sentiments of both Ruby and Alexis regarding the lack of examples in the textbook, but she also noted that those that were in the textbook were "helpful, as they did walk through all of the steps but there just weren't enough of them." Steph also noted that the "book also did not give all of the formulas needed to make it through the course."

Unfamiliarity with the co-requisite model. As mentioned earlier, the co-requisite model of mathematics instruction was new to the college. For this reason, students who enrolled in the courses during the spring of 2015 were some of the first to complete the course sequence. There were some students in the college who had taken the two courses together, as well as a few faculty members who had taught the courses in this fashion. In addition, college advisors knew to enroll students in both courses simultaneously but could offer little guidance as to what the students would encounter once the classes began.

Four participants noted they did not know what the co-requisite model was and that this created a barrier they had to overcome. Amelia started her college journey at an advisor's office on campus where she set up her placement test and the preliminary paperwork to get registered for coursework. When Amelia shared with me that she initially wondered why she had two mathematics courses on her schedule in the same semester, I asked her if anyone had clarified what the purpose of the two courses was. She responded:

> No one told me why there were two courses on my schedule. It was really weird because the MATH 080 class was three hours a week, but we didn't get college credit. I didn't understand the format of the class. I wasn't sure if my advisor was supposed to tell me about the extra class in my schedule but they didn't. I had no idea what to expect.

Moon was also unfamiliar with the format of the co-requisite model. She shared that she was so confused about having two mathematics courses on her schedule during the same semester that she almost dropped one of them.

> I had no idea what it was and even thought to get rid of it on my schedule. I was so frustrated that I had to actually take two [mathematics] classes in the same semester that I almost didn't even want to show up to the MATH 080. I am so glad that I did show up, but I am so frustrated even now that no one even told me what to expect until I was in the class on the first day.

Carrie was straightforward about what she thought about the two mathematics courses in one semester. "When I first signed up I did not want to take two [mathematics] classes and my initial thinking was, 'Are you kidding me? I don't want to even take one class–why do I have to take two?'" Kate made a good point about the reality of students not knowing what the purpose of the co-requisite model is. "I think there are probably some students who walk in to their

advisor, see they have to take two [mathematics] classes in the same semester and never come back. I wonder if students would stick around if they understood the format."

Overall, the majority of the participants responded in a positive manner about the co-requisite model and their experiences while enrolled in the courses. There were two areas of improvement they suggested for the administrators at the college to make the already good program even better. The participants recommend adding more examples to the custom course text as well as making sure students who enroll in the developmental mathematics course sequence are well aware of what the purpose of the two course enrollments is. (This is a general paragraph. I think it would make more sense to have it at the beginning of the section where you talk about negatives. It seems to make a better introduction than conculsion)

Contrapuntal Voice. The third step of the Voice-Centered Relational method of data analysis calls for at least two additional listenings to identify the contrapuntal or multiple voices. Gilligan et al. (2003) explained that the "need for a series of listenings arises from the assumption that the psyche, like voice, is contrapuntal (not monotonic) so that simultaneous voices are co-occurring" (p. 159). During this step of data analysis, I reread and listened to each of the participants' interviews at least once to attune my ear to particular aspects of voices that I believed I heard. I then determined which voice occurred most frequently. Two voices arose, so I repeated this process to further identify them. Those voices were self-doubt and self-confidence.

Voice of Self-Doubt. The first voice I heard through the interview transcripts was a voice of fear leading to self-doubt. This voice is a disempowered voice, a voice that discounts itself, and the self's unique experiences and knowledge. Some of the participants connected self-doubt to their innate fear of mathematics upon entering college. Their fear of mathematics led to feelings of self-doubt about college in general and about mathematics coursework specifically,

and this fear came out in their interviews. Ruby shared, "I was really nervous about starting here because I was nervous about the coursework, the instructors, the syllabus, and everything else about college–especially [mathematics]. Math is my weakness." Like Ruby, Shay told me that mathematics was not something she believed was a strength for her. "Math is very much a struggle for me. Even in high school I struggled with it. After I enrolled I was very concerned about having to take [mathematics]," she explained. Moon said she often struggled with finding the motivation to keep going when faced with a difficult class such as mathematics. "It is a really hard balance sometimes to smile while taking a hard class and go back every week feeling so lost." Kate believed that she was "terrible at [mathematics]" and said she found mathematics to be "so frightening and scary from the start." Steph told me that the lack of a role model in her life made her fearful of college and doubt her ability to do well in her courses. "With no role model, I didn't think I would make it in college," she shared.

Voice of Self-Confidence. The second voice I heard in the interview transcripts shifted from the first voice of self-doubt. This second voice one of self-confidence. This voice is intuitive and personal (Belenky et al., 1986). It tells of empowerment because participants realized they could succeed and no longer wanted to give in to the fear of failure.

Overcoming their voices of self-doubt, the participants discussed an increase in their confidence levels once they completed the developmental mathematics course. Shay stressed how beneficial taking the MATH 080 course was to her ability to tackle additional college-level mathematics. "I would have never believed I could be successful or had such a good time in any [mathematics] if I [hadn't taken] the remedial [mathematics] class," she explained. Moon, who is the participant closest to graduation, said she is "determined to graduate and not let any of the hard classes left stand in the way. MATH 080 taught me I could do anything I set my mind to."

Carrie said the life lessons about determination she learned in MATH 080 are something she will take into all of her coursework until she graduates. “I am here at the college with a goal and if I really want it, I have to commit to come, use every service the college offers me, do my best, and ask for help.” Steph discussed how the lack of a role model affected how she gauged her ability to be a successful college student. By the end of our time together she affirmed that the MATH 080 course had helped show her that if she worked hard she could be successful; she now believed that graduating with a degree was a “real possibility.” “I will definitely make it through this hard class and any others and will be the example and role model for others to see,” she offered.

Summary of Chapter

This chapter presented six findings that were uncovered during the course of this research study. Each of the findings was directly derived from the participants’ responses to interview questions. In the next chapter, these six findings will be interpreted using the lens of scholarly literature in order to present conclusions and recommendations to multiple stakeholders for developmental education at the community college-level.

Chapter 6

Conclusions and Recommendations

Overview of Chapter

The purpose of this qualitative research project was to investigate what first-generation community college students who completed the developmental mathematics co-requisite model of instruction identify as the key factors to which they attribute their success. The six findings described in the previous chapter that related specifically to this question offer important implications for viewing the experiences of this particular group of students. In Chapter 6, I will present the major conclusions suggested by the study's findings (outlined in Chapter 5). Furthermore, I will make recommendations for community colleges, students, and high school professionals. The chapter concludes with recommendations for further research and final reflections.

Conclusions

#1: Students who completed developmental mathematics education coursework found that the relationships they built with their instructors and peers in the remedial class helped them earn a passing grade.

#2: An external support system, such as that from family members, can serve as a key factor to student success through remedial coursework.

#3: The participants believed they were setting an example and serving as a role model for children, siblings, friends, and other family members. For the participants, this role was a driver that motivated them to be successful.

#4: The institutional support system enacted through the co-requisite model and specific instructional support opportunities external to the classroom that the students in developmental

education took advantage of assisted them in their ability to understand the coursework and pass the remedial-level class.

How do relationships within the college have an influence on students taking developmental coursework?

Findings suggest that the relationships students in developmental mathematics coursework built with their instructors and peers are instrumental in their earning a passing grade in their assigned remedial coursework. Often, students who enter developmental education coursework are in need of interactions and relationships that motivate them to conquer the daunting task of completing remedial coursework. Developmental education instructors have a unique opportunity to serve as mentors or role models to students enrolled in their courses.

This finding is consistent with research that has found that faculty-student relationships and interactions are integral to college students' development and achievement (Astin, 1993; Lamport, 1993; Terenzini, Pascarella, & Blimling, 1999). Such interactions have been shown to positively influence students' degree aspirations, self-efficacy and esteem, academic success, satisfaction, goal development, and adjustment to college (Arredondo, 1995; Astin, 1993; Eimers, 2000; Lamport, 1993; McGlynn, 1992; Santos & Reigadas, 2000). The reasons for such strong influences are better understood when one considers the multiple roles that faculty members can assume in relation to their students. Not only can the instructors be responsible for communicating course content and learning, they can also be role models, employers, advisors, and sources of support and guidance. Through engagement with faculty members in these capacities, students can develop a deeper appreciation for the subject material, be exposed to new opportunities for learning, and receive helpful encouragement toward a future career (Arredondo, 1995).

