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THE INTERSECTIONALITY OF RACE, GENDER, AND AGE IN DEVELOPMENTAL MATHEMATICS

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by

Thomas E. Kammerling

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The dissertation of Thomas E. Kammerling was reviewed and approved* by the following:

Adnan Qayyum
Assistant Professor of Education (Adult Education)
Dissertation Advisor
Chair of Committee

Rose Mary Zbiek
Professor of Mathematics Education
Head of Department, Curriculum and Instruction

Ashley Patterson
Assistant Professor of Education (Curriculum and Instruction)

Davin Carr-Chellman
Assistant Professor of Education (Leadership and Counseling)
The University of Idaho

Susan M. Land
Director of Graduate Studies for Learning and Performance systems

*Signatures are on file in the Graduate School

ABSTRACT

This narrative study seeks to understand how the precollege educational and life experiences of Black women who entered college as nontraditional students impacted their experiences in developmental mathematics. Intersectionality is used as a lens to describe how being Black, a woman, and a nontraditional student forms a unique individual.

Developmental mathematics has acted as a gatekeeper in academics, in that failing to complete a required developmental mathematics sequence prohibits a student from pursuing certain majors. The literature on developmental mathematics is primarily written from a deficit perspective, emphasizing failure and noncompletion rates, and the experiences of Blacks, women, and nontraditional students are treated independently.

Given the lack of literature on the intersectionality of race, gender, and age, I decided that the first step to understanding this phenomenon was to listen to the stories that these women have to tell. Therefore I chose to employ narrative methods to allow their stories to be told in their own words. Being aware of my positionality as a White male mathematics professor, I used Reissman's (2008) Dialogic/Performance Analysis model because it acknowledges how stories are affected by the interviewer/interviewee relationship.

Three women participated in this study. They shared stories about their educational and life experiences both before beginning college as nontraditional students and while attending college. The results indicated that they did not distinguish between their educational experiences and life experiences, and that they approached their developmental mathematics courses in a practical and straightforward way. Implications for developmental mathematics and Black feminism were also discussed.

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Chapter 1

Introduction

A Growing Consciousness

For many people doctoral study serves as a springboard into a new career, or a new aspect of their career. In contrast, for me it is the capstone of nearly 40 years as a mathematics educator. My interest in race, gender and age issues in developmental mathematics represents a culmination of my professional experiences and academic research. It grew out of my desire for those who had not yet experienced success in mathematics to have an opportunity to do so, and was punctuated by several profound experiences. In the sections that follow, I tell three stories about how my emphasis on students who have been left behind grew, and relate the stories of several students who have most influenced my interest in the stories told by older Black women about their developmental mathematics experiences.

My Story: Discovering the “Other”

I grew up in an upper-middle-class fundamentalist Christian family where my only social interactions outside of school were with members of our church. Although it was located directly across the street from an all-Black neighborhood, only Whites attended our church. Even within our church, I was discouraged from making friends with the children from working-class families. Given this social isolation, I viewed most people as being the "others" and had no understanding of their lives. Not surprisingly, the school district in which I took my first

position as a mathematics teacher was in a predominantly White, middle-and-upper-class school district. The emphasis was on college preparation, and students who were not "college bound" were considered second class. In my first year of teaching I was assigned a ninth grade *Topics in Math* course that was used as a dumping ground for students who had not done well in Pre-Algebra. It was immediately obvious that these students were different from the majority of students at the school. For the most part, they came from the few below-average-income families that lived in the county, and they were constantly reminded of their "inferiority" by the other students, and even the faculty. It was well known that the math teachers did not want to teach this course. Perhaps it was my inexperience and naiveté, but I thought the problem was not the students, but the boring and meaningless curriculum that they were being taught. I found that these children, whom I had been raised to think of as insignificant "others," were really no different from anyone else; they had hopes and dreams and fears just as I did.

Within the first month I scrapped the textbook and began teaching lessons based on real-life topics that the students found interesting. I immediately made cooperative learning a daily practice. I had not read any research on cooperative learning; it just made sense to have the students work together in a supportive environment where their success was tied to their classmates' success.

Because the other teachers had little interest in this course, and the administration was glad to have someone willing to teach it, my innovative pedagogical innovations met no resistance. I had the students draft sports teams and keep track of their players' statistics, then each week they competed against each other's teams. It was much like fantasy sports leagues today, except that they had to look up their players' statistics in the newspaper, record them, and do their own computations to determine the winners. I had them develop real-life budgets and taught them about banking and our monetary system. We took field trips to the Denver Mint and the Federal Reserve Bank. They learned how to score a bowling game, and put that knowledge

into practice at the local bowling alley. There was a pizza restaurant in the foothills above Denver called Beau Jo's that was famous for having so many options. We studied combinatorics and used their menu to determine how may possible pizzas could be made, and took a field trip to the restaurant where the manager was so impressed with the students' work that he thought it was an advanced mathematics group. Nearly every lesson was grounded in meaningful (and fun) applications. For the first time in their lives, these students were successful in mathematics and enjoyed learning it.

In the Topics in Math course, I saw students transform from hating math and being convinced they could not learn it, to math being their most successful course. The growth of their self-esteem and willingness to at least try to learn mathematics made a real difference in their lives. It certainly made a difference in my life. From that time on, the focus of my teaching career has been on helping those who have not yet experienced success in mathematics get a realistic opportunity to succeed. At Vista High School (a pseudonym), where I taught for 17 years, mathematics was taught using a curriculum based on rote computational drill. This produced a dichotomy: either students excelled on standardized tests, or they failed miserably. I developed a course to give students who had been failing due to the rigid curriculum a second chance in mathematics, and it was very successful. In essence, I was working on developmental mathematics at the high school level. I can say with great pride and satisfaction that this approach to teaching math has been very successful. Besides seeing many students turn around their grades in math, I have had numerous former students contact me decades after being in my class to tell me that the math class I taught them was the best class they ever took.

Jose's Story: Place Restricts Personal Achievement

While teaching at a state university during a sabbatical leave from Vista High School I had an advisee named Jose (a pseudonym). Jose had just graduated from a predominantly Hispanic school located in a poor neighborhood with significant gang activity. He had earned a Governor's Scholarship, which would pay for every aspect of his college education, including pencils and paper. As his advisor, I was helping him plan his course of study. His major required that he take college algebra before starting any courses within his major. However, the mathematics department had recently implemented a placement exam, and he could not qualify to begin College Algebra. The "simple" solution for a student in that situation was for them to take Intermediate Algebra from the Community College of Denver, located on the same campus as UCD. The problem for Jose was that his Governor's Scholarship would not pay for the remedial course, and he had no money to pay for it himself. He was trapped in a catch-22: He had done all that he was asked to do in high school so that he could escape the cycle of poverty, but when he came to college, he found he could not even begin. Jose's plight was not a matter of his race; it was a matter of his *place* (Nesbit &Wilson, 2010): a poor neighborhood with substandard schools. Nesbit and Wilson (2010) argue that places teach us about where we fit into the world around us. Further, places shape our identity and limit or expand our opportunities in life. Many people who live in places where their options are limited accept these limitations consciously or subconsciously. In either case, the limitations of place are perpetuated. Jose's story illustrates how one's place can restrict personal achievement.

In retrospect, Jose's experience should have inspired me to examine social justice in education. Yet, somehow, I managed to ignore the elephant in the room and kept my focus exclusively on my studies in mathematics; and when I returned to the classroom, on the students in front of me. For the remainder of my public school career I sought to provide opportunities for

success to those who had not yet experienced it. However, that focus was on a small group of students who were only "disadvantaged" in comparison to their overly advantaged classmates.

Mary's Story: A Study in Persistence

I met Mary in my second year teaching at Central College (Mary and Central College are both pseudonyms). Mary was a Black woman in her fifties who had not attended school since dropping out of high school as a teenager. She was not familiar with the social norms of a formal college classroom. She would speak out whenever she had a question, and would leave class several times in a single session. Having not attended school in over 30 years, her study and academic organizational skills were quite limited. Also, she felt very out of place in a classroom where most of the students were teenagers. Mary met with me to discuss these issues and shared that she had a strong desire to learn. I realized that her problem was not a lack of ability or willingness to work; she simply needed to become oriented to college study and to develop good study skills. We met regularly and Mary worked very hard to learn study skills along with the course content. At the end of the semester her grade average was under the department-required 70percent, but I decided that it would be better for her to go on to Algebra I rather than repeat Pre-Algebra. The next semester Mary took Algebra I from me. She worked hard, but fell quite a bit short of the required 70 percent. The following semester Mary again signed up for my Algebra I class. That semester she worked harder than any other student I have encountered at Central College. Besides doing all of the assigned homework (mostly the odd numbered questions with answers in the back of the book), she did all of the even numbered problems and went to the book's website for additional practice. This time Mary passed, and celebrated her success with my wife and me at dinner.

During the three semesters that Mary was my student, she shared many stories of her personal life. Her son died in a gang-related incident in Philadelphia, and she was recovering from a substance abuse problem. She had a nephew who was killed by police in Washington State. So many times in her life she had been knocked down, yet here she was at Central College, studying to go into human services so that she could help others who have had a hard life. But she did not fit into the mold that the human services program was looking for. She was too street-wise and not school-wise enough. The head of the department did not think she belonged in the program, and said so to the dean of the school. Despite the progress she had made, Mary was dismissed from the college for poor grades. I lost touch with Mary for several years, but recently was able to contact her. She is living in Philadelphia and going to school to become a legal assistant. Mary has been running against the wind all of her life. She has faced poverty, teenage pregnancy, tragic loss, substance abuse, and a school that did not value her unique background. All these factors pushed against her desire to succeed, yet she has not given up. Her resiliency and positive attitude are an inspiration to me.

A Disturbing Pattern

Jose's and Mary's stories are not unique. Evelyn (a pseudonym) was studying to become a pastry chef. I remember that she always wore a large button with a picture of her son on it. Like Mary's son, he had died from gang related violence. She was doing well in school (she got a B in the developmental mathematics course) but left school to return to Philadelphia when her husband became ill. Sherrie (a pseudonym) wanted to become a nurse. She was working at the local hospital to support her two children while she attended school. Sherrie's supervisor knew she was going to school, but regularly required her to work overtime, which resulted in her missing class. Despite this, Sherrie passed both of the developmental mathematics courses she

took with me. I wanted to check in with her a semester later, but found that she had left school. Her phone was disconnected, and when I went to the last address that the college had for her, her neighbors said that she had moved, but they did not know where to. Stephanie (a pseudonym) had worked for years in a local factory and wanted to go into management, so she enrolled in the plastics engineering program. I remember Stephanie being very animated and full of excitement about life. She earned an A in the first developmental course she took with me, and was doing well in the second one when she suddenly dropped out. I do not know what happened to her or why she left school when she was doing so well.

Mary, Evelyn, Sherrie and Stephanie came to my office for math help regularly, and over time they shared their personal stories with me. Seeing four enthusiastic Black women leave school without realizing their dreams struck me as more than mere coincidence. I did a search of my developmental mathematics rosters for the first 6 years that I taught at Central College and identified all of the Black women from those classes. Of more than 15 students, none had earned a degree, and only 2 were still attending school (both of whom were in their early twenties). This so shocked me that I submitted an IRB proposal to the college to obtain a database of all of the Black women who have attended Central College. I examined this database by looking at the women's transcripts and noting all of their mathematics grades, their nonmathematics grade point average, and whether they completed a certificate or a degree. If they did not complete a certificate or degree, I noted how many credits they earned before leaving school. A common pattern that I observed was students doing well in their nonmathematics courses, but leaving school after failing the same developmental mathematics course twice.[1] The statistics on the percent of students who earned a certificate or degree tell a disturbing story:

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[1]Central College has a policy that if a student fails the same developmental mathematics course twice, they are dismissed from school until they transfer in credit for an equivalent course from another school. This policy was enacted when it was observed that a student who failed a developmental course twice was very

- Fifteen of 100 Black women who entered school at age 28 or later (10-plus years from high school) earned a certificate or degree.
- Nine of 50 Black women who entered school at age 35 or later earned a certificate or degree.
- Five of 30 Black women who entered school at age 40 or later earned a certificate or degree.
- Of the 16 Black women who entered school at age 46 or later, none earned a certificate or degree.

When compared to the college's overall completion rate of 46% (National Center for Educational Statistics, 2016), it becomes clear that this group of people is facing some set of obstacles that significantly hinder their likelihood of success in school.

Problem and Purpose Statement

The problem I plan to address is that Black women who are older nontraditional students do not experience success in developmental mathematics in a way that reflects their ability and effort. The definition of success in developmental mathematics that has been applied to them is achieving the required 70% test average. This is an arbitrary standard based on tests comprised of symbolic manipulations that have virtually no relationship to their ability to excel in their chosen field. This causes developmental mathematics courses to act as gatekeepers (Roksa, Jenkins, Jaggars, Zeidenberg, & Cho, 2009), denying admittance to fields of study where students will never need to use symbolic manipulation. The denial of access by these gatekeeper courses has been profound among Black women entering college later in life. Because I have found

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unlikely to pass it on subsequent attempts. The purpose is to protect students from wasting time and money on tuition when they were unlikely to earn a degree.

nothing in the literature that addresses this group of people, I believe that before possible solutions to the problem can be hypothesized, I need to listen to the stories they have to tell about their experiences in developmental mathematics. Therefore, I did a narrative analysis on the stories about their developmental mathematics experiences as told by Black women who are nontraditional students. This is a complex interest with four important components. First, I define them individually, and then I tie them together in a comprehensive definition using the concept of intersectionality.

Developmental Mathematics

More than 40% of college students take at least one developmental mathematics course, and the failure rate for individual developmental mathematics courses nationwide is about 50% (Roksa et al., 2009). More telling is the fact that many students require multiple developmental mathematics courses, and the completion rate of an entire developmental sequence is in the 20%–35% range (Bonham & Boylan, 2012; Bailey, Jeong, & Cho, 2010). This high failure rate is further complicated by the fact that students avoid certain majors based on the required mathematics courses (van Tuijl, 2016). Mathematics acts as a gatekeeper, in the sense that it shuts people out of many careers, and developmental mathematics is the first filter.

Black Students in Developmental Mathematics. The difference in success rates between Black and White students is commonly referred to in the research literature as the *education achievement gap*. Nationally, Black students have higher failure rates in developmental mathematics courses and programs than do White students (Bailey, Jeong, & Cho, 2010; Bonham & Boylan, 2012), and this pattern holds true in my developmental courses. Compared to White students, Black students have lower standardized test scores, higher dropout rates, lower grade point averages and higher representation in special education programs (Ford

& Moore, 2013). In mathematics, the disparity between White and Black student participation is the largest in advanced high school courses, such as precalculus and calculus (Riegle-Crumb & Grodsky, 2010). This results in minority students avoiding mathematics and being blocked from access to the higher paid technical fields (Rutschow & Schneider, 2011; Stinson, 2004). When Black students choose to pursue a career requiring college mathematics they often have to face the additional hurdle of developmental courses.

Women in Developmental Mathematics. Women sometimes experience mathematics differently from men. Frenzel, Goetz, Pekrun, & Watt (2010) determined that although a difference in interest in mathematics is evident as early as Grade 5, at Grade 7 girls' interest in mathematics drops much more dramatically than that of boys. This trend translates to fewer women choosing STEM (science, technology, engineering and mathematics) majors in college and therefore fewer women in those careers. In developmental mathematics courses, women have higher math anxiety levels than males (Ganley & Lubienski, 2016; Ganley & Vasilyeva, 2013). Yet, even though their placement test scores are lower than males, their success rate in the classroom is higher (Donovan &Wheland, 2008). These seemingly contradictory facts underscore the complexity of the relationship between gender and success in mathematics.

Nontraditional Students in Developmental Mathematics. Nontraditional college students also have a complex developmental mathematics experience. Their daily life is often dominated by non-school-related circumstances such as working full time and being a parent (Pelletier, 2010). Their life experiences and level of motivation are different from traditional students because they have been in the adult work world and recognize the practical value of a college education in a way that students coming straight from high school cannot (Francois, 2014; Kenner & Weinerman, 2011). Their likelihood of passing a developmental course they are currently enrolled in is greater than that of a traditional student (Wolfle & Williams, 2014), yet their likelihood of completing a degree is lower (Advisory Committee on Student Financial

Assistance, 2012). I am restricting my study to nontraditional students who have been away from school for at least 15 years.[2] The advancement of technology over the past 15 years has been such that the use of complex graphing calculators in math classes is more common than pencil and paper computations. Personal observation, substantiated by my colleagues, reveals that nontraditional students who have been away from school for at least 15 years find the use of the graphing calculator to be their greatest challenge.

The Intersectionality of Race, Gender, and Age

The research literature is rich with studies on race, studies on gender, and studies on age. All of these factors have been researched in relation to developmental mathematics. The experiences of Black women who are nontraditional college students can certainly be informed by these studies, but I would argue that these women are not simply a subset of the groups that these labels attempt to describe. As an analogy, consider water: H_2O. A water molecule contains two hydrogen atoms and one oxygen atom, but it is clearly neither hydrogen nor oxygen—it is a unique substance. The participants in my study *are* Black, they *are* women and they *are* nontraditional college students; yet they cannot be defined by any single one of these attributes, nor by a combination of them. They are *Black women who are nontraditional college students*. The interaction of these factors in their lives has been reified by the reality of their experiences. Figure 1 illustrates this interaction. Recognition of the distinct nature of people who are

[2] Fifteen years is a rough cut-off value. Students who are fifteen years removed from high school will identify with a different generation than traditional students. Also, they are less likely to have used graphing calculators, and if they did, the almost certainly have forgotten how to use them.

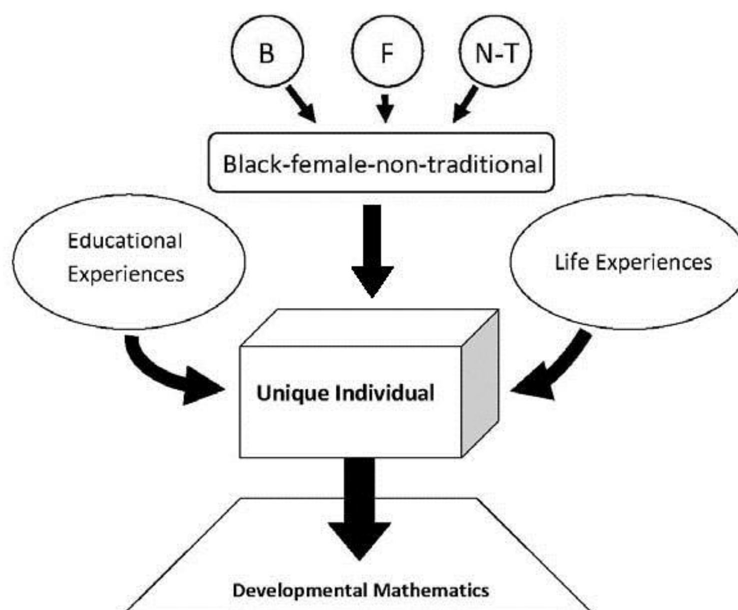

Figure 1-1. Factors contributing to the unique developmental mathematics experiences of Black women who are nontraditional students.

members of more than one oppressed group is referred to in the research literature as *intersectionality* (Crenshaw, 1993; Mitchell, Simmons, & Greyerbiehl, 2014). My substantive interest therefore is the developmental mathematics experiences of these *unique individuals*, and my theoretical perspective emphasizes the intersectionality of race, gender, and age in the context of developmental mathematics. I emphasize *unique individuals* because I am interested in the individual stories told by each woman, from her personal perspective.

Study Focus and Research Questions

I am interested in the stories about their developmental mathematics experiences as told by unique individuals who have experienced the intersectionality of being nontraditional Black female students through the lens of their educational and life experiences. The focus is not on

any objective set of facts, but rather on the stories they tell from their personal perspective. The reality I seek is the reality that they have experienced.

Research Questions

1. How do the precollege life stories of individual Black women who enter college as nontraditional students shape their attitudes toward mathematics and their expectations of success or failure in developmental mathematics?
    a. What stories do individual Black women choose to tell about their precollege educational experiences, and why?
    b. What stories do individual Black women choose to tell about their precollege life experiences, and why?
2. How do individual Black women who enter college as nontraditional students perceive their experiences in developmental mathematics courses?
    a. What stories do individual Black women choose to tell about their developmental mathematics experiences, and why?
    b. What perception of success or failure do individual Black women who enter college as nontraditional students have about their experiences in developmental mathematics?
    c. Based on their experiences, what recommendations do these women make for change in the developmental mathematics program?