Furthermore, faculty-student interaction has traditionally been understood as a type of involvement. Astin (1984) defines involvement in this case as the "quantity and quality of the physical and psychological energy that students invest in the college experience" (p. 298). He asserts that students' development and learning are dependent on how involved or invested they are in their environment. Tinto (1975) explains that involvement is necessary for integration into the college environment, and integration increases the likelihood of persevering through difficult times. The relationships students build with their instructors are beneficial, but peer relationships are also very important in ensuring that those in developmental education coursework earn a passing grade.

Researchers who study emerging adults have described a significant link between the quality of college students' peer relationships and their adjustment to college (Fass & Tubman, 2002; Lapsley & Edgerton, 2002). Researchers reported that increased social support over the first two semesters of college predicted improved social and personal adjustment (Friedlander, Reid, Shupak, & Cribbie, 2007). Swenson, Nordstrom, and Hiester (2008) posited that relationship quality is positively and significantly associated with adjustment among first-year college students who are in their emerging adulthood years. Fostering an opportunity for peer interaction and the formation of friendship is crucial to helping students adjust to their new environment and is a task community colleges–and in particular remedial level instructors–should commit to in an effort to help students succeed in college.

How does taking advantage of institutional supports help students enrolled in developmental education coursework earn a passing grade in the course?

The availability of student support services is particularly important for adult students from educationally or economically disadvantaged backgrounds (Karp, 2011). Students need to

know which services are available and how to access them, but many of those most in need of academic support are uncertain about how to do so (Karp, O'Gara, & Hughes, 2008). Deil-Amen and Rosenbaum (2002) noted that the student support services in many colleges assume that students have the knowledge, social skills, and motivation to access such services. This assumption may not always be valid, particularly for students from families and communities without college-going experience.

Tutoring is a popular support that has been implemented by a number of colleges as a means to advance developmental education students' achievement (Brock, Moore, & Parks, 2007). Like many other student support practices, tutoring can take diverse forms. Tutoring can be offered by faculty, staff, student peers, or through computer-assisted instruction with tutorial software packages. Students may receive individualized assistance or may work in small groups with a tutor outside the classroom. On college campuses, tutoring may be available in a stand-alone center or in learning assistance centers that provide a number of other supports for students' learning (Perin, 2005).

Tutoring is an as-needed support extended to the classroom that allows students to obtain additional help when they are struggling in coursework. Even when students are placed at the appropriate level, they need to be persistent in order to conquer their developmental education coursework. Perseverance is the ability to continue despite obstacles and is essential for students at the remedial level. Students are often faced with time constraints as they juggle many responsibilities including taking care of dependents, employment, and coursework. Time constraints often call for students to decide how best to prioritize any free time they have. Thus, they may find themselves coming to class and completing homework or assignments when they are tired or cramming in time to visit a professor or the tutoring center for extra help. Students

enrolled in developmental mathematics may find tutoring services helpful to make sure they are comfortable with the material taught and are retaining the content in order to build upon it in further mathematics coursework.

Recommendations for Programming

For Community Colleges. Professional development programs at community colleges often are the means by which instructors learn how to deliver content. Classes, seminars, and workshops offered at community colleges frequently focus on instructional practices and pedagogy. There should be a specific focus in professional development programs for teaching students in developmental education. Students enrolled in developmental education have unique needs as they have entered college underprepared. Faculty members teaching remedial level courses need to be educated on how best to support the students in the courses they teach.

For Instructors of Developmental Education. Instructors of developmental education courses are sometimes the first individuals a student meets on the college campus. It is important that remedial level instructors take that role seriously. The experience students in developmental education have with their instructors may be an important step in building their confidence.

Students in developmental education may need more support from their instructors as they are navigating their way through remedial coursework. Due to this reality, instructors should make themselves available to their students and make them feel as comfortable as possible should students ask for additional assistance or clarification. Instructors should work to make students believe they want them to be successful in the course and persist to reach their academic and career goals.

Aside from building a comfortable relationship with their instructors, students in developmental education can greatly benefit from relationships with their peers. The

relationships students form with their peers can impact their college experiences both personally, socially, and academically. Instructors can help to create environments where peer relationships are formed by embedding group projects and activities in the classroom.

In addition to creating a classroom environment where students can form peer relationships, instructors can also implement strategies in the classroom that allow students to identify what they perceive will make them successful in the course. The study findings show that students' desire to set an example was one key factor to which they attribute their success in developmental mathematics. If students have the opportunity to reflect upon and acknowledge why they want to be successful and what they need in order to be successful, they can start their journey with a strong foundation. In addition to identifying their needs, students will feel a sense of ownership for being successful and persisting to meet their goals.

For Students in Developmental Education. According to the study findings, students attributed success in remedial level mathematics coursework to institutional supports such as tutoring centers and mathematics labs. These support services can be helpful to students as they offer help outside the classroom to the students, often on an individual basis or in a small-group setting. Colleges should actively promote their available support services as should instructors in class.

For Educators Working in High Schools. High school professionals also have the opportunity to give their graduating students advice for succeeding in college. As students embark on the new college journey, they might find that advice from someone who has gone through the college experience can be helpful. The opportunity for professionals at high schools to offer advice is especially helpful for students who will not have access to first-hand advice about college from family members. High school counselors, teachers, and administrators can

positively affect students' postsecondary aspirations and attainment by providing the students with knowledge of what they will encounter when they leave high school and enter college. All students considering college after high school graduation can benefit from early encouragement and support methods implemented at their high schools, but this is especially true for first-generation students and students who will enter college underprepared for college-level coursework.

Recommendations for Further Research

Further research is needed in the area of developmental education. In light of the limitations of this study, I recommend that further research be done in the future:

1. Due to the fact that the institutions offer different types of supports for their students, a similar study at a different institution can shed light on other institutional supports students who successfully completed developmental mathematics took advantage of during the time of their enrollment and name as key factors to their success.
2. Given the reality that developmental education is not limited to the subject area of mathematics but also includes English coursework–and in some institutions reading as well–a similar study should be conducted that addresses developmental-education coursework in subject areas besides mathematics. A similar study with participants who successfully completed developmental English or reading can identify whether or not the key factors to which students who completed developmental mathematics attribute to their success are also found in other developmental-level subject areas.
3. The participants in my study all identified as first-generation community college students who noted that lacking an example of how to navigate their way through the college experience made it difficult for them to consider completing college an actual

possibility for them. I recommend similiar research studies be conducted on students who do not identify as first-generation college students and who state that they have a role model who helps them navigate their way through higher education. A study of this nature would show a difference in needs of students who identify themselves as first-generation and those who do not.

4. One of the limitations of this study was that all 15 of the participants were students who had earned a passing grade in the developmental mathematics course. Due to the fact that the participants all earned a passing grade, most of the experiences and thoughts they shared with me about the course were positive. Additionally, there is no way to know what truly contributed to their success and whether they would have been unsuccessful minus some or all of the supports they noted in their interviews. A future study that gathers the experiences of students who did not earn a passing grade or those students who earned a passing grade without completing developmental mathematics under the co-requisite model would help to identify the reasons why some students who enroll in developmental mathematics courses are not successful. Along similar lines, a study involving students who earned a passing grade in the developmental mathematics course but did not continue on to college-level courses would reveal other ways for institutions to support learners and increase retention.

Researcher Reflection

This study told a profound story. It is a story about a group of students who entered community college underprepared for college-level mathematics coursework and lacking a great deal of knowledge and information about successful college enrollment. The story told of their realizations that they would need to work hard to earn a passing grade in the developmental

mathematics course if they were ever going to have a good chance at earning the credential they coveted. It told the story of students who did not have a mentor, role model, or example in their immediate family who went to college and earned a credential. The participants in my study hoped to become the mentor, role model, or example for their family members and kept that goal in mind as they worked hard to clear the hurdles entering college underprepared brought them. All 15 of the participants were brave. They opened up and shared with me how difficult it was to even come to terms with the idea of enrolling in college. Some of the participants are on the verge of changing careers. Some of them have been in their careers for years and just want to do something more. Some of the participants entered college straight out of high school and quickly realized the difference between high school courses and teachers and college coursework and instructors. The pilot study I conducted in 2015 showed me that students who enter college underprepared for college-level coursework and have to enroll in non-credit bearing remedial coursework know that their success through the remedial coursework is due to some important key factors. I set out to find out more about the key factors to which these students attributed their success.

In closing, as a first-generation college student myself, I could not help but relate to the participants. Throughout our time together in interviews and my time alone reading and listening to their transcripts, I battled some intense and unexpected emotions. Like the participants, I navigated my way through higher education with no point of reference from an immediate family member. The struggles of filling out lengthy college applications, the daunting Free Application for Federal Student Aid (FAFSA) form, choosing a major of study by simply looking at a course requirement list, meeting with an advisor while hoping not to be intimidated, blindly taking a high-stakes placement test, finding the formula for balancing work and school, and so much

more of what my brave participants shared truly resonated with me. It was my sincere intention to honor the voices of each of my 15 participants in this study and share with the world just how brave they are and how determined they are to succeed. It is my hope that this study will add to the growing body of literature on developmental education in various subject areas and examine the support measures students have utilized to which that they attribute their success.