My Position as a Researcher

I am interested in the personal stories told by unique individuals, and I hope that the women I interviewed openly and honestly shared their thoughts and feelings about their experiences in developmental mathematics. However, Riessman (2008) stresses that the interviewer affects the stories told by the interviewee; not only by the questions asked, but by who they are and how the interviewee perceives them. The people who I interviewed in my study are Black women who had begun undergraduate study at least 15 years after leaving high school. They had particular difficulty with mathematics, and needed to take precollege-level math courses, some as elementary as pre-algebra. In stark contrast, I am a White male mathematics professor. I am the product of my life experiences, so all of the personal and professional experiences I discussed earlier in this chapter, along with my academic study, were present as I conducted the interviews; to deny or hide that fact would be dishonest.

My recognition of the significance of positionality has grown through experience and research. I am aware that I benefit from privileges in society based on my race, gender, and the socioeconomic status of the family in which I grew up. Interactions with students such as Jose and Mary provided real-life examples of this, and reading the literature on social justice in education has provided invaluable insight.

Two works in particular have shaped how I view myself as a researcher. In my first semester as a doctoral student I read Michael Apple's (1992) article titled, Do the Standards Go Far Enough?: Power, Policy, and Practice in Mathematics Education. Apple discussed the significance of the National Council of Teachers of Mathematics *Curriculum and Evaluation Standards* (1989) in terms of the gross inequities in quality of education that exist in the United States. This struck a chord with me because the last several years of my public school career were the first years of the Colorado State Assessment Program (CSAP) standardized

examinations. I observed that the schools in my wealthy school district could not possibly fail these exams, while poor school districts serving minority students were very likely to fail. High stakes testing, fueled by the No Child Left Behind Act (2001), and more recently the Every Student Succeeds Act (2015) and the adoption of the Common Core Standards (2010), now drive nearly all public school curriculum. Koyama and Cofield (2013) stated that No Child Left Behind policies “fail…to increase the academic engagement of most students, to heighten the robustness of curriculum, or to promote student critical thinking, creativity, or problem solving. This seems especially true for low-income, Black, and Latino youth” (p. 278). Apple’s (1992) article caused me to view everything I learned about curriculum and instruction, theories of learning, educational policy, and pedagogy in light of its ramifications for social justice in education. In practice, this leads to regular discussions of social justice issues in my math classes. For example, a problem called for the students to produce a graph based on a data set of persons' credit scores and the interest rate they paid on a consumer loan. The clear pattern was that higher credit scores are associated with lower interest rates. I pointed out that this results in goods and services costing less for the wealthy and more for the poor.

The second work that significantly impacted my positionality as researcher was Beverly Tatum’s (1997) book *Why Are All the Black Kids Sitting Together in the Cafeteria?* Tatum likened passive racism to riding on a moving walkway in an airport. It is not sufficient only to refrain from engaging in racist behavior; those of us born with societal privilege must actively work against racism, or we will be carried along with flow of entrenched racist ideology. I embraced this concept, and I believe that it applies equally well to sexism, classism, ageism, homophobia, and any other form of discrimination. Because I spent much of my life accepting the privileges afforded me based on my race, gender, and socioeconomic status as being natural and normal, the epiphany I experienced as I read Dr. Tatum's book has been life changing. I have committed myself to actively countering all forms of discrimination in my professional life as

well as my private life. The most profound effect of this outlook has been a sense of humility as I interact with people from different walks of life. It is with humility that I recognize the intrinsic value and essential equality of all people, and this fuels my desire to work for social justice. My position as a mathematics professor allows me to model these values for my students, and has led naturally to my choosing to study the developmental mathematics experiences of older Black women.

Being aware of the disconnect in personal experience between the women I interviewed and leads me to draw upon the concept of reflexivity as described by Berger (2013). The essence of reflexivity is that the researcher must take personal responsibility for the effect that their positionality has on the interviewing process. As I conducted the interviews and analyzed the data from my study, I endeavored to remain mindful of my position as a researcher. As an aide to maintaining this mindfulness, I regularly engaged in member checking, and shared my thoughts and reflections with colleagues who were intimately aware of my research goals. I approached this project with humility and thankfulness to the women who participated for allowing me to share in their experiences.

Chapter 2

Literature Review

In this literature review I first address the current state of developmental mathematics, then I explore the experiences of Blacks, women and nontraditional students in developmental mathematics through the lens of social justice. Finally, I discuss the interconnectedness of these topics through the lens of intersectionality.

Background, Statistics and Demographics of Developmental Mathematics

In this section I define and describe developmental mathematics courses in terms of their curricular content, how many students take these courses, and their demographics. I then give an overview of the prevalent attitudes toward developmental mathematics, including suggestions for improving, restructuring, or eliminating them. Understanding the current state of developmental mathematics is important because as I listened to the stories told by the women I interviewed, I wanted to know whether their concerns were already being considered or whether they were not even on the researcher's radar.

What Are Developmental Mathematics Courses?

Developmental mathematics courses are non-credit-bearing courses taught at colleges, which allow students to begin their college study while remediating their mathematics skills. These courses are taught at both community colleges and 4-year institutions (Bahr, 2008). The most common courses are elementary and intermediate algebra, which are the equivalent of high

school algebra I and II. Pre-algebra and at least one lower level basic arithmetic course are also available, but generally only through community colleges. However, there is no consistency from school to school as to the meaning of developmental coursework. "Exactly what constitutes 'college-level work' is by no means clear. Institutions differ on this, and there are different expectations even within single institutions" (Attewell, Lavin, Domina, & Levey, 2006, p. 887).

Who Takes Developmental Mathematics?

The developmental mathematics student population is diverse, varying by age, race, gender, socioeconomic status, high school achievement, and type of institution attended. In this section I summarize the demographics of developmental mathematics students.

Percent of the student population. Researchers report various percentages of students who take (or are recommended to take) developmental mathematics courses. However, for community colleges, no researchers give a percentage below 50% (e.g., Hughes & Scott-Clayton, 2011, Melguizo, Bo, Prather, & Kim, 2011; Rocksa, Jenkins, Zeidberg, & Cho, 2009). Le, Rogers and Santos (2011) say that 60% of all community college students must take at least one developmental mathematics course. In a study of about 86,000 Los Angeles community college students, Bahr (2008) found that the first college mathematics course taken by 81% of the students was developmental, while Fong, Melguizo and Prather (2015) reported that 85% of California community college students are referred to developmental mathematics. Even within a single college the statistics are not clear. Part of the reason for the variability in reporting the percent of students who take developmental courses is that schools and researchers define the term *developmental* differently, and different studies focus on different subsets of a population that is not clearly defined. For example, in the fall of 2011 at Central College, 1,357 out of 1,693 incoming students (about 80%) were placed in developmental mathematics (Prealgebra, Algebra I

or Algebra II). However, due to the particular requirements of their chosen program, 260 students who were placed in Elementary Algebra II did not have to take a developmental mathematics course, resulting in 65% of the incoming students actually being required to take a developmental mathematics course. No matter what statistic is used for the percent of community college students taking developmental mathematics, the number of students impacted is huge.

Social demographics. Minority students, females, economically disadvantaged, and students for whom English is a second language are greatly overrepresented in developmental courses (Attewell et al., 2006; Fong et al., 2015). Minority enrollment in community colleges, where the majority of developmental courses are offered, has been steadily increasing (Bailey, Jeong, & Cho, 2010; College Board, 2016). Not only are there proportionally more minority students in developmental courses, they are also concentrated at the lowest levels. For example, among Los Angeles area students taking developmental mathematics courses, Whites and Asians were roughly 4 times more likely to be taking the highest level than the lowest, while Blacks and Hispanics were 2 to 3 times more likely to be in lowest level than the highest (Bahr, 2008).

Many of the major studies use first-year students for their databases (e.g., Attewell et al., 2006, Bahr, 2008; Bailey et al., 2010), therefore many nontraditional students are left out of their studies because they had some prior college experience. Kenner and Weinerman (2011) note that the main groups of students in the growing number of adult learners entering college developmental education courses are "workers who have lost their jobs... veterans returning from Afghanistan and Iraq... and, adults who have just completed their GED" (p. 88). Considering that 38% of all undergraduate students are over the age of 25, and 25% are over the age of 30 (Bell, 2012), this is too great a population to ignore.

Students’ level of achievement in high school was not a clear predictor of the need for developmental study: 10% of the top quartile and 25% of the second quartile (in in terms of high

school math/reading assessments) took developmental courses. Further, developmental coursework is not limited to community colleges. The percent of students who took at least one developmental course (reading, math, or writing) was 31% at nonselective four-year colleges, 14% at selective colleges and 2% at highly selective colleges (Attewell et al., 2006).

Are Developmental Mathematics Courses Successful?

Success is subjective. If 10 out of 20 students in my Elementary Algebra I class fail, it could be called a failure because half of the class did not succeed. On the other hand, it could be called a success because here are 10 people who now have an opportunity to pursue their college major due to having passed this developmental mathematics course. At Central College only 15% of the Black women who began their studies at age 28 or later completed a program to receive a certificate or diploma. Clearly something needs to be changed. Nearly every article written about developmental education includes suggestions for improvement. Examining the stories told by the women I interviewed in light of these suggestions for change was enlightening. The question is, does the system need some fine-tuning, a major overhaul, or should we scrap it and start over with something completely different? In this section I present both the critical and the positive viewpoints of the successfulness of developmental mathematics courses.

The system is failing. Complete College America (2013) published a scathing report titled *Remediation: Higher Education's Bridge to Nowhere*. Their main points were that "too many entering freshmen need remediation, most students don't make it through college-level gateway courses, and most developmental students never graduate" (p. 3). They hold to the "scrap it" line of thinking, advocating for elimination of developmental courses, and instead providing additional academic assistance as a corequisite. Bahr (2008) found that of those who began in developmental math, 75% did not complete a college-level mathematics course.

Calcagno and Long (2008) looked at the effect of remediation on nearly 100,000 students in Florida. They state that there is “little rigorous evidence on the effectiveness of college remediation on the outcomes of students… It does not necessarily help students… make long-term progress toward earning a degree” (p. 2). It could be argued that college remediation is well intentioned, but ineffective. “Community colleges have done a great job of diversifying their first-year classes, but if you fast-forward to graduation day and look at who's on the stage, they've lost a lot of that representation” (Mangan, 2014, p. 1).

Some scholars argue that college curricula have been “dumbed down” to allow more students to complete programs, and that these courses take advantage, financially and emotionally, of students who cannot reasonably complete a degree (Attewell et al., 2006; Levin & Calcagno, 2008). Also, students may become discouraged because they face as much as two years of developmental mathematics courses before beginning college level work (Stigler, Givvin, & Thompson, 2010). Since the majority of developmental courses are taught by part-time faculty at a much lower cost to the college than full-time faculty, the question can be raised whether developmental courses are being used to raise enrollment for the profit of the school (Rutschow & Schneider, 2011).

Besides the cost in (possibly) wasted tuition for students, state legislators are concerned with the high cost of college remediation. Since the material being taught in these courses was already taught in the public school, they question having to pay a second time for students to learn it (Bahr, 2008; Kozeraki, 2002, Levin & Calcagno, 2008). Estimates on the cost of remediation run from 2 to 3 billion dollars per year (Adams, Franklin, &Gulick, 2012; Fong et al., 2015; Levin & Calcagno, 2008). However, it should be noted that this is only about 1% of the higher education budget (Callan, 2000). Although there has been an overall increase in state funding of higher education over the past several years, half of the states spent less on higher

education in 2015 than they did in 2010 (Wexler, 2016), so education dollars are still at a premium.

There are good things happening in developmental mathematics. Mark Twain popularized a quote allegedly made by British Prime Minister Benjamin Disraeli "There are three kinds of lies: lies, damned lies, and statistics." I recall working in the statistical consulting lab at the University of Colorado at Denver. The most common question we received from clients was "What does my data mean?" We joked among ourselves that we would like to answer "What do you want it to mean?" When looking at data on the success of developmental mathematics courses/programs we need to properly interpret the findings, since a simplistic or improper interpretation of raw data can be misleading. Attewell, et al. (2006) employed a statistical procedure called the *counterfactual model of causal inference*, which allows for a regression model to have the characteristics of an experimental design with random assignment of subjects into treatment and control groups, resulting in the desirable characteristic that both groups are (reasonably) identical on background characteristics. The statistic generated by this procedure, called a propensity score, predicts the probability of that student having the treatment. For the variable *student earned a college degree,* the raw data indicated that taking developmental coursework was a serious detriment: only 28% of the developmental mathematics students earned a degree, compared to 36% of the nondevelopmental mathematics students (a statistically significant difference at the .001 level). When the counterfactual model was applied, in essence eliminating all other factors, the developmental mathematics students had a propensity score of 0.34, compared to the nondevelopmental mathematics students' 0.31. This means that taking developmental courses appears to have an effect of *increasing* the likelihood of earning a college degree by 3%. However, the result was statistically insignificant. Taking three or more developmental courses (of any kind) revealed similar results: significantly fewer multiple developmental mathematics students earned a degree when using the raw data, but the difference

was not significant when controlling for other factors. For students taking two or more developmental mathematics courses, the propensity scores were 23.8% earned degrees for multiple developmental mathematics courses vs. 26.7% for those taking no developmental mathematics courses (a mildly significant difference). Attewell et al. (2006) concluded that

> Most of the gap in graduation rates has little to do with taking developmental classes in college. Instead, that gap reflects preexisting skill differences carried over from high school. In two-year colleges, we found that taking developmental classes was not associated at all with lower chances of academic success, even for students who took three or more developmental courses. (p. 915)

These results are very encouraging, considering the negative impression that the raw data gives. Fong et al. (2015) observed that a major factor in students' lack of success was failure to *attempt* developmental mathematics courses. No matter at what level they began, students' success rates in particular courses were equivalent to students who took fewer developmental courses than they did. In other words, the number of previous courses taken by students did not affect the likelihood of their passing the course in which they were enrolled. Figure 1 illustrates this. The percents and counts in the arrows represent those who attempted the next step, while the percents and counts in the circles represent passing the course. What places lower level developmental mathematics students at risk is the number of times they are exposed to a possible failure. For example, those who began with Arithmetic have four opportunities to not attempt the next course, and four opportunities to fail a course. A negative interpretation of this data would be that out of over 15,000 students who were referred to Arithmetic, only 1,000 completed the developmental sequence. From a positive perspective, the message here is that persistence is the key to success in developmental mathematics. "Students who are actually persisting are 'catching up' and are even more successful than their peers who began their sequences with higher math ability" (Fong et al., 2015, p. 734).

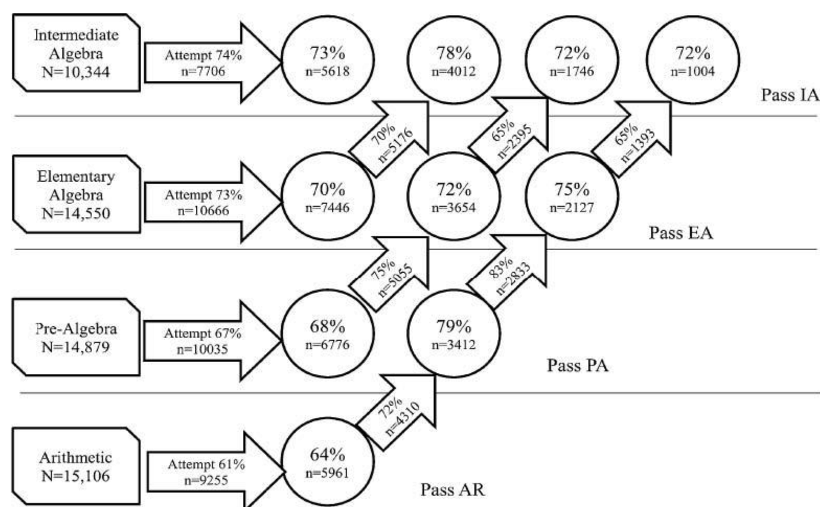

Figure 2-1. Percent of students who attempt the next developmental mathematics course and percent of students who pass each course (Fong et al., 2015, p. 733).

In summary, although there is inconsistency in the courses offered, and uncertainly about whether developmental mathematics courses are effective, it is clear that there is a serious need for remediation of some type for a large number of students. Minority students, females, people with low income, and nontraditional students are more likely to take developmental mathematics courses. Although the cost is large, it is a small portion of the overall higher education budget, and there is evidence that offering developmental mathematics courses provides opportunities for students to succeed in college.

Moving Forward

The vast majority of the literature on developmental mathematics centers on suggestions for improvement. Some of it has little bearing on my research interest, such as proposals for high-school-based interventions and dual enrollment programs (e.g., Cowan & Goldhaber, 2015; Fine, Duggan, & Braddy, 2009; Karp, Calcagno, Hughes, Jeong, & Bailey, 2008; McCord &

Roberts, 2014; Rutschow & Schneider, 2011). Other studies focus on placement strategies and their implications (e.g., Donovan & Wheland, 2008; Hughes & Scott-Clayton, 2011; Jacobson, 2006; Melguizo, Kosiewicz, Prather, & Bos, 2014). Although these are important aspects of developmental mathematics, they do not pertain to students who have been out of school for at least 15 years, because they almost always will need a review (if not first-time learning) of elementary algebra.

Readiness for College Programs

Several authors call for colleges to implement programs or courses aimed at improving students' skills and general college readiness. During a preliminary study of mine one woman expressed her frustration at being in the same classes as young students just out of high school.

> But the basics of the algebra, they have more understanding of it. They've been in school and they have the knowledge that they had a teacher that was teaching them algebra anything—anything that has to do with algebra, even if it's the basics, they have that knowledge.

She strongly advocated for a college preparation course, only for nontraditional students, that would help them gain familiarity with college procedures and expectations, and particularly one-on-one help with the graphing calculator that is used in mathematics courses at Central College.

Bahr (2008) notes that students in developmental courses are in particular need of intensive, unambiguous guidance counseling, not only upon entry into college, but on a continuing basis. He observed a phenomenon where students would continue to register for classes after failing their developmental mathematics sequence, without ever receiving a degree. These students need to be actively directed toward an understanding of "the availability and

means of completing goals, such as a certificate, that are realistic given their limited progress in mathematics" (p. 196).

Fowler and Boylan (2010) describe a program named Pathways to Success (PWAY) which consists of four components: clear student guidelines; a first-year experience transition course; prescriptive, developmental, and intrusive academic counseling; and tutoring along with developmental education courses. Preliminary results showed "significant increases in cumulative GPA and improvement in all measures of success for which data were collected" (p. 8). Illich, Hagan, and McCallister (2004) observed in their study that students who did not complete their developmental courses performed at a lower level in their nondevelopmental courses even after controlling for difference in baseline abilities. They attribute this difference to "other factors such as study skills, academic motivation, and financial resources" (p. 449). Besides advocating for nonacademic support similarly to Bahr (2013) and Fowler and Boylan (2010), they also say that this is evidence that placement based on a single test score is insufficient.

Programs of this type could have a very positive effect on Black women returning to school after a long absence. As noted previously, I reviewed the transcripts of Black women who attended Central College. A common theme was changing from program to program, amassing credits, but failing mathematics and finally dropping out without a certificate or degree. College readiness programs, along with ongoing guidance and support could possibly have helped some of these women achieve their academic goals.

Program Innovations

Many scholars have recommended changes in developmental mathematics programs. In this section I explore three models for program innovation: acceleration, distance education, and

hybrid. All of these models have the potential for meeting the needs of (at least some) nontraditional Black women, but none of them can be considered a panacea.

Acceleration models. Traditional developmental mathematics courses cover a single semester. Since many students require multiple courses (as many as four), and it is not uncommon to fail and need to repeat a developmental mathematics course, completing a developmental sequence can cover multiple years. Fong et al. (2015) established that if a student persists in their developmental sequence, their success rate at each step is the same as those who started in more advanced courses. However, the multiple steps involved result in tremendous attrition. The probability of completing Intermediate Algebra (which allows students to begin credit-bearing College Algebra) decreases markedly for each additional developmental course a student is required to take. If they begin with Intermediate Algebra, the pass rate is 54% (73% discounting those who do not attempt the course). If they begin with Elementary Algebra, the pass rate for Intermediate Algebra drops to 28%, Pre-Algebra 12%, and Arithmetic 7%. Clearly, shortening the sequence can be an aide to the persistence that is the key to student success.