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Appendix A: Letter of Invitation

Good Afternoon,
The mathematics faculty from the [city name] campus recommended I reach out to you. My name is Stacy Atkinson and I am an Instructional Designer with [institution name] based out of the [city name] campus. I am working on the dissertation portion of my PhD with Lesley University and am hoping you would be willing to participate in my study. I am looking to conduct semi-structured interviews with 15-20 Ivy Tech students who successfully completed MATH 080/MATH 123 during the spring 2015 semester and are currently enrolled in coursework at [institution name]. [Insert survey link] It should take 5-10 minutes to complete and will ask you to give some information on the support services you used during your time in MATH 080/MATH 123. It will also allow you to input your contact information so I can contact you to schedule a time and location of your choice to meet for an interview. If you have any additional questions about the study before committing, please feel free to email me at [email address].

If you meet the selection criteria and agree to participate in the study, you will be asked to take part in the following activities:

- **Agree to complete an online survey that will take approximately 5-10 minutes to complete.**
- **Participate in one or two 30–60-minute interview(s) to discuss your perception of the key supports that contributed to your success in MATH 080/MATH 123.**
- **Allow your interview to be audio-recorded to aid in ensuring that your responses are fully captured during the interview process.**

Please note:

- **Your responses to the interview questions will be kept confidential and will not be shared with anyone, including any faculty, staff, or students at the college.**
- **As compensation for your time, I will give each participant who completes the interview a $10 Amazon gift card.**

Thank you so much for your time! I am excited to hear from you and hopefully meet with you soon.

Stacy Atkinson

Appendix B: Information Survey

1. What is your first name?
2. To protect your identity, you get to pick a fake name (pseudonym) for this study. What name would you like to use?
3. What year did you enroll at [instituion name]?
4. What is your major?
5. When did you complete MATH 080 and MATH 123?
6. What other courses did you complete during the semester you completed MATH 080 and MATH 123?
7. While you were enrolled in MATH 080 and MATH 123, which of the services below did you use? Select all that apply. [Choices varied depending on the specific campus. For example: Math Center, Academic Enrichment Center, Center for Academic Excellence, Tutoring Center, Faculty Led Round Tables]
8. While you were enrolled in MATH 080 and MATH 123, how many total visits did you make to [insert each of the support services selected in question 7]?
    a. 1-5 times per semester
    b. 6-10 times per semester
    c. 11-20 times per semester
    d. More than 20 times per semester
9. Please read the following definition: First-generation college students are those whose parents have either had no college or university experience or have enrolled but did not earn a degree.

    After reading the definition, would you consider yourself to be a first-generation college student?
10. If your responses make you eligible to participate in this study, would you be interested in scheduling an interview at the time and location of your choice?
11. [If question 10 is answered with a Yes response] Please enter the phone number and email address you would like me to use to schedule a time to meet.

Appendix C: Institutional Placement Test Score Ranges

WRITING	CUSTOM ACCUPLACER	ACCUPLACER	COMPASS	ASSET	*ACT	*SAT	*PSAT	HIGH SCHOOL GPA
ENGL 093/073	WritePlacer 2 - 3	60-79 Sentence Skills	32-69 WRIT	37-41 WRIT	NA	NA	NA	NA
ENGL 111	WritePlacer 4- 8 and Reading Diagnostic 69-120	80+ Sentence Skills	70+ WRIT	42+ WRIT	17 English	460 Writing	46 Writing Skills	**HS GPA 2.6 within last 4 years
READING								
ENGL 083/063	Diagnostic 25 - 68	55-75 Reading	49-79 READ	32-41 READ	NA	NA	NA	NA
Program Ready	Diagnostic 69 - 120	76+ Reading	80+ READ	42+ READ	18 Reading	460 Reading	46 Critical Reading	**HS GPA 2.6 within last 4 years
ENGL 095/075	WritePlacer 2-3 and Reading Diagnostic 25-68	60-79 Sentence Skills and 55+Reading	32-69 WRIT 49-79 READ	37-41 WRIT 32-41 READ	NA	NA	NA	NA
FOUNDATIONS 070/071	WritePlacer 2-3 and/or Reading Diagnostic	60-79 Sentence Skills	32-69 WRIT	37-41 WRIT	NA	NA	NA	NA
	25-68 and/or	55-75 Reading	49-79 READ	32-41 READ	NA	NA	NA	NA
	Math Strands 1, 2 ≥ 5	30-59 Arithmetic	25-54 PALG	32-41 NUM	NA	NA	NA	NA
MATHEMATICS								
MATH 080	ELEM ALG 34-44 or Strands 1, 2, & 3 ≥ 7	30-59 ARITH	25-54 PALG	32-41 NUM	NA	NA	NA	NA
MATH 023	ELEM ALG 34-69 or Strands 1, 2, 3 ≥ 13 & 4 ≥5	60-120 ARITH	24-34 ALGE or 15-23 ALGE and 55+ PALG	34-40 EALG or 33-37 IALG	NA	NA	NA	NA
MATH 122	ELEM ALG 34-69 or Strands 1, 2, 3 ≥ 13 & 4 ≥5	40-52 ELEM ALG	35-51 ALGE	41-45 EALG or 38-42 IALG	18 Math	460 Math	46 Mathematics	**HS GPA 2.6 within last 4 years
MATH 123	ELEM ALG 45 - 69 or Strands 5, 6, 7 ≥ 9 & 8 ≥ 6	40-52 ELEM ALG	35-51 ALGE	41-45 EALG or 38-42 IALG	18 Math	460 Math	46 Mathematics	**HS GPA 2.6 within last 4 years
MATH 100	ELEM ALG 70 - 91 or Strands 5, 6, 7 ≥ 9 & 8 ≥ 6	NA	NA	NA	20	480	48	NA
121/127/128 129/141	ELEM ALG 70 - 91 or Strands 5, 6, 7 ≥ 9 & 8 ≥ 6	74-120 ELEM ALG	66+ ALGE					NA
MATH 135/136 137	ELEM ALG 92 - 120 or Strands 9, 10, & 11 ≥ 9	74-120 ELEM ALG	or 45 CALG	0- 49+ EALG or 48+ IALG	24 Math	520 Math	52 Mathematics	NA
MATH 200/201	CLM 61 - 120	86-120 CLM	or 0-45 TRIG	CALG 36+	NA	NA	NA	NA
MATH 211/213 218/221	CLM 61 - 120	86-120 CLM	46+ CALG and 46+ TRIG	NA	NA	NA	NA	NA

*SAT, PSAT, COMPASS, ASSET, and ACT scores are accepted for four years after test was taken.

**Honors/Core 40 Diploma ONLY

Revised 10-20-2014

Appendix D: Interview Protocol

1. Tell me a bit about your college journey so far.
2. Tell me about the support and help you have received so far in college.
    a. How did the developmental mathematics course you took help or support you? How did it not?
    b. Please say more about the teaching methods your instructors used to help you succeed in developmental education courses.
    c. Talk about relationships (inside or outside of the college) that helped you succeed during college.
3. What advice could you give fellow students who enrolled in college having to enroll in developmental education courses? Administrators? Instructors?
4. I see you noted in your information survey that you attended (NAME SERVICE), talk to me about how attending this service helped you.
5. You noted that you consider yourself a first-generation college student; talk about how that affected your college experience.

Appendix E: Consent Form

My name is Stacy Atkinson. I am a doctoral student at Lesley University under the direction and advisement of Dr. Nancy Wolf. I am conducting a study to examine key factors identified by students as having contributed to their success in community college developmental mathematics education.

If you agree to participate in the study, you will consent to my obtaining your placement test scores and also be asked to take part in the following activities:

- Agree to be contacted by email with a link to fill out an online survey that will take approximately 10 minutes to complete.
- Participate in one or two 30–60-minute interview(s) to discuss your perception of the key supports that contributed to your success in developmental mathematics education courses.
- Allow your interview to be audio-recorded to aid in ensuring that your responses are fully captured during the interview process.

This study poses no foreseeable risk to you. At any point during the interview survey, you have the right to choose not to answer a question or to end the interview. Your responses to the interview questions will be kept confidential. All research records obtained from this study will be kept confidential. All data collected will be stored in a locked filing cabinet in my home and on my personal, password-protected computer. I am the only one who will have access to it. I will keep the study records indefinitely. The results from the study may be published; however, your name and identity will never be associated with the responses.