Edgecombe (2011) says that "learning outcomes for (accelerated) courses are often comparable to, if not better than, learning outcomes for semester-length courses" (p. 1). An example of acceleration is the FastStart program at the Community College of Denver (CCD), which condenses two semester courses into one (Jaggars, Hodara, Co, & Zu, 2015). There are three courses in the standard developmental mathematics sequence at CCD, so this allows students to complete their developmental work in one or two semesters, depending on how much remediation they require. A key component to the FastStart program is a case manager who meets with students before entry into the program, and follows them through until completion. The initial meeting acts as a screening process, and one in six students choose not to participate after meeting with the case manager. This is an important component, since some students are not academically and motivationally prepared for an accelerated course (Collins, 2010; Rodgers,

Posler, & Trible, 2011). The FastStart program also includes professional development for instructors. This improves the "buy-in" from the instructors by creating a collaborative community of practice (Wenger & Snyder, 2000) and helps mitigate the fact that a large portion of developmental mathematics courses are taught by part-time faculty, primarily high school teachers, who have a different orientation to teaching than the full-time college faculty (Rutschow & Schneider, 2011).

Distance education. Distance education has grown enormously over the past 2decades. Recent government figures indicate that more than 5,000,000 students per semester enroll in distance education courses through degree-granting institutions (NCES, 2014), and community colleges have had the fastest growth of online courses (Ashby, Sadera, & McNary, 2011). Early research on the difference in student achievement between online and traditional courses showed no significant difference (Lim, Kim, Chen, & Ryder, 2008; Bernard, Abrami, Lou, Borokhovski, Wade, Wozney, Wallet, Fiset, & Huang, 2004) or that the traditional courses led to higher student success (Carr, 2000). However, recent research indicates that success rates in online developmental courses are now higher than equivalent traditional courses (Ashby, Sadera, & McNary, 2011; Atchley, Wingenbach, & Akers, 2013). A large portion of the increase in online student achievement in developmental mathematics is the improvement of the course delivery systems such as MyMathLab from Pearson Education (González-Muñiz, Klingler, Moosai, & Raviv, 2012).

Hybrid models. A hybrid course delivery model combines traditional classroom instruction with online instruction (Kinney & Robertson, 2003). First, the instructor presents the material in mini-lectures, then the students have computer lab time to practice. The lab is staffed by either para-professionals or student tutors who have been trained by a faculty supervisor. Attendance is required at the lab so that the students receive a guided practice experience (Le et

al., 2011). Strengths of this model include accommodating various learning styles and allowing more individual contact between instructor and student (Kinney & Robertson, 2003).

Diverse options for completing developmental mathematics requirements would benefit all students, and I believe that nontraditional students in particular need these types of options because of the diversity of experience and life obligations they have.

Social Justice in Education

When discussing race, gender, and age in education we are truly talking about social justice. In this section I explore how issues of social justice in education are presented in the research literature. Many studies, particularly those that I will categorize as "quantification," focus narrowly on specific problems encountered by a group. In doing so, they often define an entire group of people by those problems. This is referred to as a *deficit perspective* (Anzul, Evans, King, & Tellier-Robinson, 2001; Battey & Franke, 2013; Troyna, 2016;) or *damaged-centered research* (Tuck, 2009). This type of study often focuses on isolated variables in controlled settings that have little resemblance to students' real-life educational experiences (Anzul, et al., 2001). Although it is important to document problems such as the underfunding of urban schools and differences in academic achievement, there is an insidious problem with emphasizing these negative facts to the exclusion of other aspects of people's lives: It leads to singularly defining a community as oppressed and inferior (Tuck, 2009). This occurs even when the intention of the researcher, policy maker, or classroom teacher is to bring about positive change. For example, Battey and Franke (2013) explain how a position of colorblindness (attempting to treat students as though there were no racial differences) actually perpetuates deficit views of students of color by "shutting down conversations on race rather than bringing them to the fore" (p. 434). My review of the literature on race, gender, and age in education led

me to want to avoid adopting a deficit perspective. More importantly, I wanted to avoid this perspective as I interviewed the women in my study.

Rather than focus on statistics, I attempt to present the “big picture” of race, gender, and age in education. This is a valuable viewpoint for my research on the developmental mathematics experiences of nontraditional Black females, because I am interested in their life stories as whole persons, where their sense of cultural situation is more important than splintered details such as test scores. In reflection of the volume of research, I devote significantly more space to the issue of race in education.

Race

The inequity in success rates between minority and White students is commonly referred to in the research literature as the *education achievement gap*, and it is an extensively discussed topic. The education achievement gap is defined and interpreted in various ways. I find that the research on the education achievement gap falls into three broad categories. The first category is research that attributes the disparity in success to empirically measurable factors such as students’ socio/economic status, the quality of materials and facilities, inequities in tax-based funding, and teacher qualification (e.g., Barnes & Slate, 2011; Darling-Hammond, 2004; Le et al., 2012; Ross & Kena, 2012). The second category is research that focuses on social justice issues, such as government and school policies that promote racism and classism (e.g., Basile & Lopez, 2015; Brayboy, Castagno, & Maughan, 2007; Fennimore, 2005; Gandara, 2010; Koyama & Cofield, 2003; Lindjord, 2000; Means, 2010). The third category is research that advocates changing the discourse from the academic achievement gap to one about long-standing, deep-rooted social injustice (e.g., Bass & Gerstl-Pepin, 2011; Chambers, 2009; Gutierrez, 2008; Ladson-Billings, 2006). For purposes of discussion, I refer to the research in these three groups as *quantification*,

social justice issues, and *change of discourse*. I do not limit the following discussion to developmental education alone because students' precollege educational experiences significantly affect their developmental experience, particularly by largely determining whether they will require any developmental coursework at all. Clearly, an understanding of the issues and obstacles faced by minorities, women and nontraditional students in their developmental mathematics courses is informed by the overarching themes of social justice.

Quantification. Researchers who focus on quantitative explanations and solutions for the education achievement gap tend to emphasize numerical data. When quantifying the education achievement gap these researchers often make very specific statements regarding a wide variety of factors that are evaluated for their contribution to explaining the problem or predicting a solution. This narrowing of the lens tends to lead to a deficit perspective, in which the community being studied becomes defined by the deficit that is the subject of the research. In this way the quantification overpowers and/or detracts from the social issue being addressed. Le (2012) attempted to quantify the difference between equity (relative gap) and adequacy (absolute gap) for mathematics achievement and social issues (race, poverty, and school resources). He reduced this relationship to statements such as "a one-point increase in mathematics proficiency was associated with a $21.73 increase in education spending" and "a one-point increase in mathematics proficiency was associated with a 1.97 percentage point increase in in-field teaching" (p. 69). Ross and Kena (2012) wrote an extensive (329-page) paper for the National Center for Education Statistics titled *Higher Education: Gaps in Access and Persistence Study*, which contained voluminous statistics, charts, and tables, even going so far as to quantify the percent of parents who check their children's homework.

Sometimes authors oversimplify an issue with a quantitative definition. For example, Barnes and Slate (2011) wanted to examine whether the achievement gaps between White, Black

and Hispanic students had changed. To answer this question they defined *college readiness* by scores on standardized tests and number of particular types of courses taken in high school.

On the other hand, some research uses quantitative arguments to make strong and valid points without sacrificing the humanity of the students being studied. Darling-Hammond (2004) and Kozol (1991, 2005) write passionately about the abysmal difference in the quality of facilities and teachers between poor minority schools and (often nearby) affluent White schools. They make their points with a litany of poignant statistics imbedded in the personal stories of real students. This eloquent use of statistics brings the real-life consequences of the achievement gap to light by discussing them in the context of the students' lives, rather than defining them by their deficits.

Social justice issues. Research that acknowledges the need to address social issues in order to reduce the education achievement gap tends to share the common strategy of establishing the existence of the gap (either by quoting statistics or by persuasive argument) and then presenting an aspect of social injustice that the researcher believes has been overlooked and could help in understanding and reducing the gap. This is by far the largest group, and can be further broken into two subgroups: focus on specific social issues, and focus on large-scale social issues.

Focus on specific social issues. Research that focuses on specific social issues uses arguments similar to the quantitative-oriented research, except that claims are supported primarily with logical arguments rather than with quantitative data. Examples include Lindjord (2000), who focuses on the need for high-quality child care as essential for narrowing the education achievement gap, and Gandara (2010), who argues that establishing a continuing net of community support for students is key for closing the achievement gap for Latinos. Although a deficit perspective is not as overpowering in these studies as it is in the quantitative-oriented ones, their narrow focus tends to keep the spotlight on the problem, not the people.

Focus on large-scale social issues. Articles that address large-scale social injustice factors tend to include broad statements about how these issues affect the education achievement gap. One example is meritocracy. Brayboy, Castagno and Maughan (2007) begin their discussion of social injustice by citing statistics on school funding, then generalize to large scale social injustice. "School systems rely on meritocracy, which is presumed to be an equalizing power, but when curriculum and assessment are grounded in Eurocentric knowledge paradigms and skills, students of color appear deficient" (p. 171). Fennimore (2005) describes classism combined with racism in the public schools, as evidenced by the abuse of open enrollment policies that "enabled school districts and privileged parents to defend inequitable opportunities when they were combined with the appearance of parental choice" (p. 1905).

Some scholars claim that the education achievement gap is the result of purposeful manipulation by government and corporate interests (e.g., Basile & Lopez, 2015; Koyama & Cofield, 2013; Means 2010). For example, in an analysis of 17 federal education policy briefs, Basile and Lopez found the perspectives presented were one-sided, "favoring the owners and operators of the STEM enterprise, while humanitarian statements to create equitable access… (for) Students of Color… were virtually nonexistent" (p. 540). Another example of government intervention causing harm that is discussed frequently in the literature is the *No Child Left Behind* (NCLB) policies put into practice under President George W. Bush. Koyama and Cofield (2013) state that because of NCLB, we now have "education officials and politicians justifying accountability in terms of global competiveness—often to reap personal benefit and political support" (p. 273). Means (2010) faults NCLB for privatizing education by funding education companies with money earmarked for public education. He states that "between 2001 and 2003 alone, the Department of Education diverted $78 million in tax dollars under the NCLB to conservative groups dedicated to promoting privatization" (p. 53). Articles that speak to large-

scale social injustice begin to move away from a deficit perspective by focusing on societal problems rather than community problems.

Change of discourse. The third major approach to conceptualizing the inequity between minority and White education success is the idea that the achievement gap is not the issue at all. Gutierrez (2008) argues that the phrase *education achievement gap* actually adds to the problem by giving validity to the gap, and sending a message to marginalized students that they are deficient and need to be viewed in relation to middle-to-upper-class Whites as the norm.

Ladson-Billings (2006) advocates replacing the phrase *education achievement gap* with *education debt*. "This all-out focus on the 'Achievement Gap' moves us toward short-term solutions that are unlikely to address the long-term underlying problem" (p. 4). She describes four lenses through which the education debt can be viewed: historical, economic, sociopolitical, and moral. Bass and Gerstl-Pepin (2011) share Ladson-Billings' (2006) view of there being an education debt. They further develop the idea by using the metaphor of bankruptcy as a way to move on from the debt. As is the case with personal bankruptcy, the debt must be acknowledged, and this acknowledgement requires "valuing and supporting children and their families through education policy that supports equity" (p. 908).

Another alternative to the phrase *education achievement gap* is proposed by Chambers (2009). She objects to the term because the "insinuation is White students are superior to and more special than Black students… (and) impl(ies) the problem lies with Black… students' ability to achieve" (p. 418). Rather than there being an education achievement gap, Chambers (2009) says there is a *receivement gap*. The receivement gap focuses the problem on the input (what students receive in their educational experience) rather than the output (their scores on standardized tests).

The authors of articles that seek to change the discourse away from the achievement gap are taking the extra step of walking against the moving sidewalk of deeply imbedded societal

racism as explained by Tatum (1997). It is important to know facts about educational inequities and to be aware of specific social issues that impact education. We need to call out governmental and societal forces that perpetuate unfair policies and perceptions. However, if meaningful progress is to be made, we need to change our thinking about the fundamental educational rights of all citizens and how we interpret their educational experiences. A White, Eurocentric standard is not appropriate for all students (Basile & Lopez, 2015; Bass and Gerstl-Pepin, 2011; Chambers, 2009; Gutierrez, 2008; Koyama & Cofield, 2013; Means, 2010; Ladson-Billings, 2006). I align myself with this perspective and will interpret the stories told by the women in my study in this light.

Gender

Compared to males, females have greater math anxiety, lose interest in mathematics at a younger age, and are less likely to pursue college majors and careers that rely heavily upon mathematics (Frenzel, Goetz, Pekrun, & Watt,2010; Ganley & Lubienski, 2016; Hill, Mammarella, Devine, Caviola, Passolunghi, & Szucs, 2015; Shaffer, Marx, & Prislin, 2013; Smeding, 2012). Mathematics is even more intimidating for females taking developmental mathematics courses, since their inner fears seem to have been validating by the school telling them they are not ready for college mathematics (Donovan & Wheland, 2008).The disparity in perceived mathematics ability between boys and girls begins in elementary school (Frenzel et al., 2010; Ganley & Lubienski, 2016) and is so deeply ingrained that evidence to the contrary based on performance does not change the self-beliefs of young girls (OECD, 2015).

Riegle-Crumb and Humphries (2012) describe how gender operates at three different levels: “the level of individuals (who internalize gender socialization processes), the interactional level, where men and women confront different cultural expectations, and the more macro level

of social institutions" (p. 292). At each of these levels, females in developmental mathematics are made to feel inferior, yet, despite this, they outperform males (Donovan & Wheland, 2008).

In the developmental classroom we can address the interactional level directly. One way to do this is by "providing women with information about their group's success and progress in STEM-related fields… (which) allows women to see a more comprehensive picture of their standing in this domain" (Shaffer et al., 2013, p. 456).

Women experience the world very differently from the way that men do. "The study of identity formation in women (is) fraught with ambiguity and frustration… women… orient themselves in more complicated ways, balancing many involvements and aspirations, with connections to others paramount" (Josselson, 1987, p. 8). Beauvior (1949/1957) wrote

> If I want to define myself, I first have to say "I am a woman"… A man never begins by positing himself as an individual of a certain sex… I used to get annoyed in abstract discussions to hear men tell me: "you think such and such a thing because you're a woman"… it was out of the question to answer "and you think the contrary because you are a man," because it is understood that being a man is not a particularity (p. xv)

The male reference point is indicative of the pervasive nature of power, in this instance between men and women. "Power is everywhere, not because it embraces everything, but because it comes from everywhere" (Foucault, 1976/1990, p. 93). Postmodern feminism is concerned with "power/knowledge relationships, in damage done by master-narratives, and in the way institutional structures are controlled" (Wallin, 2001, p. 28). Adopting this perspective toward teacher–student interactions in developmental mathematics (and acting on it) could be a positive step toward helping the women in those classes feel more comfortable and capable.

Age

Nontraditional students are usually defined as being in their mid-20s or older, and having had at least 3years of separation from formal study (Aagard, Andtunez, & Sand, 2015; Francois, 2014). Kenner and Weinerman (2011) characterize nontraditional students as primarily falling into one of three categories: workers who have lost their jobs and need to be retrained, veterans transitioning into civilian life, and adults who have just completed their GED and seek to improve their lives through higher education. The women who participated in my study were at least 35 years old, so the distinctions between them and traditional students will be more pronounced (Aagard, Antunez, & Sand, 2015; Schaefer, 2010). In the following sections I outline several factors that contribute to the uniqueness of nontraditional students.

Self-concept. Adult learners view themselves as independent and self-directing with well-defined goals (Baptista, 2011; Merriam & Bierema, 2014). They resent being put in a position where they must relinquish that independence and self-direction by taking a course they do not want to take, and therefore they resist the teacher's efforts to help them learn (Hekimoglu & Kittrell, 2010; Jaafar, 2015). According to Smith and Taylor (2010), a person's ego[3] continues to develop throughout adulthood. There is an ongoing development of "a sense of self in relation to the surrounding social context of which one is a part in order to become a well-adjusted, effectively functioning individual" (p. 51).

Several studies present results related to the self-concept of nontraditional students that have significant implications for my study. Older developmental mathematics students in particular have self-concept issues in regard to their abilities in mathematics, and this contributes to their lower rates of persistence (Bragg & Durham, 2012; Hall & Ponton, 2005). Self-concept issues, which often arise as math anxiety, are more severe among females (Ganley & Lubienski,

[3]*Self-concept* replaced the term *ego* in much of the literature during the 1990s (Dewey, 2007).

2015; Hill, Mammarella, Devine, Caviola, Passolunghi, & Szucs, 2015). Also, among Blacks, self-efficacy in regard to their mathematics ability remains high, even after low achievement (Fong, Zientek, Yetkiner, & Phelps, 2015). These results illustrate the complexity of being an older nontraditional Black female student.

Life experiences. The life experiences of nontraditional students are markedly different from those of traditional students, so they approach their studies from a different point of view (Baptista, 2011). They have different motivations and needs for support, along with different expectations from the college (Schaefer, 2010). Their daily life is often dominated by non-school-related circumstances such as working full time and being a parent (Pelletier, 2010). Adults who have been in the military or the work force are often embarrassed at having to take developmental courses, and are frightened or feel disdain toward them (Bachman, 2013).

Besides being indicators of maturity, motivation, and work ethic, nontraditional students' life experiences can present a challenge to learning. Adults have developed "mental habits, biases, and presuppositions that tend to cause (them) to close (their) minds to new ideas, fresh perceptions, and alternative ways of thinking" (Knowles, Holton, & Swanson, 1998, p. 66). In order to overcome this obstacle, Boucouvalas and Lawrence (2010) recommend that teachers of nontraditional students create ways to get them to examine their life experiences in light of the new insights or procedures presented in the course. "As educators, we can create structured shared experiences… In this way… we co-create knowledge" (p. 39).

Motivation. Before committing their efforts to learning something, adults need to know *why* they need to learn it (Knowles et al., 1998). "Because it will be on the test" is not an acceptable reason. Nor is being required to take a course based on a placement test. They may do their best to pass the course, but without an understanding of why they need to know this material *in their real life*, it will be done under duress, with resentment and a deeper dislike of mathematics (Hekimoglu & Kittrell, 2010; Jaafar, 2015).

Motivations for adults to return to the classroom are commonly classified as intrinsic (learning for personal enrichment) or extrinsic (learning to reach a goal, such as a new career) (e.g., Kennedy & Vaughn, 2004; Parks, Evans, & Getch, 2013; Scala, 1996; Scheafer, 2010). Wlodkowski (1985) instead considers motivation of adult students to be developmental, and identifies six motivational factors that are manifested over time. He says that the learning sequence, whether it involves a single lesson or spans an entire semester, has beginning, during and ending phases. At the beginning of learning, *attitudes* and *needs* are the primary motivators; during learning, *stimulation* and *affect* become most important; and after the learning has been completed, *competence* and *reinforcement* motivate students to continue learning.

Recognizing and understanding the differences between nontraditional and traditional students is important not only for my study, but also for program and curriculum design in developmental mathematics (as well as all other fields of college study). The life experiences, self-concept and motivation of older students are very complex. In the context of my study, they are further complicated by issues of race and gender. In the next section I address this interconnectivity through the lens of Intersectionality.

Intersectionality

Scholars have long acknowledged the multiplicity of personal identity, such as W. E. B. DuBois' (1903) *double consciousness* of being both an "American and a Negro." The term *intersectionality* was first used by Kimberlė Crenshaw (1989) in her legal analysis of the confounding factors of race and gender. She argued that being a member of multiple oppressed groups is not additive, but rather that there is a confounding factor involved that must be accounted for. "Any analysis that does not take intersectionality into account cannot sufficiently address the particular manner in which Black women are subordinated" (p. 140). Further, it is

sometimes the case that focusing on the special interests of a single group can exacerbate the plight of someone who is also a member of a second oppressed group. Because of this, intersectionality acknowledges counteraction as well as interaction.

Women's Studies departments at universities were a natural place for the development of the theory of intersectionality because of their interdisciplinary approach and their orientation toward social issues (Weber, 1998). Besides Crenshaw's (1989) original emphasis on gender and race, it is now common for class and sexuality to be included in discussions of intersectionality. Weber (1998) notes that race, class, gender, and sexuality are simultaneously expressed in all social institutions, and Anderson and Hill Collins (2001) state further that they are the "foundation for systems of power and inequality that, despite our nation's diversity, continue to be among the most significant social facts of people's lives" (p. 1). Therefore it is important to understand how race, gender, class, sexuality (and age, I might add) interact with each other, rather than focusing on single aspects of peoples' identities.

Intersectionality allows us to address the fact there is no single identity category that adequately describes our social interactions (Shields, 2008). Using the concept of intersectionality, we are able to "explore and unpack relations of domination and subordination, privilege, and agency" (Dill & Zanbrana, 2009, p. 5). However, intersectionality does not deal solely with dichotomies. Weber (2010) says that intersectionality "encompasses a vast and complex array of human interactions and human responses that defy simple dichotomies. Awareness of these complexities is critical to understanding the ramifications of race, class, gender and sexuality in our lives" (p. 10). Some of the benefits of using an intersectionality lens include recognizing limiting views of others, recognizing the oppressor within (internalized oppression), recognizing the costs of dominance, gaining a realistic assessment of our environment, achieving good mental health, and the fact that when society improves, we all gain (Weber, 2010).

There is a distinction between multiple identity theory and intersectionality. Identity theory focuses on the individual (Jones & Abes, 2013), whereas intersectionality focuses on "a macrolevel analysis that ties individual experience to a person's membership in social groups" (Wijeyesinghe & Jones, 2014, p. 11). Jones and Abes (2013) emphasize that while the starting point of intersectional analysis is personal experience and multiple identities, intersectionality intends to "more accurately and completely describe the lived experiences of marginalized groups, intersectionality is not *only* about identity" (p. 141, italics in original).

Researchers are cautioned not to push intersectionality to the point of including every distinguishing facet of peoples' lives because it can lead to the unintended consequence of smoothing over the significant differences that it seeks to emphasize (Luft, 2009). The opposite extreme from examining every small detail is ignoring (or attempting to ignore) the significance of racial, sexual, gender, and other differences. An example of this is colorblindness, which "presumes to level all significant racial and ethnic differences in order to pass judgment on intergroup conflicts" (Crenshaw, 1993, p. 1288).

In my study I focus on the intersectionality of race, gender, and age in the arena of developmental mathematics courses. The lens of intersectionality helps me to understand that although the bodies of literature on each of these areas inform my study, none of them adequately define my study (and certainly they do not define the women I interviewed). I recognize that the viewpoint of a Black woman who is a nontraditional student is not simply a subset or special case of a Black viewpoint, a female viewpoint, or a nontraditional student viewpoint.

Social Class

Although social class is not a distinct part of my theoretical framework, some comments are appropriate here because race, gender and age are nuanced by social class. Social class is a

very complex issue which can be viewed through many lenses, but ultimately it is about power (Aronowitz, 2003; Nesbit, 2005b). Although the hierarchy of class distinctions is based on power, there are other factors that contribute to class. According to Nesbit (2006) Bourdieu considers classes to be groups of people with a common characteristic who have similar capital—whether that capital be cultural, economic, social, or symbolic.

Rather than being an attribute of an individual, class describes a structural relationship where people are assigned to groups based on power and privilege, or lack thereof (Nesbit & Wilson, 2010). In a capitalistic society, the mechanism for perpetuating power is hegemony (Custers, 1999). Hegemony is the method of consensus building among the general population to ensure continued acceptance of the policies of the ruling class, and is therefore a form of power. The most prevalent mechanism for perpetuating the power of the ruling class through hegemony is public education, including adult basic education and adult continuing education.

There is a hidden agenda in public education which teaches students what their role in society is to be, and systematically channels poor and minority students into service roles while preparing White upper and middle-class students for management and leadership roles. The educational system is designed to perpetuate the existing power structure, not dismantle it. Therefore, educational opportunity is largely determined by class (Apple, 2006; Nesbit, 2005a). In adult education, Adult Basic Education and Adult Continuing Education programs perpetuate class distinction because they are viewed as a government service for the poor that helps them to contribute to capitalism through blue collar and lower paid white-collar jobs (Nesbit, 2005b). In developmental mathematics courses there is a severe class distinction. The students taking these courses have been labeled deficient and will not be allowed to pursue their education if they do not remove the deficiency. This puts them in a powerless and vulnerable position.

It is important for adult educators to understand the complexities of class. Nesbit (2005b) says a class perspective "draws clear links between educational institutions, the world of work,

and the economic system that underpins them... highlighting how educational institutions function to maintain and inculcate societal ideology and values" (p. 84). Adult educators must be aware of this function of educational institutions, and be willing to challenge it. Nesbit (2005b) says that for many adult educators facing this issue is "overwhelming." Developmental mathematics courses clearly contribute to assigning the students who take them to a lower class of student (and citizen). One way that I fight against this is to frame the purpose of developmental mathematics courses as teaching the students how to learn mathematics for their future college level courses, rather than focusing on the pre-college content. This change in perspective can serve to legitimize the developmental course in the eyes of the adult learner because they are not simply repeating high school mathematics; they are learning mathematics from a college-level perspective.

hooks (2000) describes how class is tied to race and gender. While race and gender are binary, class is multi-leveled and cuts across race and gender. Poor Whites are socially conditioned to identify with middle and upper-class Whites rather than poor Blacks, and affluent Blacks are viewed as not belonging in upper-class neighborhoods. The early feminist movement was championed by affluent White women who wanted to have the power that they saw in men from their own social class. Focusing on racial and gender solidarity obscures class, which is indicative of the counteractive nature of intersectionality in that focusing on one problem exacerbates the other (Crenshaw, 1989). Following the thinking of Bourdieu that groups of people with common characteristics form a class, it could be argued that I have created a class by examining the intersectionality of race, gender and age.

As will be seen in the findings (Chapter 7), in my study the effect of class on the life and educational experiences of the women is overshadowed by race, gender and age. This is in part because the sample size for my study was three women who happen to all be in the same social class. In addition, I am focusing on the women as unique individuals, and issues of class deal

with group dynamics rather than individual attributes (Nesbit, 2010). Each woman talked about herself in terms of race, gender, and age but not in terms of class.

Chapter 3

Research Design

All research of human behavior has the same basic objective: to better understand how we relate to the world we live in, both as individuals and within social groups. The various analytic approaches employed by researchers are diverse lenses employed to best suit their interest in describing, explaining or predicting aspects of some phenomenon. The researcher must consider the strengths and limitations of different approaches before selecting one that meshes with their research interest and personal beliefs about their role as a researcher. It is the researcher's beliefs about their role in the study that makes one analytic approach the best among many good ones. Baptiste (2001) wrote “It is in defining our roles as analysts that the entire analysis, itself, is defined" (p. 6). I believe that my role in this study is to listen to the individual women I interview as they relate their life and educational experiences, and to present those stories in a cohesive fashion.

The most appropriate research design for my study depends on my *research interest* (why I was interested in this study), along with my *research purpose* (what I planned to study and how I planned to study it) (Baptiste, 2016a). My research interest was described in chapter 1. My research purpose is described in my research questions:

1. How do the precollege life stories of individual Black women who enter college as nontraditional students shape their attitudes toward mathematics and their expectations of success or failure in developmental mathematics?
    a. What stories do individual Black women choose to tell about their precollege educational experiences?

   b. What stories do individual Black women choose to tell about their precollege life experiences?

2. How do individual Black women who enter college as nontraditional students perceive their experiences in developmental mathematics courses?
   a. What stories do individual Black women choose to tell about their developmental mathematics experiences?
   b. What perception of success or failure do individual Black women who enter college as nontraditional students have about their experiences in developmental mathematics?
   c. Based on their experiences, what recommendations do these women make for change in the developmental mathematics program?

I have chosen narrative inquiry as my analytic approach. In the following sections I will describe the theoretical underpinnings of narrative inquiry, and justify my use of particular methods within narrative inquiry. Finally I will describe the data collection and analysis methods I employed.

The Theoretical Underpinnings of Narrative Inquiry

Narrative inquiry is a research methodology that can be utilized by researchers employing many different theoretical lenses. Casey (1995) says, "Every study of narrative is based on a particular understanding of the speaker's self" (p. 213) and is therefore influenced by theoretical understandings of self. Connelly and Clandinin (1990) talk about the collaborative relationship between theorists and practitioners. Polkinghorne (1995) takes this a step further by emphasizing not only how theory influences the interpretation and analysis of narrative data but also how theory influences the analytic *process* itself.

I believe that understanding theory is essential to good practice. Theory and practice inform each other; theory gives direction to practice and practice leads to refinement of theory. In an interview with Michel Foucault, Gilles Deleuze (1977) asserts “practice is a set of relays from one theoretical point to another, and theory is relay from one practice to another” (p. 206). Kim (2016) points out that because narrative inquiry does not exist in a vacuum, theory helps us do a better job of telling the story. "We cannot make sense of stories told without the help of a theory or the intersection of multiple theories" (p. 76). Prominent authors in the field of narrative inquiry trace its theoretical roots to a diverse set of social theorists. In this section, I will highlight the thoughts of several authors whose work provided much of the theoretical foundation for narrative inquiry.

Historical Influences.

John Dewey is referenced frequently by authors tracing the origin of narrative inquiry, particularly his emphasis on the importance of experience (e.g. Atkinson, 2007; Bach, 2007; Clandinin & Connelly, 2000; Clandinin & Rosiek, 2007; Craig & Huber, 2007; Elbaz-Luwisch, 2007; Kim, 2016; Mello, 2007). Clandinin and Connelly (2000) talk about *tension at the boundaries* between the grand narrative (the idea that there can be a comprehensive explanation of historical experience and knowledge) and narrative thinking, which they note comes from Dewey’s two inseparable criteria of experience: continuity and interaction. The continuity of experience refers to his premise that every experience is built upon previous experiences. The interaction of experience is based on his claim that “all human experience is ultimately social... it involves contact and communication” (Dewey, 1938b/2015, p. 38). Bach (2007) talks about three dimensions of narrative inquiry: temporal, sociality, and place, crediting Dewey for her insight

into the dimension of place. Webster and Mertova (2007) contend that "narrative, in Dewey's view, gives us an avenue into human consciousness" (p. 16).

Polkinghorne (1988) devotes a large portion of his book to theoretical contributions to narrative inquiry. He finds foundations for narrative inquiry as far back as Dilthey (1883) and Weber (1949). Dilthy (1883) described the subjective nature of human experience with what he called "understanding an action" (as cited in Polkinghorne, 1988, p. 39). Max Weber (1949) also spoke of the subjectivity of human experience, but he emphasized a value-free dualism with rationally valid information on one hand, and "personal decision pertaining to private world-orientations of personal choice" (as cited in Polkinghorne, 1988, p. 41). These ideas ran in direct opposition to positivism, and opened the door to the largely subjective process of narrative inquiry.

Narrative inquiry's focus on words rather than numbers as data can be understood from a Foucauldian perspective. Assigning numbers to human experience is restricting, and according to Foucault, attempting to restrict a particular type of discourse actually leads to an increase in that discourse, rather than a decrease (Pinnegar & Daynes, 2007). Foucault (1976/1990) asserts that power does not exist without resistance, and the interplay between power and resistance is not always conscious. Kim (2016) also emphasizes the influence of multiple power relations, noting "Narrative is embedded in discourse, power and history" (p. 66).

A common theme in theoretical discussions of narrative inquiry is the contrast between the grand narrative and narrative knowing. In fact, Lyotard (1984) defines postmodernism as "incredulity toward metanarratives" (p.xxiv). He argues that knowledge is not totally defined by science; it is also as narrative, which is often at odds with scientific knowledge. He does not give primacy to either type of knowledge, but asserts that narrative knowledge allows for "internal equilibrium and conviviality" (p. 7). Other authors also describe this conflict. Clinch (2003) writes about Perry's (1970) contextual relativism, which asserts that rather than believing there is

always a unique right answer, or accepting all opinions as equally valid, we should use a variety of perspectives to make critical decisions. Polkinghorne (1988) discusses Bruner's (1986) two modes of cognitive functioning: paradigmatic, which is based on logic and science with an assumption of universal truth, and narrative, which emphasizes connections between events. Clandinin and Connelly (2000) describe Schön's (1983) idea of an *epistemology of practice,* which says that the narrative story can legitimize professional practice, thus uniting theory and practice.

Narrative Inquiry in Practice as My Analytic Approach

Narrative inquiry appeals to my research interest because it "does not fragment the text into discrete content categories for coding purposes but, instead, identifies longer stretches of talk… a discourse organized around time and consequential events" (Reissman, 1990, p. 1195). Wertz, Charmaz, McMullen, Josselson, and McSpadden (2001) note that narrative inquiry "works with detailed stories drawn in some way from participants, stories that reveal how people view and understand their lives" (p.225). I had been moved by stories told to me by individual students, and I wanted to hear more stories from Black female nontraditional students told completely and in context—a *life story* of their experiences. A life story is powerful because it contains both individual and cultural meanings (Lieblich, Tuval-Mashiach, & Zilber, 1998).

This dual nature of narrative inquiry, interpreting both individual and cultural group experiences, allows for both types of interpretation from the same set of interviews (Atkinson, 2007). Ruthellen Josselson aptly quotes Kluckhorn and Murray (1953): "Each person is like all other people, like some other people, and like no other people" (Wertz et al., 2011, p. 316).

Narrative inquiry recognizes that there is a difference between the constructed history told by an interviewee and a history based on observed facts. The narrative approach is more

concerned with what the story means to the teller (Wertz et al., 2011). I had read countless statistical descriptions of Blacks, women and nontraditional students, but I was not interested in lifeless statistics that are often based on a deficit perspective (Anzul et al., 2001; Battey & Franke, 2015). In my study, I wanted to know what their experiences meant to the women I interviewed, not the meanings imposed on them by other researchers or government agencies. I wanted to counter the dehumanizing effect of reducing them to "facts" and "statistics" through a deficit perspective. People understand their life experiences through their emotions, not through a listing of facts (Bold, 2012).

Narrative approaches can lead to a type of inference. Besides helping them to make sense of their own life experiences, insights gained from the stories told by these women can generate ideas as to how I as an individual teacher, and schools as institutions, can better serve their academic and personal needs. Through narrative inquiry, we can "generate knowledge that, over time, becomes the basis for others' work" (Reissman, 2008, p. 13). This is exactly how I visualize my research, both for my dissertation, and as I continue my career in education. I am convinced that the best first step toward understanding and taking action to improve how we serve these women in their college studies is to *listen* to them.

Lessons from Black Feminist Researchers

As I explained in chapter 1, I am very sensitive to my position as a White male researcher working with Black female participants. Although there is no uniform, well-defined group called *Black women* (Johnson-Bailey, 1999), there are pervasive negative social stereotypes of Black women. Mullings (2000) says that these stereotypes, such as being "promiscuous, dependent welfare recipients, and inadequate mothers" (p. 20) define Black women in dehumanizing ways. Few, Stephens and Rouse-Arnett (2003) discuss how the experiences Black women and their

families have been “misrepresented, misappropriated, and/or misconstructed” (p. 205) by the research community, including focusing on nonrepresentative samples and making inappropriate comparisons to a White standard. In addition to negative stereotyping, Black women have had to bear an inordinate burden of family, financial, and community responsibilities (Coker, 2003; Johnson-Bailey, 1999; Mullings, 2000). Jean, a 53-year-old Black college student being interviewed by Johnson-Bailey (1999), stated this poignantly:

> I do feel that the Black woman is strong because of the trials and times that we have had to endure over time and ages. And to be accepted we’ve got to work twice as hard. Time has brought on its share of pain, endurance, and just the need to survive (p. 662)

Higher education, an arena that is supposed to offer opportunities for people to break free from oppression, is no safe haven from stereotypes. Coker (2003) notes that nontraditional Black women face “perceptions and stereotypes (that) often obstruct an individual's journey toward intellectual, personal, financial, and political power—all the things education is meant to help an individual achieve” (p. 658).

The theoretical framework of Black Feminism is well suited for studies that involve Black women (Coker, 2003; Few, Stephens, & Rouse-Arnett, 2003; Mullings, 2000). Although the term *intersectionality* is not used by all Black feminist writers, they do all acknowledge that Black women experience racism and sexism differently from Black men and White women (e.g., Coker, 2003; Crenshaw, 1989; Weber, 2010). Black feminist research must be collaborative, with the focus on the everyday lives of Black women. This collaboration means more than just “giving voice” to their experiences; it means confronting the power structures of class, race, and gender, and it must be geared toward change (Mullings, 2009). In Black feminist research, Black women are empowered to speak for themselves, rather than being spoken *to* or *about* (Few, Stephens, & Rouse-Arnett, 2003).

Black female researchers working with Black women caution *each other* to not assume that they will automatically be allowed into the interviewee's circle of trust, to carefully monitor their position in the power relationship, to be attentive to language that acts as a social-status marker, and to care for the people they are interviewing (Few, Stephens, & Rouse-Arnett, 2003). This caused me to reflect on how much more careful and attentive I needed to be with the women I interviewed.

Narrative Methods

Riessman (2008) distinguishes between three methodological approaches for narrative work: Structural Analysis (e.g., Labov's Structural Model and Gee's Poetics), Thematic Analysis, and Dialogic/Performance Analysis. Labov's and Gee's structural models both focus on detailed analysis of clauses. Labov is concerned with the frequency and distribution of the various functional clauses, while Gee emphasizes the linguistics and structures of speech (Baptiste, 2016b). Although these are valid approaches to narrative research, they simply fall outside of my interest; I want to hear and relate the life and educational stories the women have to tell, not analyze how they speak.

In thematic analysis, content is the exclusive focus (Riessman, 2008). There is little emphasis on context or the interactions between interviewer and interviewee. This approach would be relatively easy for me to apply because of my background in quantitative research, where the researcher is (theoretically) an objective observer. However, in reality, I cannot objectively listen to the stories told by Black women about their developmental mathematics experiences, nor can they tell them to me objectively. My life experiences and my position as a White male mathematics professor cannot be ignored. I would be wise to heed the words of Andrews (2007) "If we wish to access the frameworks of meaning for others, we must be willing

and able to imagine a world other than the one we know" (p. 489). There must be an open dialog between me as the interviewer, and the women as interviewees. I need to develop a relationship of trust with them before I can expect them to tell me the true stories of their experiences, so thematic analysis is not a realistic approach for my research.

Riessman (2008) presents an alternative to structural and thematic methods. The dialogic/performance analysis approach is "a broad and varied interpretive approach to oral narrative that… interrogates how talk among speakers is interactively (dialogically) produced and performed as narrative" (p. 105). The dialogic/performance analysis approach is concerned with to *whom* an utterance is spoken, *when* it is spoken, and *why* it is spoken. Who, when, and why are therefore the overarching and embedded questions of dialogic/performance analysis, and must be kept in mind throughout all of the phases of the approach. The dialogic/performance analysis approach is the narrative method I have chosen for my study. I will discuss it in greater detail when I describe my data analysis methods.

Data Collection and Analysis

The data was collected through interviews. I originally recruited six women for the study; two who had completed their degrees, two who were current students, and two who had left school without completing their degrees. One of the women delayed her interview due to a family crisis and finally withdrew from the study. Two of the women who participated in first interviews could not be reached by phone, e-mail, or regular mail, so I removed them from the study. Of the three women who completed the study, one earned a degree, one is currently enrolled, and one completed a certificate, but was dismissed from school for poor grades before completing her degree. Each of these three women participated in two or three interviews, each

of which lasted an hour. The interviews were recorded and transcribed, then I analyzed the data using the framework of Reissman's (2008) dialogic/performance analysis.

Data Collection

The interview process had two phases. In Phase 1, I collected the stories that the women had to tell. In Phase 2 I did a member check on the stories that they shared in Phase 1. Also, as a validation tool, I asked for their response to general themes that I observed in the Phase 1 interviews (e.g., *orientation classes are needed for nontraditional students*). I constructed an interview protocol (see appendix A) containing the exact script of what I would say during each interview.

Critical incident technique. For phase one I drew upon the *critical incident technique* (CIT). CIT is a flexible and adaptable research tool that is useful for eliciting people's thoughts, feelings, beliefs, opinions, reasons for their actions, and suggestions for change (Brookfield, 1990; Butterfield, Borgen, Amundson, & Maglio, 2005; Cheek, O'Brien, Ballantyne & Pincombe, 1997; Ellinger & Bostrom, 2002). There are three aspects of a critical incident: (a) a description of what led up to it, (b) details of the incident, and (c) the outcome of the incident (Butterfield, Borgen, Amundson, & Maglio, 2005). Brookfield (1990) describes persons' critical incidents as "brief descriptions... of significant events in their lives" (p. 179). In this study I broadened the emphasis from *events* or *incidents*, which imply a very short time frame, to *experiences*, which can either be brief or ongoing. The reason for this is that my interest is in understanding the life and educational experiences that have shaped the unique individuals I am interviewing, and many of those experiences cover a long period of time, for example, growing up in a dysfunctional family. In further discussion I will refer to *critical experiences* rather than critical incidents.