Your participation in this study is voluntary, and you have the right to withdraw from all or part of the study at any time you deem appropriate. There will be no penalty for withdrawal. I have no conflict of interest in this study nor will I receive any financial gain. As compensation for your time, I will give each participant who completes the survey and interview a $10 Amazon gift card.

If you have any additional questions, please feel free to contact Stacy Atkinson at satkins4@lesley.edu. You may also contact Dr. Nancy Wolf, senior advisor at nwolf@lesley.edu

Thank you,
Stacy Atkinson

I have carefully read and/or I have had this form explained to me. By signing below, I agree that I am at least 18 years of age and agree to participate in this study. I understand that I will receive a $10 Amazon Gift Card for my participation in this study and that I may choose to withdraw from the study without returning this compensation for my time.

Printed Name: _____

Signature: _____ Date: _____

Appendix F: I-Poems

Steph's I-Poem

I graduated high school in 2008
I came to the college afterwards
I was the typical 19-year-old
I was partying
I was hanging out
I kinda failed out of classes
I went into the real world
I needed something
I needed a college degree
I came back about a year and a half ago
I have been on the Dean's list every semester since
I brag about that all the time to anyone that'll listen

I always talked about getting a degree
I worked out in the real world
I needed a degree
I couldn't figure out in what
I needed something so my degree is going to be in business
I know this degree is going to take me somewhere

I was in five classes at that time
I have been taking full loads to get it done and over with
I graduate in spring of 2016

I often reach out to my professors
I feel like it's needed
I reach out to them so they know who I am
I want them to know about my troubles
I know the LRC is available
I have never actually used it other than for [mathematics]
I also schedule meetings with my teachers
I really struggled with [mathematics] and needed someone to help
I couldn't just read the stuff after class
I wouldn't know any of it
I wouldn't be able to do my homework on my own

I wanted to meet them to go over coursework
I needed the one-on-one help
I wanted to understand the material better

I emailed for simple questions

I can’t keep office hours straight
I also sometimes have classes during office hours
I need to have a separate time with them
I would schedule that by email
I use email because I can put all my questions in one email
I have never waited long for a response
I get my answers quickly
I like it

I had an awesome professor
I reached out to him quite often
I wanted to understand the material
I wanted clarification on when assignments were due
I had some real trouble with material
I didn’t want to end up getting really lost

I did use tutoring
I like the one-on-one feeling
I felt really supported
I got all the help there
I made friends with the tutors
I also used online tutoring
I was able to log in whenever
I liked that there was always someone available
I was able to walk through examples with the tutors
I felt they were so patient with me
I liked the whiteboard feature
I loved it
I liked to work slowly on an actual problem
I would say I logged in at least once per day
I definitely knew what was going on

I wasn’t as upset as the other students were
I knew my [mathematics] skills were not good
I needed all the help available
I didn’t do terrible on the placement test
I had been out of school for some time
I thought MATH 080 would be slower
I can pass [mathematics] and move on
I hadn’t been to a [mathematics] class in 7 years
I thought 080 would help me
I believe it really did

I felt he was very personable with us
I tried really hard to make sure he knew who I was

I never rushed through my questions
I felt like he would work through things with us
I liked that he didn't teach to the book
I think it helped us not get lost or frustrated
I liked his random examples
I really needed as much as was available

I introduced myself personally to peers on the first day
I knew this would be valuable
I liked my classmates
I had other classes with the same group
I talked to them about many things
I liked bouncing ideas off of them
I thought there were many ways to do the same thing

I am really close to my family
I am so close to my mom
I went through a drug phase
I was pregnant
I was homeless
I needed her help
I moved back in with her
I had to do something for myself
I decided to go back to college
I am a different person now
I was a troublesome child
I am so excited to be on the Dean's list
I love making my mom proud
I am always striving for that for her

I would tell them to just face the course
I would tell them not to focus on being upset
I had that mindset and it worked
I kept telling myself this will help me
I needed this class
I wasn't very good in [mathematics] in high school
I needed this course to get better
I am not the only one in the class
I shouldn't be embarrassed
I wasn't embarrassed
I went in with the mentality that it would help me
I just wanted to get through it

I am not scared of [mathematics] anymore
I remember the basics from this class

I would say to give lots of examples
I would tell them to consider the skills the students have that put them in the course

I didn't think about being first-generation at first
I started college
I thought about it all the time
I needed to do better than my parents
I was too smart not to go to school
I saw my sister going to college
I never really asked questions
I didn't have anyone who talked about it at home
I don't even remember
I felt like no one cared if college happened
I asked her recently
I felt the same way she did the first time around
I didn't really know what to do
I had no idea where to start
I had no one to really talk to
I was completely overwhelmed
I didn't know what I wanted my major to be
I didn't want to keep working 10-dollar-an-hour jobs, though
I wanted to live on my own again
I needed to do better
I needed to have a higher paying job
I had to figure out how to get enrolled
I feel like none of that matters now
I am disappointed it took so long

Brett's I-Poem

I am taking classes in Criminal Justice
I got English and [mathematics] out of the way
I am now on to the fun stuff
I want to be a correction[al] officer
I am in my third semester here

I like this campus because it's small
I feel like the teachers are there for you when you need help
I have also used the [mathematics] center and writing center for help

I got so much help with my questions in that class
I would ask the teacher and get everything answered
I would ask her to go over everything
I wasn't lost when class was over

I liked that she put the problems on the board to see
I would even stay after class and work some of the problems on the board
I liked that she made her own examples
I also liked her worksheets for practice
I think they were very useful

I liked it because we were able to go back and do more problems
I always had enough examples to practice

I sat at a table with three other people
I made friends with them
I talked to them about life and outside of college things
I keep in touch with them still
I see them around the college still

I would make sure to show up every day
I would listen and take notes and ask questions
I needed help on homework
I couldn't get help during office hours
I would go there for the extra help
I went about once a week
I didn't know how to use Excel
I used to be there for about an hour
I got all my questions answered

I sent an email to the instructor
I wanted to meet with them after class
I had a specific question

I needed a quick answer
I needed it to move on
I needed the help to pass the class

I think the co-req is working
I did not like taking [mathematics] without co-req
I didn't pass that way of doing things
I had a much better time with the co-req

I would make sure they succeed by going over stuff really well
I would give a lot of examples
I would always answer their questions
I would make sure to quickly reply to their emails

I like that the classes are smaller
I liked that the teacher could spend more time with us
I needed the one-on-one time
I liked working in small groups with my friends
I knew the basic stuff real well for the next [mathematics] class

I am taking the English co-req now
I think it is really helping me in the same way
I have a good instructor again
I do love it
I love having the teacher available for help
I like knowing what we will be doing in the college class

I don't know, maybe my mom
I am motivated by her because she didn't go to college
I have sisters who are much younger
I also have a brother who is not on the right track
I was the only one in my family to try to go to college
I think it was really hard being the first
I had to break the cycle
I have a ton of pressure on me
I have to do good or else
I am the one that everyone is looking up to

Carrie's I-Poem

I have had an overwhelming journey so far
I signed up for college
I wanted to teach my girls to never give up on their dreams
I have lupus
I am now going to finish my degree in accounting
I know it'll take me longer than most
I have to do what my body lets me
I still want it
I am constantly in pain
I also have rheumatoid arthritis
I have fibromyalgia
I also have a dream of graduating, though
I have these little kids looking up to me
I have joint custody with their dad
I wouldn't be able to take many classes
I am able to go to class and get studying done
I went to college for them
I want to be a role model for them

I am so glad I picked this college
I have struggled in most of my classes
I have a lot of help here
I sometimes can't get up and to campus
I have the online tutoring option
I love that thing
I can access it from anywhere
I can do it while my legs are up
I don't fall behind
I had to write papers
I even used the writing center

I have had some good professors
I think it is really great here

I wouldn't have passed any [mathematics] without 080 first
I would have gotten a big fat F
I took the developmental education class
I had the extra help
I wouldn't have passed if it wasn't so small
I liked the small class size
I would recommend it to all students
I think they'd feel better about it once they start
I wouldn't have made it in college level [mathematics] without the 080

I liked the small class
I liked the people in my class
I think you develop more of a relationship with people when there aren't so many
I like working in smaller groups
I heard people explain problems in different ways
I think that was really helpful
I know I learn differently
I didn't think of it like that
I thought that was beneficial

I would have to say my faith helps
I hang out with my church
I feel balanced around them
I would be lost without my faith

I went to the [mathematics] center
I would spend time doing homework there
I felt like the only one confused
I made friends with the tutors
I loved how they made me feel
I never felt stupid
I felt like I could actually pass
I did pass
I needed their help
I needed them to spend time one-on-one with me
I appreciated how patient they were with me
I did the faculty round table
I think this helped because it was a small group
I knew everyone in my group
I felt comfortable with them