What constitutes a critical experience is strictly personal. Critical experiences cannot always be classified as strictly positive or negative. They may have both positive and negative aspects, or change in their nature, such as when someone turns hardship into opportunity. I chose two stories from my own life to share with the women as examples of critical experiences; one from my childhood, and one from my professional experience (see appendix A, p. 1). I chose these experiences because they illustrate the interplay of positive and negative in our life experiences, and because their effect on my attitudes and beliefs could be made apparent. I also chose them as a way to share my humanity with the women, in the hope that it would make them more comfortable sharing their personal stories with me. I read these two stories to the women, modeling the key components of critical experiences: details of the experience, what led up to the experience, and the outcome of the experience, including how it affected my attitudes and beliefs.

Phase 1 interview protocol. Before beginning the interviews I gave the women being interviewed a copy of the IRB consent-for-research form and read it aloud. This provided them with details about the purpose of the study, as well as their rights as participants. I then explained the idea of critical experiences and shared two of my own critical experiences. I wanted to avoid leading the women in any direction, so I kept the wording of my questions as neutral as possible. I asked for them to share their first critical experience with these words:

> *First, would you please reflect on your precollege experiences that stand out for you? These experiences could be based on your home life as a child, your school life from elementary through high school, or your post high school experiences. To begin with, please describe acritical experience from your elementary, middle school or high school years.*

Subsequent questions asked for critical experiences related to their decision to attend Central College, and their experiences while attending Central College, particularly in developmental mathematics. As the women related their critical experiences I asked questions for clarification

of the three aspects of critical experiences, as well as insights into their thoughts, feelings, beliefs, opinions, and reasons for their actions. These questions focused on the *who, what, when, where,* and *why* of the critical experience. I consciously avoided pitfalls such as leading or directing their stories, suggesting reasons for their actions, interjecting my own thoughts, and using language that implied valuation or judgment of their statements. After each critical experience they shared, I asked the women if they had another one that they would like to share.

After they had shared their Central College critical experiences I changed the tone of my questions. I said "*Please describe how your developmental mathematics experiences have* ***positively*** *impacted your life,"* followed by *"Now, please describe how your developmental mathematics experiences have* ***negatively*** *impacted your life,"* then finally "*Overall, would you consider your developmental mathematics experiences successful? Why or why not?"* The reason for this change in wording is that the questions being asked about the impact of developmental mathematics courses on their lives were not eliciting critical incidents, but rather were aimed at capturing a holistic picture of their developmental mathematics experience. I was specifically asking for positive and negative experiences here to put them in the mindset of considering their developmental mathematics experiences as successful or nonsuccessful (as they personally define *success*). Phase 1was completed for all of the women in one interview.

Phase 2 interview protocol. Phase two had multiple components (see appendix A, pp. 5–6). First I presented the women with an outline of the critical experiences that they had shared in the first interview. I asked them if it was accurate and if there was anything they wanted to add. This member check provided validation of data gathered in the first interview. After that I gave them a copy of their transcript with each of their developmental mathematics courses highlighted. I asked them to reflect on those courses and describe their feelings as they entered the course, along with any details about the course that came to mind. Next I shared Figure 1 (see p. 12) with them and again explained the purpose of my study. I left the sheet showing Figure 1

on the table so they could see it as we progressed through the interview. I then gave them a page that listed themes I had discovered in the first interviews with the women (see appendix B). Some of the themes were personal *"I found myself being rejected by members of the Black community who said I was 'becoming White' due to my education."* and others were suggestions for the college *"A course or seminar needs to be provided for older nontraditional students before they start classes to help them get accustomed to the technology, particularly the graphing calculator."* Some of the themes were contradictory. One woman had said *"Age, rather than race or gender, was the biggest difference I saw between myself and other students,"* whereas another said *"Race and gender were significant for me. Some of these people acted like they had never seen a Black woman before."* After they finished with their comments on the themes I presented five possible configurations of a MTH 005 (Algebra I) course and asked them which of them they would feel most comfortable taking if they were to be starting school now (see appendix C). The five options were a traditional course, an online course, a hybrid course, an experimental course based on a single complex application with solutions being generated by the graphing calculator, and a quantitative reasoning course that presents real-life applications from a variety of fields. Finally I asked if they had anything else they would like to say, or if they had any advice for me related to my study. I thanked them and that concluded the interview.

Data Analysis

Data analysis was performed using the framework of Reissman's (2008) dialogic/performance analysis approach. Baptiste (2016b) identified five phases within dialogic/performance analysis. When presenting these phases he emphasized that he was distinguishing between *phases* and *stages*. He used the word *stage* to indicate a strictly sequential process where one goes from one stage to the next and does not return to the previous stage. In

contrast, he used the word *phase* to indicate a fluid, possibly cyclic process, with overlap being possible. It is important to keep this distinction in mind as I describe the phases of Reissman's (2008) dialogic/performance analysis approach as described by Baptiste (2016c).

Phase 1: Selecting the narrative segment. The narrative segment should be a story in and of itself. It may be a paragraph or several pages long. The goal is to capture a single story, which can then be broken into dramatic segments. Determining when one story ends and another begins can present a challenge, because the interviewee may refer back to previous stories, or jump ahead to a topic to be discussed later. A good guideline is to select the shortest passage that can stand alone.

When identifying the narrative segments I began with the raw transcript, reading it as I listened to the recording. As I did this, I made mental notes of repeated topics which held varying degrees of detail for the stories being told. I then reread the transcript, and selected full stories (critical experiences). I grouped critical experiences with related topics into themes. I gave each theme a title, which I wrote in a new document in bold red, and copied the corresponding critical experiences in their entirety. I put the page number from the original document in parentheses after the critical experience so that I could go back to look at and/or listen to the original. I went through the entire document, placing each critical experience under a theme. In each of the women's narratives I found that major themes had multiple critical experiences, and that a critical experience told early in the narrative would often be revisited later. Appendix D shows two pages from one of the narrative segment documents. Note how the pages referenced begin sequential, then jump around. This illustrates how the same theme was often revisited with multiple critical experiences.

Phase 2: Identify dramatic segments. In my study, the dramatic segments were the critical experiences. The critical experiences were not always shared in a cohesive fashion, instead they sometimes developed across multiple tellings. When this happened, identifying the

dramatic segments required moving back and forth between phase one and phase three. I looked at related topical stories under the themes identified in phase one, then constructed individual critical experiences by identifying the three aspects of the critical experience (this is Phase 3: identifying scenes). This fluid movement between Phases 1, 2, and 3 illustrates Baptiste's (2016c) point about phases not being rigid or strictly sequential.

Phase 3: Identify scenes. The goal in this phase is to identify scenes within the dramatic segments, using criteria such as shifts in time, place, setting, character, or topic. Because the critical experiences in my study are dramatic segments, the scenes are simply the three aspects of a critical experience: (a) a description of what led up to it, (b) details of the incident, and (c) the outcome of the incident. An example of how Phases 1, 2, and 3 interplayed can be seen in a critical experience related by Denise. When Denise was 12, her younger sister was severely burned in a kitchen accident. Denise related this critical experience in two separate tellings. In the first telling Denise said

> *We had to maintain our house with the oven and a stove with pellets for heat. At one point my brother and sister were there, and I think I went to the door. By the time I came back my sister was running and she was on flame, she was on fire. So, I had to grab her and throw something on her to put the fire out. Because of reading, I knew to do that. I think I was maybe 12 so, she was about 9. Yeah, I was 12, she was about 9and she might have been younger than that. She had third-degree burns. She stayed in the hospital for a long time. Yeah, at age 12 which you weren't allowed to go, and at that time but they didn't know I was 12, and I was able to live a lie to get in and go see her because I knew my mother wasn't going. I was still caring for my siblings that were home and she was at the hospital and she was at the hospital for months. That way it looked like family was visiting her so that they won't think that she was abandoned there.*

In this first telling Denise gives a little of what led up to the experience (they used a pellet stove), some of the details (she went to the door; her sister was on fire and she threw something on her) and the result (third-degree burns; Denise took the adult role of visiting her sister in the hospital). Later in the same interview Denise returned to the experience of her sister's burning injury.

> *My sister getting burnt, I felt like it was my fault because I wasn't tentative to them standing here at the stove like that. What my brother did was he took a spoon and he put it in the fire and so, when it got hot he did like that* [flicks her wrist]*, it hit her shirt and started. Not knowing to drop and roll, she ran, and when she ran I had grabbed something. But it was, it had already* [pauses] *Yeah, she had to get a skin graft, skin taken off her stomach and put on her arm.*

In this second telling Denise gives more of the details of what led up the incident (she wasn't attentive to them standing near the stove), more details of the incident (her brother was playing with a hot fork and flicked it onto his sister), and more details of the result (her sister had to get skin grafts).

Phase 4: Parse the dramatic segments into analytic components.

Dialogic/performance analysis does not have prescribed analytic components, but draws from other thematic and/or structural approaches. Because my objective is to tell the life and educational stories of these women in a holistic fashion, I did not parse the data beyond the components of the critical experiences. In this phase I organized the themes I had identified by first removing all of the narrative, then organizing the themes into an outline that sketched out the life and educational stories the women had to tell. This outline was used in Phase 2 of the interview protocol as a member check. Appendix E shows one these outlines. After organizing the themes into an outline I put the narratives back in place. I referred to these documents as the organized summaries.

Phase 5: Interpret the narrative. It can be said that interpretation is the true art of research, whether the approach is quantitative or qualitative. My job as a researcher in this study was to listen to the stories told by the women, then organize and interpret them in a meaningful way. The organized summaries described in Phase 4 were the documents I relied upon most for the interpretation phase, augmented by the original voice recordings and transcripts. At this point I began to organize the women's stories chronologically. I chose to do this rather present the stories thematically because of Reissman's (2008) assertion that the researcher is not the only interpreter of the narrative; the reader also interprets the narrative. I wanted the reader to experience the women's stories with as little interpretation from me as possible.

Converting the stories from a thematic organization to a coherent chronological narrative was an iterative process. As I organized the stories I reread the original transcripts numerous times, looking for supporting facts and connections between the experiences. I paid a professional service to transcribe the audio recordings, and they did a good job of rendering the speech into print. To make sure that I was correctly catching what the individual woman was saying in a particular critical experience I listened to the audio recording of each quote as I reviewed the wording in the transcript. As I did this, I often made changes in punctuation to better represent the flow of the statements.

The meaning of the stories that were told was not contained strictly in the women's narratives, but also in the dialog between them and me, and in the broader contexts beyond the interview (Reissman, 2008). In the first interview with Beverly I thought we were finished and shut off the voice recorder. Beverly sat quiet for a few moments, then said, as if to herself, "yeah, I'll say that." She started to tell me how Black women live in matriarchal society. I asked her to repeat what she said and turned the recorder back on. Beverly had been debating with herself whether or not to share her insight as a Black woman with me, a White male researcher. She told me later that she decided to open up more to me because she believes in the research I am doing.

This interaction illustrated the validity of the dialogic/performance analysis approach, which emphasizes the relationship between interviewee and interviewer.

Summary

Theory informs practice and practice leads to refinement of theory. Therefore, it is essential to apply principles of theory to my research design and interpretation of the data. One reason that Narrative Inquiry was a natural choice as my research design is that it is amenable to multiple theories (Kim, 2016). The objective of this study was not to impose a treatment or test a hypothesis, but rather to tell the stories of individual Black women who enter college as nontraditional students. Narrative inquiry was particularly well suited for this objective because of its emphasis on the telling of stories from the perspective of the speaker; truth is defined by the speaker, not by an objective outside source. The narrative methodology I chose was Reissman's (2008) dialogic/performance analysis, because it emphasizes the interaction between interviewer and interviewee. During the interviews I was aware of my positionality and how that could affect what the women said and how they said it. Therefore, as I conducted the interviews, then coded and interpreted the data, I applied principles of reflexivity (Berger, 2015) and remained mindful of my positionality and the subjective nature of interpretation. As an aide to this mindfulness, I fact checked with the women I interviewed. Above all, I focused on faithfully presenting the stories the individual women had to tell, and making certain the result was their stories, not mine.

Note on the Presentation of the Stories Told by Janet, Beverly and Denise

To honor their unique stories, I have devoted a separate chapter to each of the women. I have organized the women's stories primarily along chronological lines, using their words to tell

the stories, and making every effort to allow the stories to unfold as they told them. However, sometimes as the critical experiences were related, they were not given in chronological order. At times the teller would move between childhood and adult experiences while telling about a single experience. I tried to present each critical experience in the appropriate time frame.

Within each woman's story I have grouped their experiences primarily by childhood, adulthood, and Central College experiences. I recognize that by having chosen which critical experiences to include, and how I organized and introduced them, I have already imposed some interpretation on the women's stories. The dialogic/performance analysis lens acknowledges that not only the researcher, but also readers interpret stories as they read them (Reissman, 2008). I want the reader to have the opportunity to get to know each woman through her story before I present my interpretation. Therefore, I have refrained from additional interpretation in these chapters so that the stories might be as reasonably pure as possible when one person tells another person's story.

All of the statements made by the women are in italics set apart from my text. When I speak during a quote it is on a separate line in nonitalics. I used an ellipsis when text was cut from a quote. Sometimes a teller would change the wording of her statement or change topics within a sentence. To indicate this I used dashes.

The dialogic/performance analysis lens recognizes the role of the interviewer in the telling of stories. What stories are told, and how they are told, is influenced by the relationship between the interviewer and the interviewee (Reissman, 2008). I believe this was a significant factor in my study. Janet is a current student at Central College, and views me more in my role as a faculty member than as a researcher. Janet centered her stories around educational themes with life stories woven into them. Beverly is a Central College graduate who works at another college as an instructor and professional tutor, and therefore views me as a peer. She at times seemed a bit reserved and hesitant to go into detail about certain aspects of her life. Denise is not a current

student at the college, and of the three women, she was the most comfortable sharing her personal stories. After each critical experience that the women related I always asked if there was another experience they would like to share. Because Denise felt more comfortable in discussing her critical experiences, her story is about half again as long as Janet and Beverly's stories.

Chapter 4

Janet's Story

Janet is a 37-year-old mother of seven children. She is currently a student at Central College, majoring in Human Services. Janet began her studies at the college 2 years ago, and anticipates graduating with an AA degree this summer.

The critical experiences that Janet chose to share during our interviews were largely centered on her educational experiences. Janet's story begins with her childhood experiences in school, then moves on to her choosing to further her education as her own children began theirs. A significant encounter with a Central College professor while she was working on her GED lead her to choose to pursue a college degree. Janet describes the life-changing experiences she has had at Central College, and reflects on how this has impacted her relationships with members of the Black community. Janet's story is an uplifting tale of hard work, determination and success.

Childhood

Janet's parents did not emphasize education in their home, but rather focused on providing for the family.

> *Mom and dad, it was good but they just worked, they provided. We had the material but we didn't have the foundation of education. It was about food, cars, house; the inside wasn't there.*

Janet had little input from her parents on homework, except when the school notified her mother that she was not doing well.

> *It probably would have been okay* [to ask her parents for help on homework] *but it wasn't a good thing to do, you didn't do it. No, I go to a sibling before a parent... She wasn't a mom that sat down and we did homework. When we did do homework it was like I was in danger of failing, the teachers were on her. Now it was time to sit down and try to cram all these stuff at one time, and then she's yelling because I'm trying to learn my ABCs.*

Janet described how her early educational experience was negative. She began by telling about having problems with comprehension and anxiety in elementary school.

> *I was told I had comprehension problems and not only that, I suffered from severe anxiety, so I couldn't stay in school. That started at sixth grade. I would always run out of school, I would just start out the door, I couldn't stay.*

Because her mother felt it was an insult to accept professional counseling, Janet did not receive the help she needed.

> *Back then I guess my mom wasn't really learned about counseling and panic disorders and anxiety. She was a churchgoing person, so that was kind of an insult to get help from professionals. So, I didn't get the help that I needed, and in return I found myself paranoid at school. I just couldn't learn. I would leave. So, when I got the first opportunity to drop out and get out of there, that's what I did.*

Continuing, Janet emphasized that school was always a negative experience for her.

> *It was scary. It was always - I think I was just younger and I dealt with it differently. I didn't know - you know, I had to be there. But yeah, I was - when I was younger it was always frightening. I couldn't wait till it was over, it was just horrible all the time. I just ran home from school, it was bad all the time... I was always fearful, and I can't remember anything happening as a child. My father passed away, but I vaguely remember, at 4years old, but I don't know.*

As Janet finished this story, she again said that her mom did not get her the help that she needed as a child.

I just felt like my mom, you know, she didn't get me the help that I needed at that young age to be what I needed to be.

Janet describes an experience in elementary school when she was embarrassed by not knowing her multiplication facts.

Multiplication, trying to remember those because it was a game. If they called on you and you didn't know it that was horrible.

Did you ever get called on and not know it?

Oh Yeah!

What happened?

They would—like classmates, you know—your peers and stuff, they would laugh. The room got silent because they're waiting for you, and I'm trying to use my hands. Using the hands was not the thing to…

The teachers didn't allow you to?

Well, you could, it just wasn't the popular thing to do, you know. Everybody knew it off the top. But yes—so, I think I spent more time being nervous so that I wasn't able to concentrate on the numbers that I was doing. Before I sat down and just—you know. So, a lot of pressure.

Janet had to attend summer school one summer because of a failing grade. However, she relates that the objective was not for her to learn, but to be passed on to the next grade.

I was held back for an F I got. Not held back, I went to summer school... It kind of just moved along, you didn't know nothing but you went to the next grade... You kind of just went on. As long as you showed up for summer school, you did something, you would get [passed on].

I asked Janet if the "something" had to be learning, and she said "*No"*. Expanding on how the school passed her on when she was not ready, Janet said that she was not prepared for her math when she entered middle school.

> *I felt that I had a firm grip on multiplication. But that wasn't out of the push for the school, that was out of me not wanting to be embarrassed by people laughing that I didn't know it.*

Janet related that the pattern of being passed on without learning continued in middle school.

> *I learned in middle school how to do the extra credit, how to do what I needed to do to fail but still pass with the bare minimum... Nothing was sticking but they would* [pass] *us. At the end of the year they would say, 'Oh! You turned this in and we can* [pass] *you.' So, that's what you did, you found it. It was like they wanted to get you on to the next anyway.*

Although she attended high school intermittently, Janet did not complete a grade past Grade 8.

> *I was in—the last grade I completed was 8th grade. So, what was I about? Maybe 13, 14, yeah, about 14. Well, I was in high school, I did go to high school. So, I kind of jumped around. So, I went to Jefferson High School, then I played around and went to a Baptist school. So, I was in between the system kind of. Okay I'm over here and it was private school, so they were really like—so, eventually I just eased my way out at 16. I wasn't going, so technically I wasn't there.*

Adulthood

Janet found that adult life without an education was difficult.

> *Even with jobs when you want to go for applications, it's like, no GED, no high school diploma. That was haunting.*

She tried an online GED program, but found it to be like her early schooling: she was given a "diploma" without learning anything.

> *People started telling* [me]*, you can go online and you can get this GED and you can pay and they let you do the answers. That was not a good thing. I did try that. It was horrible, it was like you push the answer and it would tell you what the answer was when you got it wrong. So, then you can just put that in there and then go through the whole thing and they say, 'You completed, we're going to send you this diploma.'*
>
> But you don't feel that you were learning?
>
> *Oh my gosh, no! I looked at that thing it came in the mail, and it was nice but it wasn't the deal. It wasn't at all—I was still empty and knew nothing.*

Janet was motivated to begin working toward her GED when her children started going to school.

> *When I began to have children, and the work—the homework-started to come in. Yeah, it got pretty bad and I said I got to get my education... By this time they were like about third, fourth grade, and the math started to get tough. It wasn't—it was like fractions, and it was getting pretty heavy... The subtracting in kindergarten, first, second. But when we started to get up to fourth, up into middle school, and then I started to see some high school stuff, it got scary.*

When Janet found that she could start to help her children, she became committed to continuing her education.

> *But I was learning and I was able to come home and help them. From then on I just said, you know, I'm going all the way.*

Besides being able to help her children with their schoolwork, Janet wanted a career for herself.

I definitely wanted a career. Definitely. But you know, I'm a mother of seven children, and I think it was more of my kids were beginning to excel. They were excelling and I wasn't. I was motivating and supporting them and I pushed academics, their homework. I was always on that, because I didn't get it. Then something pointed came back at me and said, 'You got to get it. You have to do this too. It's not just them.'

Another reason for continuing her education was Janet's embarrassment around other parents.

So, I think it was more embarrassment too, because the kids, they play sports and I began to be that mom that kind of stood out. Here I was with no education, nothing behind my name but just a good mom. It wasn't enough.

Janet makes education a priority for her children. She will not accept failure in school from her children, and is proud of their educational achievements.

First, it's priority [education]. *It comes before anything and if I have to get a tutor to tutor, or we talk to the teacher, we're doing that. Just like before I came here* [for this interview], *my daughter is up at the high school getting tutoring right now. She does home school. But yeah, grades, I'm really, really strict about it, and I'm probably over the top now. But sometimes I got to bring it down, but I just know how hard it was for me. So, yeah, sending two kids off to college right now was a big, big deal. Yeah, one actually has got an associates in technology and the other one's working, doing criminal justice and it's almost a year.*

The word dropout is not even to be spoken in her house.

No. No. I don't even see the thought of dropout, it doesn't even register in their minds. Oh my gosh! They know it's not even—it's a very bad word in the house.

Besides holding her children accountable for their grades, Janet also expects accountability from the schools. Her son's high school wanted to place him in special education, but she insisted her son could learn if the teachers would help him.

They wanted to get him an IEP and I said no. I said, 'He can learn, if you guys help him, I know he can learn.'... I said no, it definitely comes down to the teacher, finding out how you learn and applying it.

Janet credits her success at Central College after a poor elementary school education for helping her to advocate for her son.

Had I not went to school I probably would have said 'yeah, give him an IEP.' But I became educated on a whole lot of things coming to Central College, and I'm telling you, you can't just tell me anything at this point. I'm learning.

It turned out that she was right about her son.

Now, when he went to college he said, 'Mom, I'm doing great.' He said, 'I love college, I'm learning.' His GPA is 3.9 or something—3.8. And they told me he had a learning disability in mathematics! He couldn't—he would do a problem but he didn't know how to explain how he got it.

Janet spoke very strongly about the mutual responsibility of parents and schools for children's education and personal development.

You're sending your kid away for 8hours and I say all the time we're coparenting, that's how I see the teacher. You have my child for 8hours, or 7and a half, whatever it is. But you are the parent and they are to respect you, and you are to instill in them what they need to go out into the society and be productive.

That's what I want—I don't want criminals, I don't want that. So I'm trusting you, or your education, that you're going to go through your books that you put away after college. If you get a kid that's disturbing and he's not—that method isn't working. I'm trusting that you're going to find another method to help my kid, and I'm going to do my part at home. So, it's been working I have to say at my house, because I'm right there with the teacher. I don't know—they know they can call me and we're on the same page.

While working toward her GED Janet had an experience that was life changing. Some faculty members from Central College visited the learning center where she was studying. While telling this story, Janet often paused to search for the right words.

> *Actually Central College, actually visited that center over there where we were getting our GED. And they did some kind of—we were able to do a career thing. And they—it was like English professors and stuff that came over. There was a lot of them and they listened to us, and we made these boards and said what we wanted to do, and they talked to us after.*

One of the professors took notice of Janet's work and encouraged her to consider going to college.

> *One of the professors, or one of the staff from here, told me that I would do very well in college, in my writing. She was very surprised and that was a big motivation at that point. She was very—after hearing from my teacher at the library, she said that how quiet I was and withdrawn when I presented, and then seeing my writing and how I organized—she was very, you know—she was maybe not surprised, maybe that's the wrong word. She was—I don't know—she was really—she motivated, she was very motivational. She was like, 'You could do this.' I mean this is—and I didn't think I could, I'm hearing that from a college professor.*
>
> How did that make you feel?
>
> *I was excited, I went home and I was just like, oh my goodness Central College was there! That seemed like—'I'm not going to get in Central College.' I'm trying to get my GED and it was 2 years before I even actually came. So, yeah, and I told her I wanted to do the Human Services—the major I'm in, and everything I wanted to do. She said, 'Oh my gosh, you would do great.' I got an A on that project. And yeah, she gave me some information and I held on to it. Two years later I completed* [my GED].

This experience stayed with Janet as she completed the work to earn her GED. As soon as she passed the GED exam she knew she would attend Central College.

> *So, I passed it. Yes, so I got it done right on time in 2014. Instantly I was like, 'I'm going to college!' I thought about—I looked through some papers, seeing my stuff, I said, 'I'm going to Central College, I'm just going to try it, I'm going to enroll.' And I did.*

Central College Experiences

Janet spoke very passionately about her experiences at Central College. She believes that the opportunities the school has provided for her have made her a better mother. She calls Central College her haven and says that her experience there has turned her into a woman.

> *I'm very God fearing. So my faith, my belief, that's one. Second is the Central College staff. I would have to give them total credit after my faith and my God. They have - I'm talking about phenomenal - I cannot - I'm telling you and I'm sorry.*
>
> <Janet is overcome with emotion and she begins to weep>
>
> *This school has—it's helped me and I know the professors don't even know. They don't even understand how much they've helped me. Sometimes I go home and I want to tell them, and it's been so many that have touched my life and gave me that kick, you know, when I needed it. It's a kick I didn't see when growing up. They've helped me build beautiful children, and they're learning that way. I mean I got an opportunity even to work here at the children's center. That was a great opportunity with the staff. It showed me that I can work and I can do some things. This is like my haven, it honestly is. It's really turned me into a woman.*

The only classes Janet has had to repeat at Central College are her two math classes. She does not resent having to repeat the math classes, but rather takes positive lessons from the

experiences. She learned to never give up because there was always someone willing to help her get through.

> *It meant that I don't give up, don't give up. Stay with it, hang with it even when it's rough. That's what I did. I did want to give up, I did want to scream at some of my professors and say, 'No, you're not doing this right.' But it wasn't that—I found a lesson, and it was a lesson—it was always. Even if I didn't learn the math per se how I wanted to, I learned a lot of other things that that professor gave me.*
>
> *The one thing I've learned here is don't give up. If you want it, get it. It's here, and if you can't get it from one professor, there is one down the hall. There is a lot of professors in mathematics.*
>
> *I could have maybe stopped here, I could have maybe went somewhere else. But it was—I didn't have to go searching, there was always someone there who was willing to set my book down, sit me down at a table wherever, and teach and show me a problem.*

Janet talked about the two professors she had for mathematics. For both of her math classes she first had Professor West (a pseudonym) and failed, then she retook the courses with Professor Shirley (a pseudonym) and passed. She speaks very highly of both professors, expressing genuine affection for them. First Janet talks about professor West and how she learned so much from her, even though she did not pass the classes.

> *She was tough. That's just her level of education and it's awesome, because she's very brilliant and smart... We speak, we spend summers talking for long periods of time; just great woman. But I needed that, I needed a heavy dose of her in my life. She shaped me. I didn't pass her class—It didn't take away, I learned in her class. She let me know that you're not taking shortcuts, and I wanted to. I wanted to find a way around—she wasn't going to let me do that. So, she taught me to be—you do it right, and you're going to do it this way and this is the way I want it, or its wrong. Simple as that and I respected that.*

> *That helped me through my other classes... She was that authoritative parent for me here at Central College.*

Professor Shirley also had an impact on Janet's life. As a mother, Janet was impressed with how Professor Shirley persevered at her work through pregnancy.

> *When she was off on* [maternity] *leave, she helped and told me what I needed to do. She wasn't going to be returning, my heart was broken. But she told me how to prepare myself for the class through the summer. So, I didn't just spend my summer running around, I started to work on different things and building... Then when I took it—when she came back, she helped me with the working and I passed. She was amazing. I guess I just watched her just have, you know—be pregnant and know that she could work.*

Janet said Professor Shirley's teaching method was loving, and appreciated being shown alternate ways to solve problems.

> *Then her teaching method was—it was loving. It was like a daughter, kid, parent. It wasn't professor—I had to zoom in sometimes and call her a professor. She's good, yeah. And she's just so social. She didn't have that—I didn't feel like wrong if I didn't know it. She found ways to teach me. She said, 'Okay, you're not getting it this way.' If it meant using this box to illustrate a square, or whatever she had to do, she did it. That helped, oh my gosh!*

Janet's experience at Central College has been so positive, she says she could stay in school the rest of her life. She feels the professors have been like family.

> *Like what I've learned here at Central College just, I mean I actually feel like I know something. Like I'm in my professor's office sometimes at eight o'clock, and were getting it and I'm getting it. So, yeah, I think college has been extremely—like I could stay in school probably the rest of my life—I mean just from my thinking. I am—I'm really enjoying it. I don't miss class, you know what I mean? I'm just so motivated. I mean the*

tutoring center and even the professors, like the professors I've had in the past, I can still go to them. That's big, and I'm not in their class and I can still go and say, 'Look, I need help with this or this.' They point me in that direction. They've been like family.

Janet sums up her successful college experience by crediting the professor who first told her she could succeed in college.

It's that one professor who told me I can do this. So, even though I'm starving when I go home at night and food isn't on the table like it should be, tomorrow I'm going back out there. That professor has helped... that woman told me I can do this.

As positive as her educational experience has been, Janet says that it has driven a wedge between her and her Black friends.

So, now when I see my Black sisters—not blood—I'm just speaking. They look at me, they look at me and discuss now as I think I'm better than them, or maybe I'm with the White people now, because I'm getting a little better at education. I'm only coming out with an associate [degree]*, but it was a big deal, they see it as a Master's because they don't have education, they see it as a Master's degree.*

They accuse her of "talking White."

Yes, and they make statements like 'You talk White. You talk White because you don't use the slang anymore. You've replaced words like, you know, you're talking irrational, or talk rational. Those aren't words that we use.' I didn't use them, I learned them here, I learned a lot of words here.

There is even tension within Janet's family, and that has been very painful.

It's caused a lot of—not just with outsiders, even in my family. I've lost relationships coming here and not talking to siblings, because I'm so close to graduating. I wanted to believe it sometimes, I wanted to drop—just say, 'I'm out of here.' Because if—I mean I'm doing something good and I'm getting crucified for it, why? I mean my sister is not

talking to me, my mom is nasty. When I pass a test I hear her say, 'Who helped you with that?' Well, could I have done it myself?

As Janet continued to talk about the tension between her and her Black friends and family, she said that, sadly, her support system is primarily in the White community at the college.

The only motivation came from outsiders, and honestly White people. That's hurtful. But they say, 'Oh! They're racists, they don't want to help you. They don't, the White men don't really give you nothing.' Honest to God, that's all the White has been—what's guided me through the door. Not just me, my son, my daughter.

So, I'm lost on racism. I don't know how to—because the people I have in my corner right now sadly is not the Black community. I can't say that I'm here because of them, because I'm not. I don't even feel comfortable having my family at my graduation, I would rather go invite some of these professors that probably would look at me like I'm crazy.

Since our interviews I have seen Janet in the hallways at Central College several times. She always greets me warmly with a smile. I am honored that a woman of such strength, dignity and determination to succeed was willing to share her experiences with me. During finals week I went to speak with a colleague in his office, and Janet was already in his outer office waiting to see him. We had a few minutes to talk, and I told Janet how pleased I am to see that she will be graduating this summer, and that I plan to attend the graduation ceremony. Janet seemed surprised and said "Really, you will be there?" I told her I would not miss it for the world.

Conclusion

Janet story is one of determination and success. Her childhood experiences in school were not positive, so she left school at young age. She soon took on the responsibilities of adult

life, including motherhood. As she struggled to find adequate employment and to be actively involved in her children's education, Janet discovered that life without an education was difficult. She began working on her GED, and soon found that she could better help her children with their homework. Encouragement from a Central College professor who visited the learning center where she was studying for her GED inspired Janet to go to college as soon as she passed the GED exam. At Central College Janet has felt completely supported. Janet relates that her professors care about her success and she has great respect and affection for them. Janet has a *refuse to quit* attitude toward her education. She has instilled this in her children and is adamant that others need to have this attitude if they also want to succeed in college.

The one negative aspect of her education that Janet discussed is that a wedge has been driven between her and the Black community, including her mother and sisters. They have accused her of "becoming White" and thinking she is better than them because of her success in college. Janet shared these painful experiences in the context of giving advice for other women who have had experiences similar to hers, and in making recommendations for improvement of the programs at Central College. Janet spoke very bluntly, and often harshly, of the behaviors and attitudes she sees in the Black community. These comments and their implications will be discussed in chapter 7.

The experiences that Janet chose to share with me not only revealed the unique individual that she is but also caused me to reconsider my theoretical framework. Janet related experiences that on the surface were almost exclusively educational experiences, but I realized that they were really a framework for her life experiences. This will also be discussed in chapter 7.

Chapter 5

Beverly's Story

Beverly is 55 years old. She began her studies at Central College when she was 44 years old, and in 4years graduated Cum Laude, earning a BS in Human Services with a minor in Psychology. She currently works as an instructor and professional tutor at another college, where she helps students with their writing skills.

Beverly is a philosophical person. As she related her life and educational experiences, she would often interject social commentary. The story she told began at age 7 when she came to live with a foster family who would eventually adopt her. Throughout her school experience Beverly excelled, and she has assigned multiple meanings to her academic success. Beverly shared several experiences from her early adulthood, then chose to not speak in detail about her life until she began attending Central College. Beverly has faced some difficult challenges, both as a child and as an adult. Her intellectual strength and her religious faith have seen her through those hard times.

Childhood

The first experience Beverly related was that she started elementary school late.

Well, I started school late. But just to say, I wasn't a typical child, I was in foster care and just went through a whole lot by the time I got into one foster home. I was about 7years old, and I hadn't been to school yet. So, I didn't start in kindergarten, I started in the first grade, some kind of way. And I didn't know anything, so everything was intimidating, especially math.

Beverly recalled a teacher who helped her feel comfortable, and quickly she realized that she could do well in math.

> *But I just remember having an awesome teacher, who didn't put me on the spot or anything. And before long I was jumping in there, and found out I had a propensity towards math. It was—it was easy to me.*

Later in Interview 1 Beverly elaborated on why she had started school late.

> *I was born when my mother—my natural mother—was in prison. And my brother, 9years later, was born when my mother was in prison... My mother was a heroin addict and an alcoholic and just all around, um, sick person, you know. I don't—she just had been through much of what she put me through. So, it was one of those cycles. Anyway, by the time I got to the Wilsons'* [a pseudonym)] *that's what kind of transformed me.*

Beverly described how her life changed after she came to live with the Wilson family. There was an emphasis on education and religion. Beverly was the youngest of many foster children in the home.

> *But I had foster parents who made me do my homework... The home life was different for me after I got into foster care in those years... In this home I was taught the Word, and in fact my* [foster] *mom was around and determined that we—that I be educated. She had a lot of foster kids in and out the home, but when I got there I was the youngest one.*

While telling about a personal experience, Beverly would sometimes switch from her personal story to social commentary. She did this as she continued telling about coming to live with the Wilson family.

> *Still things were going on in the inside. But back then children didn't go to homes with a how-to-handle manual. And so much of what had happened—my new parents didn't know, and so they thought I had this vivid imagination. So that stayed on the inside,*

without being checked. If you—when issues are addressed, we can do what we need to survive, and my mind did one of those, um, involuntary...

Beverly paused and then changed the subject to tell about having a college scholarship that she did not take advantage of. She hesitated frequently while relating this experience, saying that she did not want to blame anyone.

Well I remembered some—I didn't remember all, and I didn't start to remember all until I got into my 20s—and, and I just couldn't maintain any type of—I just started to decline. And I had a free ride to college. But I—I didn't take it. I was just... I had lost my—I had lost my way and didn't know what I was going to do. And I try—I try not to sound as if I'm blaming anybody—I'm just giving details, because I don't blame anybody for where I am and who I am—what I've done and what I've done.

Beverly continued, alluding that the difference in age between her foster mother and herself was an issue, but still not wanting to blame anyone else for her decision to pass on the college scholarship.

It's just—the people—my mother was 65 years older than I... She didn't know what to do to make sure I got into college and out of—she couldn't help with that, and there was no one else in my life who seemed interested. And I said, all right, just, probably, maybe, possibly—I just needed a push, but that was something she couldn't provide. But what she did provide was enough, so—again, no, no blame. I give her all the credit in all world.

Beverly related that her foster mother was doing her best to help her to not make the same mistakes that the older foster family children had made, but laughs that it did not work. She jokes that her foster mother's efforts had her reading the dictionary for the rest of her life.

And I believe she was trying not to make—to keep me from making the mistakes the older ones made. It didn't work [laughs]*, but what she did to prevent it really did have an impact. For the rest of my life she had me reading the dictionary.*

Beverly described herself as an overachiever in school, again talking in general terms about others, then about her own experience.

In fact, a lot of children who go through, um, who have a rough childhood—sometimes they turn out to be overachievers, and that was me. Oh Boy! I would have the answer, and if I didn't know something, I would really study to try to figure it out.

Beverly said that the motivation for her overachieving was that she wanted to please her foster mother. She felt driven to excel, and would not be satisfied with anything less than an A.

I wanted—as an overachiever, I wanted to please my mother. I think from having come from the type of [long pause] *It was a big deal about making straight A's. But there was something in me, and it was a little off, because I even brought it here* [to Central College] *that I had to get A's. I just had to get A's, and it did come relatively easy, but I was sad and depressed if I didn't have an A.*

Reflecting further on her drive to excel, Beverly attributes her academic success to hard work and a competitive nature.

I took joy in doing and being the best. I see now I wasn't the most intelligent, I was just the one who applied myself the most, to beat anyone, to get that better grade. I was very competitive with grades then. So, it wasn't something I wanted to do to be a success. It wasn't tied to anything like that, it was just tied to outdoing everyone else [laughs].

After laughing at her competitiveness, Beverly became more serious as she reflected on her motivation to excel academically.

Because it was—it was the only thing I had. So maybe in essence that is true. I understand—I can see it from a different light. Not the actual studying itself, but the

grades. I took refuge in that. At least I had something, and I was doing something very very well.

I asked Beverly if she felt that she was well prepared for mathematics as she entered high school.

Well, I went straight into an honor school, which they were just developing. Yeah, I went to a school called University High School. It was college prep. In fact, I did some—I got to go to the high before I actually got out of the eighth grade. I was just pretty smart in math back then. So, yeah, I was pretty prepared for high school, and when I got into high school, I didn't have any problems.

Beverly then followed this up with another reference to problems she had in her later teens, as she had done previously when relating that she turned down a college scholarship, but again she chose not to go into detail about them. Beverly balanced the problems she had with the fact that she still managed to graduate at the top of her class.

It wasn't until I got a little rebellious around the tenth grade, and you know I—no matter—and I won't go too much into detail. But the blood that ran through my veins was stronger than the family I was staying with. There was some—I was having some issues, and sometimes they don't come to light till years later. So, I started doing my thing, I had a boyfriend cutting school and everything. But still managed to graduate at the top of my class.

Beverly mused that perhaps it would have been for the best if she had gotten into trouble then, but again returns to the fact that despite everything, she still graduated with honors.

I don't know if that was good or not—I probably should have gotten into some trouble and then maybe, maybe I would have corrected my behaviors a little earlier. But so—in high school I drifted off, but still I graduated with honors.

Adulthood

After high school Beverly went to a community college for a little while, but she was not motivated, so she joined the military.

I was working a full time job, and tried to go to the community college, but I was not motivated. So I went into the military in 1980 and I stayed in the military from 1980 to 1984.

After her military service, Beverly worked in an import-export business for a while until her foster father became ill.

When I got out, I just took a job as an importer-exporter. I used to export essential oils for a company in Bloomsbury, New Jersey. And I don't remember what I did after that. Then my father, he had Alzheimer's, so I moved home to take care of him, and that kind of became my job.

Beverly related that while caring for her foster father she made some personal choices that were not the best.

I got very lazy, and I wanted to party all the time and I was just sluggish, and got involved in relationships that were no good. I mean, I wasn't battered, but I was definitely in abusive relationships. And it's easy to see how the emotional abuse was worse. Some kind of way I attracted buttheads [laughs]. *You know, and so it was a whirlwind of wrong choices, until I just decided—okay, I have to do something different.*

At this point in her life Beverly reconnected with her birth mother.

I got pregnant when I was about27 years old. I didn't have anywhere to go, and I heard my natural mother was up there, so I said, well, let me—I heard she was doing well. So I said well, let me go introduce myself, see if maybe I can stay with her for a while... And I

went back to my natural mother. She was actually just one block away. Not even a 5-minute walk, that's where she worked, from the house where I was raised.

Beverly's mother was in recovery from her drug and alcohol addiction, but Beverly described her as "clean and crazy."