I hope they don't look at the course like a waste of time
I would tell them to keep an open mind
I believe in the end it will help
I even got help in my writing
I thought it would be a waste
I was taking so many classes
I didn't want to add another
I am glad I gave it a chance

I would recommend the smaller class sizes
I can't say enough about that
I was able to make friends
I still talk to them

I didn’t know why
I know there was no credit
I didn’t know why though

I was raised by grandparents
I had no one close to me that went to college
I was sad about that
I am still sad about that
I know my parents had to get jobs
I know my grandparents were busy with me
I wish someone could tell me something
I wish I knew where to go
I would have done it
I wanted to go to college
I just didn’t know how
I didn’t have a clue where to start
I didn’t know who I could talk to
I should have asked
I was scared
I didn’t know what they would ask
I didn’t know what I would need
I guess when I look back now I could have asked
I never thought it was possible for me
I guess my parents were kind of ignorant
I knew they made it without college
I didn’t see the benefit
I just wanted to make it, too

Ruby's I-Poem

I want to start off by saying
I am not from the United States
I am from India
I always wanted to study further
I could not do that back in India
I thought about college
I want to do
I was really nervous
I was nervous about the coursework
I found it easier
I was happy the first time
I came to the college
I decided to come to [college] because they were ready to help
I love the instructors here
I always hear the truth from them

I decided on doing medical assisting
I have gone back and forth for several years
I had to do this finally
I can better understand the field
I could get a good job after college

I have another three semesters
I took it slow
I have a family
I have kids
I really wanted to do well

I met with my advisor
I enrolled in classes
I took the placement test first

I came to class and knew it was different
I was older than the others
I wanted to make friends
I was scared to approach them
I was lucky that they approached me
I am so grateful for the friendships I made in the class

I really noticed how friendly the MATH 080 instructor was
I felt so good
I knew I wasn't in India anymore
I didn't get that type of support there

I needed to for the assignments
I formed good relationships with the instructor
I am very weak in [mathematics]
I did not want to do anything with [mathematics]
I wanted to pick a major that would never make me take [mathematics]
I was very scared
I learned every single major needs some kind of [mathematics]
I said let me just put my brains into this
I got to meet people who were scared like me
I built my skills for all of my other classes that have [mathematics] in them
I understand better

I didn't have any experience with projects
I liked being able to spend a long amount of time on them
I learned how to pace myself in this class
I practiced life skills
I will have forever

I always felt good to keep a relationship with the instructor
I feel that's the way you help students feel that what they are teaching is important
I want them to try their best
I wanted them to feel like I was really listening
I was really paying attention
I was really learning
I understand things I didn't before

I am lucky
I have an at-home person to help me
I looked to him for help since he is clever in [mathematics]
I think one way for me to get through [mathematics] was my husband

I would go to the center
I would not understand what happened in class
I appreciated that they were there to help and guide us
I needed to submit assignments
I was sometimes stuck
I didn't want to fall behind
I could try to get help from my teacher
I know she was busy with other students
I want to know
I get things figured out in [mathematics]

I sent email basically because he used to work Excel in class
I wouldn't always catch the concepts right away
I needed additional support

I always got help from him
I really took this opportunity to learn Excel for other classes
I will use in my other classes
I wanted to make sure
I would send emails to the instructor for coding
I wanted to do better than what they were expecting
I definitely got better grades on my projects
I feel he helped me so much

I would tell them to go ahead and get into the course
I hesitated to register for it
I think it is important
I believe it gave me confidence in [mathematics]
I was done
I didn't know even addition or multiplication
I kept thinking there was no way to pass
I am going to not graduate
I think people need to take up this to build confidence

I got that packet for a textbook
I liked it
I felt it was good instead of a book
I still have it
I use it as reference in other courses
I really like that

I never had any bad experiences with instructors
I have to have the right attitude
I want the knowledge from them
I think mostly to give lots of examples
I really liked the study guides
I think more of those would help students

I actually have parents who started college
I don't know why they didn't finish
I know they couldn't pass on any knowledge to me
I don't think they wanted to talk about their experience
I needed to do better
I can do it
I did what they liked and what they wanted me to do
I am in a place to decide for myself
I have accumulated more knowledge over the years
I have more freedom
I don't live under their roof anymore
I have my own family

I make my own decisions
I decided college was an experience worth doing
I wish it would have been earlier
I think it's harder for me now
I started so late in my life
I am finally able to do it
I finally signed up for what was interesting to me
I am really having a great time
I realize that's what they were doing, too
I just preferred to go to college
I did sign up
I am old enough to make my own choices
I know I am doing what I want to do
I am finally able to really enjoy college

Beth's I-Poem

I actually started in 2006
I wasn't really sure what I wanted to do
I wanted to go to college
I started with a gen ed major
I realized that wasn't it
I was going for only a technical certificate
I wanted an actual associate's degree
I did my externship
I stopped going to school again
I came back last year to finish
I will be done in about one semester
I took classes so long ago

I am going to transfer to get a BSN in nursing

I think mainly coming to [college] in the small campus helped me
I am a little bit introverted and shy
I liked the smaller classes
I have a lot of people that were in my class
I worked with during the term
I had some awesome professors

I was better prepared in college [mathematics]
I thought I was going to fail
I was able to really learn the basic skills
I think it did help a lot

I felt like she knew every one of our learning styles
I always had fun in her class
I loved her visuals
I had to miss a few classes
I am so glad she had videos to catch up
I am so glad she showed us different ways to answer problems
I didn't know anything before that

I made friends with one person in my class in particular
I really formed a relationship with to help each other out
I actually got kind of a relationship with him since we sat next to each other

I have a sister who is really good at [mathematics]
I asked her and understood it a whole lot better
I was able to ask her for help at any time

I would also just go every day
I had class here on campus
I would go upstairs and get on the computer and practice
I was either in the computer lab
I was also at the student success center a lot getting help

I would email her if I had any problem with questions
I was working on at home
I felt as if I was sitting in front of her
I got responses so quickly
I would say definitely attend class
I mean you know that was one thing
I noticed when people struggled it was because of that

I think there should be more classes like this
I don't know if they should be the same number of credit hours, though
I would have loved to have a co-req for my anatomy class
I feel like it would save the students so much stress
I really think it works great

I mean, if I was to teach it
I would pretty much follow what my professor did
I would give students the opportunity to ask questions
I would set up group activities
I would want them to become friends
I would do a lot of visuals and tell them to do the same
I would make myself really available to the students
I had the opportunity to get specific questions answered

I knew I needed a degree in something
I did research
I did this research without any help
I heard about college
I needed to do something
I was ever actually going to become a nurse
I knew my mom had to be a mom after high school
I knew she couldn't help me figure things out
I first started college
I picked just any major that was easy
I was very intimidated by college
I was really intimidated by nursing
I still am
I am not competitive
I am just rather here you take it
I worked hard for it

I was the first one to actually join college in my immediate family
I have an older sister
I watched her take care of my niece at such a young age
I had no help to fill it out
I will be the first generation for four-year college now, too
I remember that when things get hard
I have to do well
I think it’s rewarding and stressful at the same time

James' I-Poem

I started one year ago
I started slow
I was just taking two classes and am part-time
I have a family
I started with English
I had to take the English co-req
I have not been in school for over 20 years
I want to get a computer infrastructure degree
I don't know how long I have left
I only take two classes per semester
I will be here for a long time
I took last summer off
I wish I hadn't
I know now
I will stay enrolled

I am an English tutor for the student success center

I've encountered very positive instructors
I liked that she was relaxed, very laid back
I felt very comfortable
I wasn't nervous or anything
I thought she was helpful
I didn't have the uncomfortable feeling when I had a question
I never felt like I couldn't ask something
I never felt like a question was stupid or silly
I was in a good atmosphere
I felt like it was a nice family environment
I liked the small class size in [mathematics]
I needed the one-on-one time
I almost felt like I had a personal tutor
I never had to wait for a turn to ask a question or get help
I loved her videos
I felt like I never missed class
I had a very positive experience

I had an English instructor who is now my mentor
I met her when I took English in fall 2014
I really looked to her for help with English
I even asked about [mathematics] or college in general
I worked at the student success center
I saw her a lot
I needed help

I knew exactly who to go to
I struggled a little bit
I am married to an elementary art teacher
I had an at-home paper proofreader
I also used my older kids, too
I had them read things to make sure they understood it

I like the student success center
I like the positive reinforcement
I don't feel stupid there
I don't feel any pressure
I am not just saying that because I work there
I am saying that because they really helped me

I would usually email her for a time to meet or talk by phone
I knew she always responded to my emails quickly
I knew email was the best way to reach her
I emailed her when I was having a hard time at home
I would email her to clarify a problem
I was on the right track
I wasn't super-frustrated at home trying to figure something out alone
I was able to get help from her as well as positive reinforcement

I would tell them to stick with it
I would tell them to devote the time outside of the classroom to get help
I know that is asking a lot
I know it will help

I took my mentor's advice and my wife's since she went to college
I set specific times to meet with my instructor
I always asked questions if I was confused
I tried not to get too frustrated
I knew I would hate the class
I cannot think that way
I go to the student success center
I contact my instructors if I am having trouble
I check Blackboard all the time
I want to succeed
I have to put in the work

I personally think the course is well done

I would just be honest with the students on the first day
I knew that they were there to help answer my questions

I graduated in 1991
I didn’t know about a whole lot of specialized things in college
I don’t remember the high school pushing it
I didn’t know about applications or SATs or anything else
I didn’t know what I needed to do
It wasn’t even really mentioned
I didn’t have anyone at home either
I knew it was expensive
I didn’t know there were grants or scholarships or even loans
I didn’t know what I wanted to be
I didn’t know that everything would mean I had to go to college
I never wanted to be rich
I wanted to have our needs met and that’s all
I don’t feel bad that no one could help me
I got a job out of high school
I didn’t feel like I needed to spend time going to college
I became a stay-at-home dad for 10 years
I then worked as a custodian
I knew there had to be something more
I knew there had to be something better than that
I ended up back in school

Alexis' I-Poem

I graduated from high school in 2002
I was in the honors program
I found out I was pregnant I went down to [non-honors] diploma track
I was going to be a mom
I needed to just get it done
I still applied and went to [college]
I went in for accounting
I had a fall out with my mother
I needed to be on my own
I got my own place
I ended up withdrawing
I raised children for a long time
I enrolled back 13 years later
I did it more for my son
I assisted an accountant and realized how much I hated numbers
I know there was a reason why I didn't finish that degree
I almost got a degree in it
I was great at the job, but I hated it
I now want to be a teacher

I was borderline with my English and my [mathematics] on the placement test
I didn't put my best foot forward
I spent time at the center
I did not really do much better
I had too much going on
I just decided to take the scores
I love that I made this choice
I actually needed the class
I recommend it to everyone who is taking college-level [mathematics]
I attended every single MATH 080 class
I knew I really needed these basic skills
I knew what was coming in other [mathematics] classes
I know I better pay attention now
I didn't plan to struggle much in the college level [mathematics] classes
I really appreciated having this refresher class built in

I love her additional examples
I always felt it was ok to ask questions
I never felt like anything was a stupid question
I understand an instructor telling me to try it first now
I think it helped the whole class
I liked her examples and flexibility
I liked that I could ask her whatever I wanted

I liked seeing different ways of doing things

I went to the instructor for everything I needed help with
I felt comfortable enough to go to her
I took the college-level [mathematics]
I still went to her for help
I felt far more comfortable with asking her questions
I always communicated with her about any questions I had
I loved the videos

I had to lean on my family quite a bit
I missed pick up, soccer, dance, or movies
I was in class, studying, or doing homework
I could focus more on school

I think going to class helped me
I think with any course you make sure you go

I have four children
I was going to be just like my mother
I would never go to college
I got pregnant young like she did
I am somebody totally different
I am not her
I won't be her
I want to finish school
I am going to do it
I am not struggling
I want to beat the odds
I can finally do that
I am going to do it now
I asked why they didn't push me
I always got good grades
I still wish they would have pushed me a little bit
I think I would have been done sooner
I really want my sons to see me do it
I want that degree
I want to be able to show my children
I didn't do it right away
I still achieved it
I would prefer fewer obstacles for them

Kate's I-Poem

I started in the fall of 2014
I got a diploma in graphic design years ago
I spent 15 years working at a publishing company
I hated it
I eventually grew to hate it enough
I have a supportive significant other
I quit my job
I got a part-time job
I am now studying nutrition
I am doing all of my pre-reqs
I will be transferring to finish
I am actually meeting with them tomorrow
I will have another three years
I am done here
I am doing it

I am a hard worker
I need to get an A in every class
I don't like to waste my time
I am so terrible in that way
I make use of every advantage that is offered
I become friends with peers in my classroom
I need help
I have people to call on
I started using online tutoring this semester
I am writing at 9:30 at night
I log on
I sometimes feel guilty about how much
I use it

I liked the much slower pace
I felt like it was a preview to what we would need later
I enjoyed the extra help she gave us
I am the type of person who took the extra worksheets
I would actually do them all, too
I knew what it would mean
I would be spending more time at home doing work
I was going to really learn the concept
I stayed after class
I struggled sometimes and it helped a ton

I don't know how frequently she did them
I can't remember that

I went to a couple of them
I wanted as much help as possible
I liked that it was open concept
I could come and go as needed
I finally understood stuff

I made it because of the 080 classmates
I forgot something
I knew to ask them
I can contact them
I am completely lost
I always feel better
I form relationships with people well

I have some family members who are good at [mathematics]
I have a sister-in-law who is a [mathematics] major
I would get stuck she might help
I was around
I always just listened to her
I needed to
I have to do school work

I went there
I never went to the [Center for Academic Excellence] for specific [mathematics] help
I needed specific [mathematics] help
I went to the [mathematics] lab
I always went when we had a project due
I found it very helpful
I would always try and make sure they were available
I was picky about who helped
I think it just helped
I knew their style
I felt comfortable with them
I liked that it was quiet
I was able to get my stuff done
I didn't feel like an idiot
I was an idiot for having to be in [mathematics lab]
I never felt that way
I had a lot of questions

I did
I talked to you about her earlier

I would say they have to show up to class
I never just skipped the class

I made it out ok
I knew I was in there for a reason
I knew I needed the extra help
I hope the other students remember that
I think everyone would be ok and get a passing grade if they tried their best

I think it shouldn't be mandatory to take the 080 class
I am sure it helped me pass 123
I think there are probably some students who walk in and leave
I didn't exactly want to take the extra class
I wonder if more students would stay at the college without it

I probably would have taken it if it wasn't mandatory
I had to in order to be successful
I was scared enough of [mathematics]
I had to make sure to get help

I had such a good experience
I would love all of the instructors to be like her
I mean she was human
I felt like she wasn't a robot

I never had anyone talk to me about college
I said this is my second go at it
I have paid for it both times
I wasn't smart about it the first time around
I had enrolled and didn't think the rest through
I am back again
I didn't do something of interest
I wanted to do just anything the first time
I did what was the easiest at the time
I absolutely didn't take it seriously
I do now
I am older now
I wish I had done it right before
I wanted to make it count back then and not now
I sometimes feel like a whole bunch of time was wasted

Jenny's I-Poem

I applied in 2013
I don't like school
I didn't wanna come
I didn't
I sat out until 2014
I came and completed the [mathematics]
It's a lot of work
I am a big procrastinator
I do everything right before it's due
I think that is a terrible thing

It works for me
It's stressful

I didn't care about high school
I care more about college than high school
I am gonna get this done
I have to focus
I wanted to be a therapist
I switched to mental health counselor

I haven't had any support

I didn't always understand things
I asked her to go over things a few times
I would also meet her outside of the class
I could get together with someone in the class to work in groups
I hoped someone in the group understood
I wanted to know the easiest way to do things

I don't talk to people much
I really liked that teacher
I built a relationship with her and the other students
I felt comfortable talking to them
I felt most comfortable asking the teacher questions

I wonder if not having some relationships outside the college motivates me
I think it might help me to focus and be successful in college
I really do have a good group of family and friends that support
I can complete homework and studying and be able to come to class

I sent emails whenever I had questions
I remember specifically emailing a couple of times about some Excel work

I would request to talk to her in person if it got confusing by email
I wanted to make sure I understood what she was trying to say
I would advise them to study before they take the placement test
I think it could be fun if you work to make the class fun
I would tell them to just work hard and keep an open-mind
I listened really hard
I made note of what was causing me to struggle
I can ask for help later

I think it was a nice format
I really like that there is a class like this
I can get all of my basic [mathematics] skills stronger
I use the skills in my life

I would tell them to be patient with the students
I would say that we all have different [mathematics] skills
I liked that my teacher was patient and that she didn't teach like we were experts
I really understood the stuff

I never really thought about it
I thought about it after the survey
I want to be the first person to finish college
I really want to set the example for my own son
I want everyone in my family to see my example
I want to be the example for everyone
I am hoping they will