Have you ever heard the term clean and crazy?

Clean and crazy?

Yeah, she—she abstained from the use of drugs and alcohol, and she was a drug and alcohol counselor. But she didn't apply those principles to her life, she hadn't dealt with the issues that were at the core of her being either.

Beverly's mother was caring for her sister's children, but the environment was emotionally and physically unhealthy. This brought back unpleasant memories from Beverly's early childhood.

So she had my sister's children, and she was abusive towards them. So, I could see—it was just reliving—it was horrible. I had never been around mice or roaches or anything like that after I left her at 7years old, but that was the environment—and that just did something to me, you know.

For a while Beverly took care of her sister's children, but it became too much when her own son was born.

She [Beverly's natural mother] *was still abusive. I ended up being care-taker for the kids. Five kids, and when my son came along, I was—it was just a—a mess. And actually, when I just had had enough, I—I left.*

During Interview 1Beverly did not talk about her life in between the time she tried to reconnect with her birth mother and when she started to attend Central College. In Interview 2Beverly said that she got out of the military in 1984, and then she immediately began talking about entering Central College in 2004. I noted that that was 20years later, and asked what was going on in her life during those 20years.

Yeah, I worked a number of jobs, it was totally dysfunctional. After a while it was totally dysfunctional. I didn't—I hooked up with my birth mother and so that was dysfunctional exponential—you know, dysfunction just to the highest degree. And helped her to raise some of my nieces and nephews while she worked, so that's what I did. I loved to party so I didn't mind partying and doing drugs, and you know, just hanging out.

Beverly described herself as a caretaker, noting that she had no time for herself, and that she was an actor in other people's plays. She did not offer any other details of that period of time in her life, so I did not ask again.

So that's what I was pretty much—a caretaker, and the baby sitter, and all of those things, and there was no time for me to really to do me. I was always a player or an actor in someone's play, trying to help them to be able to make it.

Central College Experiences

Beverly was serving her community as what she called a "walking minister." She related that her decision to enroll at Central College was motivated by her work as a minister.

I didn't really know what I wanted to do. And then I decided—I was already a minister, why not come back and get a degree, so that I can take the Word and the Light into the field?... I wanted to leave a legacy, I really did, and I did not want to work in child care... I just—I just wanted to be able to work and help people... But to be able to help them with a degree that didn't have anything to do with theology. To be able to position myself somewhere to be able to help them to help other people. Because people are struggling, they really are, especially in the church. My gosh, that sounds like an oxymoron, [but] *they are struggling in the church.*

Beverly related that although she had done very well in math in school she was afraid she would not do well in college. While taking the mathematics placement test before beginning her studies at Central College, Beverly erased some of her answers because she was afraid of being placed too high.

> *When I took the placement test, I freaked out. I was hearing what people were saying to me, and I went back and erased answers so that I wouldn't be put in a math class that was too difficult for me. Not to say…*
>
> So you probably could have placed higher?
>
> *I probably could have. I'm glad I didn't, because I had some kind of way—in spite of everything I'd done—and I developed this—this phobia or something, just a little anxiety.*

I asked Beverly why she thinks she was experiencing math anxiety when she had done so well in math as a young person.

> *Just because I was beaten in every respect. I think my self-esteem was—I, I thought—well I don't know how old I was, 43 or 44 when I came back. So, I think I was afraid of the failing, I didn't want to fail, and then I thought I wouldn't catch on.*

Beverly did catch on, and excelled in her coursework. However, she struggled with her self-confidence and self-esteem in spite of her success.

> *But the confidence wasn't there until later on. The experience at first—it was scary and overwhelming.*

Beverly related this lack confidence and self-esteem to social anxiety despite her role as a minister. Even as she says that it got better as she gained momentum, she adds the proviso "unless I was challenged."

> *Over the years, I—I really have had developed some—I had a little social anxiety. And that was because I was so uncertain of myself, and I—I just was so concerned about how other people saw me, and what they thought of me, and all of that. And I always thought*

people underestimated or perhaps even [long pause] *Now I'm just trying to look at this because I never really thought about it too much. I always felt less than—always, no matter how long I've been in church... But I had being a walking minister all the rest of the time, but I had such low self-esteem. So coming into the classroom I was pretty laid back and just nervous, nervous all the time. Until I got my momentum and I was okay, unless I was challenged.*

Beverly tells about being in a math class and being intimidated by another student who, although she knew less math than Beverly did, had more self-confidence. She ties her lack of confidence in the classroom to her history of abuse.

The young lady I'm telling you about was right under me. She's White, and just—we're friends. She was very confident—she had a different experience, so she didn't have as good of a handle on math as I did, but she thought she had confidence, and that was intimidating to me. So if a person acted like they knew what they were doing, I—I would lose my confidence... I doubted my knowledge, and I've—my history of abuse does something to your head, you know. It does something—it did something to my mind.

The only C Beverly earned during her 4years of study was in a math class, and she was very self-conscious about that. Her struggles were partly due to her responsibilities outside of the classroom. She hesitates as she begins to talk about problems her son was having, then chooses to drop the subject, simply saying "I couldn't invest the time."

Now, when I got into 153 [Topics in Mathematics, a required math course for Human Services majors] *that was a terrible year for me. I had a lot… going on with my son. You know—going to—there was just so much—again, I couldn't invest the time.*

Beverly changes the topic to not being comfortable with the grade in the class being based exclusively on tests.

There were no quizzes. No nothing. Just tests. Straight tests. And I remember having to leave one test, to make sure I went to support my son for something, and I hadn't finished it. But I had to make a choice…and I chose my son, instead of... So I let that go, and then the final. I was really dealing with it. I really had anxiety about the final. I really didn't need to score that high to bring my grade—to maintain that B I had, but I did worse on that final than anything.

Although she earned a B in the class, Beverly also recalled Statistics as a course where she did not do as well as she would have liked. Again, she relates her struggles to responsibilities outside of school.

I could do the work right there, but I didn't invest outside of the classroom too much, because like I said, I was starting to be a minister. I had a child and a ministry. Oh my gosh! Anyway, I had to choose sometimes and that went lacking.

As Beverly reflected on her current life, she related that she still struggles with self-confidence and self-esteem issues. She wonders at how it still affects her "after all those years."

You know, I'm growing out of it, but it's still there. I have to do that self-talk, that affirmation thing all the time, to say chill out [laughs], *you know, get it together. And to kind of embrace myself. It's amazing how after all those years, still dealing with the same issues.*

Beverly continues with this line of thought, but again changes the focus from herself to people in general.

And I find that's true with a lot of not just Black women and Black men but people in general. When they carry a lot of baggage, and they don't work through it, it haunts them, and they don't see how it manifests.

It doesn't go away after a semester or two?

It doesn't go, unless you work on yourself. And this so happens with the Human Service curriculum. A lot of the work is self-reflected. Gets you to see who you are, before you can try to help someone so that was helping me to grow out of some things. To get better. But still, that is—it's, it's always present.

Beverly has expressed sincere personal interest in my research. We communicated for several months before I began the interviews, and she was always eager to hear about how the work was going. Since our interviews together Beverly and I have only communicated once, but she has asked me to share the results with her, and I will do so. Beverly said the discussions we have had have made her consider resuming her own graduate study.

Conclusion

Beverly is a reflective, intellectual woman. As she relates her life and educational experiences she often shifts into commentary on social issues. For example, she begins to tell about how she carried a lot of personal baggage as a young girl when she first came to live with the Wilson family, but then changed to a statement about foster children in general. Throughout school Beverly excelled, self-consciously calling herself an "overachiever." She gave multiple explanations for this, including wanting to please her stepmother, for the joy of learning, competition with other students, and because it was "the only thing I had... something I could do very very, well." Beverly had personal issues as a teenager and younger adult that she only spoke about in vague terms, such as she partied a lot and got into unhealthy relationships. As an adult Beverly tried reconnecting with her birth mother, but that was another unhealthy relationship. Religion has been an important part of Beverly's life, starting from when she came to live with the Wilson family, continuing as she became a minister. Beverly's experience at Central College

was mostly positive, with minor struggles in two math classes. Beverly works in the education field, helping students with their writing skills, and continues her service as a minister.

During the interviews Beverly seemed to struggle with wanting to share her story and not wanting to go into detail about unpleasant experiences in her life. In chapter 7 I will discuss this in light of the relationship between researcher and storyteller as described by Reissman's (2008) dialogic-performance analysis. An example of Beverly's uncertainness over how much to share with me came at the end of Interview 1. After I had shut off the voice recorder she said as if to herself, "yeah, I'll say that." Then started to talk about Black women as matriarchs. This also will be discussed in chapter 7.

Chapter 6

Denise's Story

Denise is in her late fifties. She first enrolled at Central College when she was 44 years old, and attended for 15 semesters, earning 76 hours and a certificate in Health Information Coding. She left school when she was placed on academic suspension for low grades. She lives with her husband of 20-plus years and works part time at a grocery store.

The critical experiences that Denise chose to share during our interviews were often emotionally charged. Denise has had some very trying experiences. She used the specific phrase "I really had it rough" on two separate occasions, and notes "it was rough" on a third occasion.

Childhood

Many of the experiences that Denise related centered on her mother's alcoholism and how this impacted her early life. Denise had to assume the role of parent to her younger siblings.

> *I'm the oldest and I come from a dysfunctional household background. So, when I came home with my homework I had no one to help me. My mother really couldn't help me. Most of the time she wasn't there when I got home, and then I would put on my mommy shoes and take care of my siblings. Then I started babysitting since I'm good at watching kids. I started babysitting, so I made my own money and then I was able to buy my own things. But most of that I would spend on my siblings.*

As Denise continued, she reflected on how her early caretaking behaviors have stayed with her throughout her entire life.

> *I would put me last, I still do that till today. I put myself last, everybody else's needs come before mine.*

Denise recalled her mother spending a lot of time at "speakeasies."

> *The speakeasies is where you would go and get liquor after hours when the bars and the liquor stores were closed. So, my mother would be at the speakeasies. When she knew he* [her mother's live-in boyfriend] *was coming home she would come and get a shower, try to freshen herself up. Sometimes she made it and sometimes she just passed out.*

When her mother would drink, Denise had to care for her.

> *My mother she would get so blasted sometimes, I would find her on the floor in the bathroom a mess where I had to get her, put her in a tub, wash her up, dry her off, push her down on her bed and cover her up with covers. She woke up in the morning, she knew she was washed up and she didn't know how she got home.*

Denise related that her mother's behavior caused her embarrassment at school.

> *One time, she was standing up, on the street pole, which was right outside our house. We lived in the projects, the housing projects. Right outside she couldn't make it across the street, she hugged up on the street pole, calling my name. I said, 'Oh My God! I am not going to school. I know everybody can hear her and see her hugging a street pole, I am not going to school tomorrow. They're not going to tease me.' I had to go and walk her back across the street. I remember in South Philly around 1 o'clock in the morning going to bars I know she'd frequent to bring her home, and I was about 10 then, like between 9 and 10 then. So, I really had it rough... Yeah, I really had it rough.*

Denise's mother had a live-in boyfriend, and there was tension between her mother and the boyfriend. In the next passage Denise is referring to the meals she cooked for the family. It was

a catch-22 situation in which she had to cook to care for her younger siblings, but in so doing it led to fights between her mother and her mother's boyfriend.

> *But he knew she wasn't doing those meals and then they got into a lot of fights. So, it was that dysfunctional issue of just seeing my mom get beaten like that. Not that she had been beaten down, but just to see her get slapped or punched or whatever like that was horrible enough.*

Denise's mother would sometimes leave the family for extended periods of time. Denise attributed her mother's prolonged absences to her own ability to tend to her siblings and their home.

> *She's gone 3months at a time because I think she knew I would take care of the house and keep everybody out of trouble.*

The first experience that Denise told about, and one she returned to often, is that she was self-taught because she missed school often in order to care for her younger siblings.

> *So, I started doing my homework at school and then when—you know, I was real good at it, but I lost a lot of days. I missed a lot of days, so, while I was at home being mommy while my mother was whatever she was, I studied. I just went through the book and did—and I would make—I taught myself to read. I taught myself to read, I think I was like 4and a half with Doctor Seuss. I taught myself to read, I taught myself how to enunciate, I taught myself.*
>
> *So, some words I pronounce doesn't sound like everybody else is pronouncing because I self-taught myself the phonics, my phonics. If I've read here and I got down here then I knew what that word meant that was up there. So, I would kind of underline words and if I didn't know what they were. I said, maybe don't tell me what it means—when I get down, and usually it did—I can go back and say, now I know what that word means.*

> *So, I kind of taught myself. I really didn't finish high school—actually I dropped out in the 9th grade... I was ever reading, ever learning while I was at home, because when the children officer came I didn't want them to take us and separate us.*

Even though Denise dropped out of school in ninth grade, she continued to read and to teach herself. She sometimes would mimic methods a teacher in school had used. Denise relates that her self-teaching was effective.

> *But I loved to read, though it didn't matter what it was. It could be about something I had no idea what it was about, and I would just read, just to learn new words. And I want to make my list up and say, spell it, say it, write it three times. That was the way we were taught to do our spelling words for the list that we took a test on every week. I did that same thing...*
>
> *My academics were good but my attendance were poor... Because I could do, you know—I could do the top of that academic section for math, for all the classes. I would come in on a test day and pass the test and I hadn't been here in 2 weeks.*

Denise related that at least part of her reason for self-teaching was so that she could escape the unpleasant world of her youth.

> *So, actually I basically dropped out in a later part of 9th grade. But I kept up by reading things like books—books was it for me. That was it for me—books, learn something new... That was my get away from what I was in, was my books. So, somebody is giving out some free books, I don't care what the subject was, just that it was some reading so I can learn some new words, I would pick them up like that.*

In most of her descriptions about how she taught herself Denise gave the impression that the reason for this was her responsibilities at home. However, she told one story about an embarrassing incident at school that she said was the reason she stopped attending.

But what made me leave my junior high school was when one time I had to wrap my feet in plastic and stuff my shoes with paper because it was wintertime. My history teacher, she meant well, she pulled me out of the classroom and she explained what she was doing and she wanted to buy me some shoes and I agreed to it. But then I was so embarrassed about it, I never went back to school. I never went back, I was so embarrassed about it I never went back.

When Denise was 12 years old her younger sister was badly burned in a kitchen accident. When Denise told the story of her sister getting burned, it was not only about the terrible injuries her sister suffered. She made reference to two other themes in her life: her being self-taught, and being the parent in the household.

We had to maintain our house with the oven and a stove with pellets for heat. At one point my brother and sister were there, and I think I went to the door. By the time I came back my sister was running and she was on flame, she was on fire. So, I had to grab her and throw something on her to put the fire out. Because of reading I knew to do that. I think I was maybe 12 so, she was about 9. Yeah, I was 12, she was about 9 and she might have been younger than that. She had third-degree burns. She stayed in the hospital for a long time. Yeah, at age 12 which you weren't allowed to go, and at that time but they didn't know I was 12, and I was able to live a lie to get in and go see her because I knew my mother wasn't going. I was still caring for my siblings that were home and she was at the hospital and she was at the hospital for months. That way it looked like family was visiting her so that they won't think that she was abandoned there.

You probably saved your sister's life by your actions.

Yeah, but had I not been reading books and keeping my mind sharp—one thing that I should have been in school learning. I learned them in life—like I'm hands-on to learn these things.

Later in Interview 1 Denise revisited the story of her sister getting burned, this time revealing her guilt over it having happened as she fills in details of the incident. As she spoke again of the time her sister got burned, she spoke more reflectively, and with a quieter voice that revealed the pain she still bears.

> *My sister getting burnt, I felt like it was my fault because I wasn't attentive to them standing here at the stove like that. What my brother did was he took a spoon and he put it in the fire and so, when it got hot he did like that* [flicks her wrist]*, it hit her shirt and started. Not knowing to drop and roll she ran and when she ran I had grabbed something. But it was, it had already* [pauses] *Yeah, she had to get a skin graft, skin taken off her stomach and put on her arm.*

Immediately after telling of her sister's burning accident, Denise shared an account of her own burn injury, which happened a year or two after her sister's. It was one of the two longest stories Denise told. Denise's story of getting burned is set against the backdrop of her mother's absence while Denise is cooking for her siblings.

> *We were staying with a friend of my mother's and she had a speakeasy. There were some men at the table. It was, say Saturday morning or Sunday morning, and the night before we had beans for dinner, black-eyed peas and rice and I think she might have made biscuits or cornbread.*

Denise then continues in a sarcastic tone of voice (one she used at no other time) as she gave the reason why her mother was not going to be there to make breakfast for the children that morning:

> *My mother was supposed to go out this morning. I was like, I never heard nobody go look for no house on Sunday, but oh well, and she was supposed to be looking for her place.*

Denise returned to the story of that morning in her normal tone of voice.

So, when we got up that morning I got my siblings dressed and we came down to have breakfast, she [her mother's friend] *had already fixed her kids eggs and bacon ends. So, we had to eat the beans and rice.*

I said, 'Mother.' I said, 'We want some eggs and bacon too.'

'Well, I'm not making it,' said her mother's friend.

I said, 'Well, I'll make it.'

'So what, go ahead.'

And I did. But when I went to pour the hot grease into the grease can—because you know it was always the grease can on the back of the stoves in those days. When I went to pour the grease in the grease can I didn't know that the handle flipped, and when it flipped it hit my leg... Well, I ran upstairs. When I went to the bathroom—I got to the bathroom—when I pulled the pants down my skin went down.

Denise received no professional or medical help.

Yeah, and I didn't go to the hospital for it, I didn't get antibiotics for it, nothing.

Denise needed to care for herself. Given her mother's virtual absence, Denise turned to a woman who stayed with her mother for advice.

The woman who stayed with mother told her what to get, what to get for me. I went to the store and got it for me and I took care of this wound there. But yeah, I took care of it myself. So, in order to clean it I had to take a bath so I can soak the bandages that ripped the skin to set, dry it and set it up and bandage it again.

The wound eventually healed, and left a scar. At first, Denise tried to hide the scar to avoid teasing from other children.

I had the scar and the kids would eew *me, they were,* 'Eew*, what happened to you?' So, I kept this don't mess with me kind of look on my face. I've always wore long pants*

because of that, or long skirts because of that. And I was a young girl, and I dressed really, really old.

She later came to accept the scar as part of herself.

Until I became 16 I guess, and then I started accepting that that burn was a part of me. If you eew *it then I don't need to be in your company and you ain't going to worry about me and I don't have to explain what happened to me. Because to tell you won't change your mind about* eew*, so, you know.*

Denise spoke of a great aunt who was positive influence on her as a young girl. Cooking was one of the primary things about which her great aunt taught Denise.

I had one person that I can go to.... I would go to my great aunt and she was like Nanny, her grandkids called her Nanny, so we all called her Nanny... She was the only one that gave me some insight. I had few women that I could go to that would give me insight—either family member or not. With her passing I just thought I lost my world. I would sit under her and she taught me so many cooking techniques that I got. I was 12 years old and I could cook a four-course meal with dessert and all.

In Interview 3, I asked Denise if she had any role models in her life, and she again spoke of her great aunt. This time she spoke more wistfully because the day of the interview was her great aunt's birthday. As she remembered her great aunt, her story again turned to cooking.

Just a great aunt really stuck out because I have been thinking about her. I think her birthday is somewhere April. I think it might be today. Today is the 11th. Yes, because Sunday was the 9th and I went to church on Sunday, that was Palm Sunday. Today is the 11th and I think today is her birthday. But I have been thinking about her and I had some apples and I didn't really look at the bag and when I got them home I noticed that the skin was kind of wrinkled up. So, I made an apple with canned peaches cobbler for a dessert and I used these apples, I'm not going to waste them. So, I cut the skin and cut it

down and made an apple peach and I thought about her, because she's shown me a lot of my cooking.

Adulthood

Denise left home at the age of 19. She began relating this experience by talking about what she did after leaving home.

> *I left home at 19. I had two of my own children. I left home at 19and got my own house. Actually I had it for 6months and I was paying my rent and I was not working. I had sold drugs, I sold marijuana and I was making money and saving money and I was paying my rent.*

Then Denise told about what led up to her finally leaving home for good.

> *I was waiting for that one more time for my mother to put me out. Because she put me out—I think from 12 to 14 every other month I was getting put out. So, I would go to a neighbor or someone that I could talk to and they would let me stay there and I would clean their house and feed their kids and bath their kids and clothe their kids and babysit for them and get paid for it. So, I've always had money in my pocket...I would give them* [her siblings] *money but then my mother would call me, when she's seeing how efficient that house was running, then she would call me back home. Then when I get home to get thrown out again.*

The confrontations with her mother finally became too much and Denise decided to move out permanently. Denise's mother would curse at her.