Amelia's I-Poem

I had actually started in 2008
I transferred to a four-year college
I just transferred back this spring
I am majoring in office administration

I like tutoring
I like the small group help before and after class
I like to talk to my classmates
I like learning from them
I also talk to the teacher
I could get my questions answered from her as well

I think that at first we were all super apprehensive about the class
I know I was super apprehensive about the class at first
I felt it was really weird
I didn't understand the format of the class
I had no idea what to expect
I wish I had known before I registered

I have always had a struggle with [mathematics]
I struggled with it even in high school
I was very concerned about taking [mathematics]
I was slightly concerned
I might fail
I would have failed without the MATH 080
I couldn't imagine passing any of the other classes without it

I needed individual attention
I like that she had no problem giving it to me
I liked all of her examples
I felt like they related to my life
I would really have the concepts down
I could remember most of what she said
I asked questions if I forgot a small step
I never felt stupid
I believed that no question was a dumb question
I found it to be really comforting
I felt so comfortable and at ease in that class

I really enjoyed having some questions answered
I wish I would have made them get me answers sooner
I spent months really confused about the class

I needed my family to talk me off the ledge
I went to anyone in my family who could motivate and encourage me
I made the choice to go to the [mathematics] lab for help
I really needed some [mathematics] test prep
I can't imagine passing any of the tests without it
I would walk in very unsure
I would walk out feeling super confident
I was one of the ones who always went
I do believe it definitely helped me

I went multiple times per week
I loved that it was an environment that was ready for [mathematics]
I liked that it was filled with people who had questions
I also liked that I formed friendships with the tutors
I felt like they were my family
I really believe they wanted to see me pass and do well on homework and stuff
I really missed the one-on-one when the class was over

I wanted to use email as a way to prep the teacher about all of my questions
I just got immediate help from my instructor by using email
I asked often about projects and homework
I kept getting a particular question wrong
I asked that she look it over
I wanted to know where I was messing up
I didn't want to do it again
I wanted to learn from my mistakes

I remember how they must feel
I would make sure they know what MATH 080 is all about
I felt like it was a mistake on my schedule
I had [mathematics] classes and didn't know why
I remember the feeling of concern
I was a bit disappointed
I first heard the news
I ever made to take the class
I would have never been successful in any [mathematics]
I hadn't taken the remedial class
I would tell them to keep an open mind
I would tell them to please give it a chance
I believe it will really help them

I definitely think the class was great
I really hated not knowing what was happening that semester
I was going to do in the class
I really should have asked

I wish they would have just told us
I would just encourage the instructors to be an additional resource to the students
I would tell them to just figure out where students are in [mathematics] skills
I hope they would make every [mathematics] class look different
I would want them to be super patient
I had a patient instructor
I really loved her for the way she treated us
I wanted things to go slowly

I definitely think that it has
I really feel like my dad is tremendously proud of me
I lived their dream
I am so happy to make them proud
I am making sure to help my younger brother
I had no help
I want him to have help
I want to be the one
I really want to be the example for him
I want to show my parents that this was also my dream

Sue's I-Poem

I started last fall
I have enjoyed all of my classes
I thought I was going to hate college
I have a 4.0 and plan to keep it

I always tell my son it's about trying your best
I want him to know it is doing everything you can to actually learn

I encouraged my son to go to college
I was tired of hearing him tell me "next semester"
I get to watch him graduate next year
I was his project
I had the tables turned on me
I told him I was too old
I enrolled anyway
I am lucky
I have had great support and experiences
I think [the college] has one of the best support systems that there is

I think taking MATH 080 went slowly and really helped
I had some problems with learning the stuff
I really understood [mathematics] things
I could apply them later
I don't think I would have passed any other [mathematics] without 080

I liked that she went over particular problems to start the class
I liked that she would break it down and put it all on the board
I appreciated that she spoke in our terms
I needed her to slow the process down and she did
I understood it
I could apply it to the other problems

I always look for familiar faces
I take classes with a lot of the same people in my major
I made friends in [mathematics] as well
I liked knowing who I worked better with
I knew who had the same style of work as me

I only went to that one a few times throughout the semester
I didn't go back because
I found the [mathematics] lab
I spent so much time there
I got everything I needed there

I needed specific help in [mathematics]
I was able to meet one-on-one with the tutors
I chose the [mathematics] lab
I heard it was really good
I needed the one-on-one
I went because you didn't need an appointment
I really liked the tutors
I liked how personable they were
I felt like we were friends
I felt comfortable asking them questions
I was able to spend time with them learning the stuff that confused me
I knew they would be there
I could actually get the help
I went about two or three times per week
I didn't understand
I would keep going
I get really frustrated
I don't understand things
I knew there were tests coming
I was going to have to know it all to pass
I loved the individual one-on-one and the flexibility
I could go whenever I wanted

I had to email about homework
I was really confused
I really needed to just have someone clarify for me
I was able to keep going
I got it settled
I didn't email him a lot
I enjoyed that she responded
I liked that she was always available
I felt comfortable asking questions

I would tell them that, yes, they'll be confused
I would tell that it is ok to be confused
I would tell them to not stay confused
I have to take MATH 080, too
I didn't understand how it worked
I would tell them to not be so mad
I would tell them it is worth it and will do you good

I would say maybe you need to explain to people more about what this is about
I would not want to just see an extra class on my schedule
I was not happy about it
I felt overwhelmed

I didn’t understand why at all
I hoped it would be explained on the first day
I wish I had known before that
I would have felt better about going

I would say you just need to think as a student
I would say to be in tune with the students
I liked that my instructor was friendly to me
I never felt dumb for having to take the class
I like how she knew we needed the extra help
I like that she was available
I knew I needed extra help from the beginning
I felt like the instructor was there for us and wanted us to learn from her expertise

I wanted to go to college right after high school
I don’t know
I was young and dumb
I had a parent that kinda let me do whatever
I regret it
I live with a regret of all the things
I could have done earlier in my life
I bet my kids would be different, too
I would have gone to college maybe my kids would have
I regret it so much

Tina's I-Poem

I started at the college last semester
I had been out of school since high school
I am currently in the program for massage therapy
I am a part-time student
I take about six credit hours per semester
I take about two classes each semester
I know that is the biggest load to take
I don't work full-time
I work almost full-time
I have children and a husband

I like the core classes
I like those classes because we go over stuff from the developmental class
I have all the basic skills from those remedial classes
I feel prepared in the core classes
I haven't gone into any specific massage therapy classes yet
I like that the college teachers let you ask questions
I like that the class made sure all the [mathematics] was fresh in my head
I had been out of school for so long
I really needed to refresh my brain
I do fairly well in the classes
I didn't really need outside sources all the time
I did fine

I think they have it set up well
I think it would not be of benefit to have the same teacher for both classes
I don't know how well
I don't think it would have worked the same way it did
I think different teachers benefited the students
I don't think everyone learns the same way

I struggled with [mathematics] even in high school
I was away from it for so long
I took the class to feel better about [mathematics]
I could take it all with me to other courses

I don't know if I just got the luck of the draw
I do know there were times she worked one problem for the whole class
I know that helped me really understand it
I know we all understood it better
I know that probably wasn't her job
I felt like she was a group tutor sometimes
I appreciated that she never moved on until we told her we were ready

I mean, it felt like a support group
I liked that she did a lot of reinforcing
I liked the worksheets to take home
I think the benefit of having the class is you know what the next [mathematics] class is going to be like
I liked having the insight of what's going to happen in the next class

I didn't have any
I mean, I have two kids
I have a husband
I have a job
I had no time to really become friends with people
I depended on my family a ton

I did get close to the instructor
I felt like we were friends
I talked to her so much during the semester

I relied on my husband like I said
I knew he would support me since he just graduated himself
I decided to go back to school after he graduated
I have a pre-teen who watched me study and do homework
I turned to them for support and motivation
I got it from them

I would email the professor
I don't know how often
I know it was a few times
I know I had a few important questions
I don't think I would have done as well in class
I always got an email response quickly
I could keep moving with my homework or assignment

I would tell them to try and soak as much in as they can
I think it helps a lot of students
I don't know what kind of way they would do without the developmental class
I am pretty sure that everyone in my class passed the 080 and any college [mathematics] later
I think they at least passed
I got a grade better than I expected
I would tell them it's an investment
I would remind them they paid for it
I believe it was worth all of the money

I think they made a smart move when they put the course out
I am not very old

I have been out of the loop of school for enough time
I kind of remember this [mathematics] process but not exactly
I needed to practice some more before taking college [mathematics]
I think they did fine in the courses

I don't have any college graduates in my family
I come from a family of business owners
I didn't want to go into my dad's family business
I wanted to do something that interested me
I didn't want to be in business
I was going to end up being a secretary
I knew that wasn't for me
I feel like you can benefit from that job
I had to be honest with myself
I was happy to help him
I didn't want to do it forever
I found college on my own when trying to help my husband
I waited eight years for my husband to graduate
I get to start going now
I get to have a degree
I get to have a chance at doing something fun
I can't wait to do massages for a living
I want it to be an example for my kids
I want them to know that when it's hard, it's because it's worth it
I am their proof

Marie's I-Poem

I have a very interesting college journey
I previously went to a private college
I transferred here
I was a little disappointed at the time
I had to start over
I need to say it's been rewarding so far
I don't learn like the 18-year-old
I have had the pleasure of working with
I don't know if it'll be different once
I get into my chosen program

I have the rest of this semester and then next semester
I will apply to the respiratory therapy program
I have been here a little over a year
I have only taken two classes at a time
I really like spacing them out

I had this big fear of [mathematics]
I attempted
I said I was deathly afraid of [mathematics]
I didn't know what resources were available
I didn't complete the course
I go into the course knowing more now
I want to graduate
I definitely needed to make sure to put it all together
I set my sights on the degree

I really enjoyed the hours of the open [mathematics] lab
I kept thinking
I won't see them anymore
I was really sad about that

I didn't know what the point of the class was
I asked in class
I also didn't know what to expect
I got in there and just hoped someone would tell me
I was there and how it was going to help
I really enjoyed the class and format
I wish I had known sooner what to expect

It worked for me so much
I think she had a motherly instinct
It's not that bad

I thought this was important
I was happy for it to be over
I really missed
I formed relationships

I have a 12-year-old and a 9-year-old
I think it was the inspiration that it gave them to see me doing homework
I had class
I think they wanted to make sure
I could get through the [mathematics]
I was really in it
I am almost 40 and going back to school

I went to the Center for Academic Excellence often
I liked that it was a quiet place
I liked that someone would always be available
I didn't like the time constraint
I feel like the [mathematics] lab was more welcoming
I completely understand why they do it
I just couldn't make it work with my schedule
I have kids
I sometimes get a phone call
I have to change my whole schedule
I sometimes didn't have a whole hour
I could walk in when I could
I was just so scared
I needed all the help
I could get
I could have one-on-one time with someone to help
I stayed much longer at the [mathematics] lab

I needed to miss class
I wanted to see if there was anything
I wanted to stay on top of things
I was very proactive
I missed class and usually set up a meeting by email

I would tell them to utilize the resources available
I am glad I went in knowing how I learn
I hope they stay focused and connected
I would have maybe passed the class without help
I wouldn't have enjoyed the experience as much, though
I may have passed by the skin of my teeth

I would tell them to train the teachers to learn about the students' learning styles

I am not in chemisty
I would use that stuff again
I use it all the time now

I believe they need to be open-minded
I know there are so many students from different walks of life
I want them to deal with every person individually as much as possible
I wish someone had shared the supports available with me
I really feel like this made me less stressed and ready for class

I have a cousin
I will try not to cry
I am just so proud of her
I really want to be like her
I know it's not going to be easy
I think about my classes
I think about where she is
I think about how her education got her there
I wish I had [this instructor] so much sooner
I want to pave the way for my own kids
I wouldn't have thought college goals were possible
I want them to know it's possible
I found my motivation through her
I wish I was 20-years-old
I wish I had had her example then
I feel like I missed out
I am starting so late
I guess better late than never
I wish someone was there as the example for me to start sooner in life

Moon's I-Poem

I started two and a half years ago
I had anticipated graduating already
I had some health issues
I am going for an associate's in applied science to be a medical assistant
I have one more semester
I start my externship in just a few months

I know I want to be a medical assistant
I know that I have enjoyed school
I just don't know if I am continuing on after graduation
I am not ready to confirm it is going to happen
I work now as a medical assistant
I actually just got the job
I am really excited
I am going right into the work force
I finish school within the next few months

I don't know if it is just this campus
I really lucked out
I get support there and from my family and friends
I think it began before I even started school
I was researching things
I decided at that point
I needed to set realistic goals
I needed to take my family into account
I know they would have a change of life, too
I didn't have time to attend [to] everything

I asked many questions
I felt like we were all in it together
I was very intentional about making relationships
I spent so much time with them
I actually wanted to go to class
I would get my [mathematics] stuff done
I would see all the people I laugh with

I dedicate it all to them
I know it is a really hard balance
I often wanted to quit school
I sometimes felt guilty
I know this was my dream, not theirs
I know there were times they were disappointed
I couldn't have done it without their support

I tried to separate school work and home life
I possibly could
I would get there to get all of my work done
I got home and didn't have anything left to do for school
I didn't have pending homework or studying
I also moved through the problems quicker
I could get one-on-one help
I hit a wall or came across a problem
I didn't understand
I was on the right track
I didn't feel so stressed out

I have something very important to say
I feel like they are not doing a great job
I had no idea what it was
I was so frustrated
I had to take two [mathematics] classes
I am so glad I did
I am still so frustrated, though
I think I got really lucky with my instructor
I probably wouldn't have gone back
I don't ever want to feel like it's a waste of time
I am still really concerned about that

I would tell them to be supportive and positive
I knew I wouldn't love taking an extra class
I didn't think it would be beneficial
I want instructors to reinforce the benefits
I think they would also feel like they aren't wasting their time

I feel quite often
I think about it a lot
I don't blame them
I am not mad
I am a little sad, though
I find it hard to explain stuff to them
I know it's funny and comical
I am sad about it
I love a new professor
I know they don't get it
I am committed to not letting my kids feel that way
I want them to know
I want them to feel supported
I am here to support them
I think I spent so long out of school

I was to get married and stay home
I didn't want to get married and stay home
I wanted to work
I wanted a good job
I didn't know how
I had other dreams
I plan to do it now
I am not mad at them
I am determined to make a better support system for my children
I know what it feels like to not have one

Alex's I-Poem

I started in spring 2015
I am 38-years-old
I got a late start
I want to get a degree in advanced robotics maintenance
I could say that my college journey has been great so far
I couldn't have asked for a better experience
I have two more semesters
I don't think I will continue on to another degree
I already had a big career change
I have four kids of my own
I just wanted to come through and bust out this degree
I can change careers then
I think there is opportunity around here with this degree

I didn't test high enough for college level [mathematics]
I was really intimidated
I had to do the tutoring program to score higher on the test
I spent so many years out of school
I was really behind
I was clueless

I had a great instructor for MATH 080
I was intimidated still
I was the oldest person in the class
I didn't know this new way to do [mathematics]
I don't think I would have ever passed college [mathematics]
I got so much more time to slow things down in 080
I needed more of the basic stuff
I learned in MATH 080
I just wasn't grasping some of the stuff
I am a visual learner
I didn't realize how much it helped
I am actually going through that again
I am not grasping the concept again
I watched every single video she posted
I would have not done as well
I worked really hard
I don't want to discredit myself
I did work hard

I don't really have too many friendships inside the college
I did make some acquaintances
I juggle four kids and a family

I don’t have too many relationships through school
I do see the people in my class and spend time with them in class
I was taken care of

I have an awesome wife
I know this isn’t easy for her
I know she sacrifices
I know she does a lot on her own
I can go to school
I know the kids are taken care of
I made it because she encouraged me

I would be so stuck
I couldn’t keep moving
I emailed her
I understood
I never really had a long wait time
I haven’t emailed many other instructors
I always emailed for stuff I needed clarification on
I did have a question
I was really comfortable with her
I wanna say probably one of the first emails
I ever sent in my life requesting help

I would tell them to not be afraid to ask questions
I would tell them to use everything available to them
I would tell them to take advantage of the opportunity to get some refresher skills

I think I would say to keep it going
I liked it
I would tell them to make sure the instructor supports the students
I want them to give them training so they really know how to teach

I first came into class with uneasy feelings
I didn’t know anything about any processes to follow
I learned it too back then
I learned it a long time ago
I know it was definitely out of my brain

I definitely started college later in life
I was first-generation
I got out of high school
I didn’t graduate with any high honors or anything
I actually wound up getting a GED
I went to work with RVs and manufacturing

I hated it for many years
I went through some major medical problems because of work
I got to thinking and decided we needed a change
I had to go to college
I would work in manufacturing
I didn't ever have college
I didn't have anyone who talked to me about college
I didn't have anyone who cared or was bothered by that in my family
I was normal to them
I look for my children to really go to college
I hope they see me sitting there going through college
I am so supportive and so involved with their education
I didn't have that
I almost can guarantee they'll go to college
I wish someone in my family did
I wouldn't be switching careers so late in life
I could have had an easier time