> *I mean curse words like, B-I-T, get the F out, dah, dah, dah. 'This is my house and my kids' and* [I said] *'you're so right.' When I did that - the next day it was a Saturday - I got my cousin to come with a truck. I took my little things out of my bedroom and we went to*

our house and I ended up with one bed, me and my two children and the kids' father and a big house that I never did get it filled with furniture.

The situation with her children's father was not healthy, and Denise decided to leave.

Now prior to coming here in this area I was in an abusive relationship with my children's father and it just gotten so bad, I was like, 'Lord, get me out of this and I'll never go back.' I didn't. So, my two older kids they wanted to stay with their dad, they knew he was abusive and all, but to them it looked like that's the way things were supposed to be. So, here I go again in a dysfunctional family.

Denise decided to begin to work on her GED when her children started to go to school.

I was in my 30s when the kids went to school, when my baby got into kindergarten... once he went to school it was like there was nothing for me to do so, I figured out going, trying to get my GED, trying to do something, because they put down on a job. I only went to 9th grade, wasn't going to cut it, it wasn't going to cut it. So, I couldn't really get any kind of a job really, it was kind of limited what I could do and so, I was there.

As Denise continues this account, she shifts to talking about being a caretaker.

I did find work with a neighbor who had an invalid brother, and I'm a caretaker by—I'm a caretaker. That's my family. My grandmother, my great-aunt, they were slaves. So, all of the women that are in our family that's all we know how to do is caretaking. Take care of children, take care of house, cook and clean and they did laundry and stuff like that. So, I learned from them and so, I took care of her brother for her.

Denise shared two critical experiences from her adulthood that involved tragedy. The first was when her second oldest son was shot. Denise had a premonition that one of her sons was in danger.

I had a feeling something was going to happen to one of my boys and I didn't know how severe. But I needed to get myself prepared for that and it happened. He got shot—they

were shooting at him and his friends. It was a drug area, a drug-ridden area and he took a bullet at the base here of his neck and he took one a little bit further. But the bullet exited out of his armpits. So, all he got out of it was a grazed lump.

After the shooting, Denise took care of her son until he was well enough to go home.

So, I brought him up here. I got the hospital to release him and I brought him up here and went back to my—I came out of the women center and went back to my sister's house and nursed him. Then when he got the tubes taken out of him, his drainage tubes, he went back to Philadelphia and I went back to the women center.

The second family tragedy was when Denise's oldest son died from a drug interaction in 2010. She told of this traumatic event with more emotion than that with which she told any other, and Denise filled in much more background detail in this account, making it longer than any other piece that she shared. For instance, Denise described what she was doing and thinking at the time. She first elaborated on his girlfriend's leg injury.

My son's girlfriend at the time, my grandkid's mother, was my son's girlfriend at the time. She called me and said, something was wrong with him. He was high, and I wanted to take him to the hospital to get his stomach pumped, but he didn't want to go. His girlfriend, she was at home, she had just come out of nursing home but she had broken her leg and her ankle. She had a deteriorating bone issue and she went and tripped and fell and so, she broke her leg and broke her ankle. So, she was in cast and so, she was home by, so, I'm like, she's home from the nursing home, you need to be there with her. So, I told him go in the house and don't come out or either go lay down and go to sleep. Alisha [her son's girlfriend] *will be in there, she needs to get up, needs help to go to the bathroom, whatever the case may be, and that was on Friday.*

Denise called her son that Friday to "*make sure he was all right*."

The next day, she called the house.

…while we were doing our errands, I'm calling to see what state he is in so I can go speak to him about the way somebody had to call me to tell me to come get him, and how I didn't like and appreciate him being like that.

When no one answered the phone, Denise and her husband then went to her son's house.

So, I went down there on Saturday. We weren't getting no answer at the door, so I think my husband was going to walk around the back and bang on the door - the back door, and my husband had finally got an answer. He heard her [Alisha] *saying, 'I'm coming, I'm coming, I'm coming.' She had a hard time getting up because my son had passed away in the night and his arm was on her and he had already stiffened up and she had a hard time getting up. Plus she had the two casts on. She finally got to the door and she told my husband, 'Something is wrong with Jamal, I can't wake him up.'*

Denise continued the story. When she reached the point in the story at which she saw that her son was dead she became more emotional.

My husband trying to stop me from going into the door and my husband is big. I had—I picked him up and I moved him of my way and when I went in there he was in his boxer shorts and he was cold as ice and he was dead. I just, I don't know, I think I lost my mind. And then he wouldn't let me go back in the house to see him and I wanted to see him again, I said, 'Please let me just see him just one more time.'

When Denise expressed her cry of anguish, "*Please let me just see him just one more time,*" I got goose bumps and could not help becoming choked up. Denise was determined to see her son.

They wouldn't let me go back in there, and all that. I know I didn't care about that it was a crime and it would have been treated as - they had to find out whether it was a homicide, or whatever the case may be, or voluntary. Because I grabbed him and I picked him up and I'm like, 'NOO', *like, you know, this is not happening. But it happened. It*

was a really bad drug interaction and the drugs took him. He was only 32, I just lost him in 2010.

Denise's story of her son's death epitomizes Denise's repeated statement *"I had it rough."* This emotionally charged event impacted not only her personal life but also her educational experience. Her son passed away during what turned out to be Denise's last semester at Central College. She finished the semester with some passing and some failing grades. In reaction to her grief, Denise began drinking heavily, and even though she had been in recovery for nearly 4 years at the time of the interviews, she has not resumed her studies.

In the trauma from her son's death, Denise was drinking heavily.

Yeah, and that was my oldest son in this, this life. I had to—I had started drinking and I was just drinking and drinking, drinking, drinking every time I opened my eyes I wanted to drink until I decided that's not the way to go.

At this time, Denise was caring for two of her grandchildren.

I was taking care of two grandchildren at the time. I had custody of them and they were seeing me drop down, falling and stuff like that. I looked out my window—this face, I looked at her eyes and she was like, 'Nanna.' I was like 'Okay.' So, the next day, well, that was Thanksgiving holiday. I was still drinking and they had come up from Virginia for the holiday because I had to give them back to their mother because I couldn't take care of them at that time. I didn't want to give them back to their mother but I wasn't able to take care of them in the state that I was in, so I let her take them. That Thanksgiving that they came up to visit I did the dinner. I think I can cook blind because I know what it's supposed to smell, how it's supposed to feel. But anyway, I did this big dinner and everybody came and ate it and I was drinking and stuff.

After cooking a magnificent meal as she often did, Denise, in an act of self-sufficiency and independence, made the decision to seek treatment.

But that Sunday morning I went to White Deer (alcohol and drug treatment center), I put myself in White Deer. My husband wanted to drive me there and then my cousin wanted to take me there. I said 'No, I don't want you to drive me because then it's like you took me.' And I didn't want my cousin to drive me because he would then—it's like he took me. I'm going to take myself. I made the decision and let them come and pick me up. So, they came and picked me up that Sunday and I was finished drinking and everything like that.

The day was some 2 years after her son died. She had it rough.

Denise shared other experiences involving her family that, although significant, were not as traumatic as the shooting of one son and the death of the other. Denise's daughter became pregnant at the age of 13. Denise further described her daughter's pregnancy as embarrassing and recounted dreams she had when her daughter was 16.

My daughter got pregnant at 13 and she had two children. She had that child—she didn't want to have him. Like, you did the work, and I'm a Christian and I don't believe in that, and you're going to have it. She had my grandson when she was 14, she got pregnant 13, had him 14.

Well, when she got 16, I was having these dreams about babies and I'm holding one and she's holding another. Like, 'What is this Lord? Lord, what is this?' To be in church and then your daughter is pregnant or be in church and your daughter got babies. It was embarrassing. But I could have chosen to not stay in church with that, but stuff happened. Just because of what my daughter did didn't have no reflection on me. But I felt people: 'She's in church with her daughter had a baby?' I just felt that. Yeah, I just thought it was embarrassing.

Denise first related the story of her daughter's pregnancies in Interview 1. She revisited the topic in Interview 2, this time speculating how women who don't have fathers in their life make bad choices. Denise again states, "It was rough."

> *We lived in a church-like setting at America Rescue Workers, which was another good foundation that I lifted myself up off of. Here is my daughter pregnant at 13, has a baby, and then she has another one. It was a double embarrassment, it was like, where did I go wrong? It wasn't I went wrong at all; she didn't have a father in her life even though my husband was my boyfriend at the time. There was a man figure but it wasn't her father. So, women that don't have fathers in their life, you pick the wrong men. If your father was abusive you pick the wrong men... It was rough. It was rough.*

Challenges continued as the grandchildren grew up. Denise described a recent incident between her husband and her 15-year-old grandson, who is living in her house.

> *I have my 15-year-old grandson. My husband and him (sighs heavily) got into something real nasty on Sunday morning. So, my husband came down and said, 'You better come upstairs and get over here. I'll throw him out the window. He's not going to tell me what he is not going to do.' I was like, what, I'm taking my coffee Sunday morning and getting my song book together. I'm on a choir and we have these sheets and sleeves and I was pulling out my songs so I can have them in my folder. So, I said, 'All right, give me a minute I'll be out there.' Well, he couldn't wait that minute, so he went back up there. Now, he has a bad heart, and he was raising—like he was—his voice was elevated. Our walls are thin in that little section of the house. The walls are thin, so I know the neighbors heard that. 'You're only 15, you're going to tell me what you are doing? You can leave, you can leave!' My grandson says, 'Well, I'm going then.' And packed his little bag.* [Her husband says]*'Go back upstairs and give your grandmother a hug.' He hugged me. I said 'All right, see you later.'*

> *You know but then my husband said when we left church, that guy* [possibly the minister] *told him he didn't handle it right. And he didn't. But if I had told him that we would have been something. So, all I did is pray, and yeah we got a 15-year-old grandson live with us.*

Some issues and patterns from her youth continue to revisit Denise to this day. When Denise's mother passed away in 2008 she felt that her mother had "left me with her children again."

> *When* [my mother] *passed away, I just didn't want to have to take care of my siblings again, even though they were grown. They still were—they're needy, and we kind of got a little bit of a separation, plus they needed to grow up. But if they need me I will be there for them, but I didn't want to have to be parent to them again. And that was more of my devastation when my mother passed than anything. You left me with your children again. Even though they were all grown when she passed... it was like, she left me with her children again.*

Denise's relationship with her siblings continued to be a cause of concern for her. She still filled the role of parent to them, and she felt they demanded from her without giving back.

> *But it's the call I got though, and instead of running from it I'm just dealing with it. My sisters need me, they know how to call me. Most of the time they don't, so I guess they are all right. I get more from perfect strangers than I get from my siblings, which is a shame. It bothers me some and sometimes it bothers me more than other times. It's like they suck my life energy out of me because they all want... I'm going to be at one place and if you all want to see me this is where I'm going to be. And I don't come down from the mountains and go here and go there and go here and go there. You want to see me, this is where I'm going to be at.*

Central College Experiences

Whereas Denise's decision to complete her GED was primarily motivated by her desire to help her children with their homework and to provide an example for them, her decision to attend Central College was more about finally doing something for herself.

> *It was still my children, and then it was still me getting something for me. Out of all my life when I look and I count this, and I look over this and look—when did I get something for me? So, coming to college was basically me getting something for me, for me pushing myself to get that. I'm never a quitter.*

Denise continued talking about her first experiences at Central College. In the following passage Denise is referring to the rule that the college currently has that if a student fails a developmental course twice they must leave school and transfer in credit for an equivalent course from some other school before returning. When Denise began, the rule was "three strikes" rather than two.

> *But when I came to Central College I had to do those classes, you know, you do the testing and then they see where you have some issues that you need. I came in under the three strike and then after I was here that's when they started the two strike and following God* [I passed] *on my third strike.*

The fact that Denise passed on her third attempt is significant. The rule was changed because the college found that those who did not pass in two attempts almost never passed on subsequent attempts. Denise was the exception to that rule.

> *It's like I have to get it, I have to get it this time and I got it. It was good. So, then the rest of the math was much easier. I think I could have gotten further but if that was all I needed and I had it, I was good.*

Denise continued to describe her experience in developmental mathematics. She said that when she retook the course she needed to enter the class "like a blank slate." She was more correct

about this than I think she knew. The biggest hindrance to success that I see in my developmental mathematics students is that they want to hold on to what they think they know about algebra, rather than allowing me to help them to learn it correctly.

> *Every time I had to take the math course over because I might have not passed it, I went to that class like a blank slate—I didn't know nothing. So, then that way I was able to grasp it and I can get with the algebra, I can get the answer the professor wanted.*

Denise related how she had to learn to reconcile her self-learning, much of which she did in her head, with showing the algebraic steps in writing that her professors wanted to see. Denise does an excellent job of describing how her thought process grew.

> *But some of it I did it in my head, some of it I did it on paper. I had the right answer but I couldn't put all the work down because some of it was up here. Once I learned to flip that and get it down on paper then I can have it here and there. But most of the steps that you do to do an equation, I did up here and I would just go through, let's say maybe I'll do steps one, two, and three is coming from my head, and four I might do the work. Like, I didn't show all the work for the whole equation.*
>
> *I couldn't figure out why wasn't I showing all the work, and then I had to go and do a problem and realize that I was doing it up here, and then I would just finish out* [steps] *three or four, or maybe not even start. So, I wasn't putting all my work down, so, it's not that I had the answer wrong, I didn't put all my work down.*
>
> *So, when I found out - it clicked that I had to show the work they want to see - how I got that answer then I got better with the algebra.*

As part of Interview 3, I presented Denise with a copy of her transcript. I had highlighted dates of the semesters (e.g., *Spring 2006*) in one color and her mathematics courses in another color. I asked her to go through the transcript and to describe what she could about her experiences during each semester. Denise attended Central College for 15 semesters, so she

spoke more about years than about semesters. Rather than talk about classroom experiences or academic issues, Denise described how she had withdrawn or received poor grades many times due to her caretaking responsibilities.

> *I had just got the grandkids in 2002... In 2003 I was working 2 jobs. I was working here at the college a little bit in the library. I had the grandkids and all my studying I did at school, because I knew when I got home it was get the kids ready for daycare or whatever and do dinner, and get their clothes laid out for the next day... I lost a lot of sleep...*
> *I think I withdrew in '05 and then I came back and then I withdrew again because my stepfather got sick and he had cancer and we didn't even know he was sick...*
> *2008. My mother died in June. She died in June. I withdrew to care for her and then the professors I had, when my finals came, they allowed me to come back and do them... I was in school in May, I was supposed to walk with the class down at the Community Arts Center. I got to walk but there was classes I had put off because she had gone to the hospital and I had my finals to do. I went to the Professors -the ones that I hadn't finished - I went to the Professors and asked them to give me an extension to make it up because of my mother's health, and that was like in May. So, I did get to walk with my peers and stuff but I didn't get my certificate. I didn't get to get my certificate until I came back and finished my final, but I did finish it.*

Over the 15 semesters that Denise attended Central College she registered for 130 semester hours and completed 76. She has not been able to find a job using the Health Information Technology Certificate that she earned. Despite that, Denise considers her experience at Central College to be positive.

> *I've really had a hard—I just thank God every day that I'm here that I got what I got from Central College. I really would love to have gotten some more, but life has not turned that page for me to come back [to school]. I still got the securities to the loans, at*

least be able to pay something on them. So, I really need to go to work. But at my age it is hard to get work now... I'm getting more of an inner satisfaction than a material satisfaction for what I do right now. I don't think I would change.

Before closing Denise's story, one more account needs to be shared. Denise told about working odd jobs in the neighborhood when she was young to earn money to buy groceries for her family. Now she speaks with pride that she has money to pay the rent and the utilities so that they will not be shut off. In particular, Denise speaks proudly to be able to provide for her children in a way that her mother could not do for her.

I'm not getting as many hours as I want, but my bills are paid. I have a roof over my head, nothing is shut off, I got food. I'm okay with not having a big salary, you know what I'm saying. But there is just sometimes that you want to have a little extra money to do something. Instead I'm not going to take it from something that you know you got to pay that electric bill and you know you got to pay that gas bill.

My thing with me is since where I come from, your lights, my mother's lights, sometimes the lights and gas was off, or maybe the gas was off and we had electric. Either way something was always off or the rent was not paid. I didn't want that for me, so my kids see us pay bills, I will pay bills and be broke today. My daughter will say, 'Wait, she'll pay all her bills and be broke but her bill is paid.'

She knows she's not going to get put out, nothing is going to get shut off and even if it's just a little bit of food, you can make something out of it. I told my kids, I don't care what you've got in that kitchen, keep this, keep that, dah, dah. You go make something out of what's in that kitchen, may not be what you want to eat but it will fill that hole or gap because I felt it on many days.

I spent more time with Denise than with Janet or Beverly. We talked on the phone perhaps a dozen times before we first met. Several times when I was not home when Denise

called, she and my wife had lengthy conversations. Denise was very interested in my work, and wanted to share experiences during our phone conversations. Our first interview was delayed numerous times because of family issues that Denise had to attend to, so I knew before I met her that she was a family caretaker. I am very thankful for how graciously Denise shared her experiences with me, and for the insights she provided.

My wife and I have grown to appreciate Denise as a friend, and recently we sought her counsel. There a young woman who works at a diner where we often go for breakfast who confided in us that she is in a physically abusive situation, and did not know what to do. I called Denise and asked her advice, saying that I know she has helped so many people in the past, perhaps she could give us some counsel for this young lady. Denise gave very good advice, which we passed along, and we hope it is heeded. My wife and I plan to stay in touch with Denise, and would love to treat her and her husband to dinner to express our appreciation. Perhaps one day we will be fortunate enough to enjoy some of her famous home cooking.

Conclusion

Denise has experienced many difficult and tragic events in her life, yet she maintains a positive outlook on life. She spent her childhood raising her siblings and caring for her mother. She saw her sister get seriously burned, then experienced a serious burn injury herself. Her school attendance was sparse, so she self-taught. As an adult Denise nursed one son back to health after he was shot, then lost her oldest son to drugs. She has raised her own children and helped raise her grandchildren. Denise decided to pursue a college education to finally do something for herself, and attended Central College for 15 semesters. She earned a certificate in Health Information Coding while continuing to care for family members across three generations. Denise very accurately describes herself:

I've had it rough.

I am not a quitter.

I am a caretaker.

I just love people.

Through the experiences that she shared during our interviews—not only *what* she said, but *how* she said it—Denise often caused me to revisit my positionality as a researcher. This will be discussed in chapter 7, along with commentary Denise provided on her experiences as an older nontraditional Black woman attending college, and what recommendations she would make for improving developmental mathematics education.

Chapter 7

Implications of the Results

In this chapter I address my research questions. I begin by revisiting my research questions, and then I examine in greater detail how the interviews with the women have reshaped my theoretical framework, and thus the answers to my research questions. There are two research questions, each with multiple parts. Research question one is about precollege experiences and research question two is about developmental mathematics experiences. The research questions are restated below.

Research Questions

1. How do the precollege life stories of individual Black women who enter college as nontraditional students shape their attitudes toward mathematics and their expectations of success or failure in developmental mathematics?
    a. What stories do individual Black women choose to tell about their precollege educational experiences, and why?
    b. What stories do individual Black women choose to tell about their precollege life experiences, and why?
2. How do individual Black women who enter college as nontraditional students perceive their experiences in developmental mathematics courses?
    a. What stories do individual Black women choose to tell about their developmental mathematics experiences, and why?

b. What perception of success or failure do individual Black women who enter college as nontraditional students have about their experiences in developmental mathematics?

c. Based on their experiences, what recommendations do these women make for change in the developmental mathematics program?

Question 1 has two parts, indicating that educational and life stories are distinct. The stories told by the women showed this to not be true; their educational stories were inseparable from their life stories. My first research question, developed in an *a priori* manner, reflects a flawed framework. Question 2 contains the underlying assumption that the women place a level of significance on their developmental mathematics experience that turned out not to be there. The women took a practical, straightforward approach to their developmental mathematics courses, focusing more on personal and social issues than the content of the mathematics courses. In cases where they did not pass a developmental mathematics class, they took it in stride and did what they needed to do to pass it on the next attempt. The most specific recommendation that the women made for improvement of the developmental mathematics program was that there should be a seminar or course offered to nontraditional students to orient them to the graphing calculator that is used in all of the mathematics courses at Central College.

My second research question reflects an incomplete framework. As I considered the significance of the stories that the women told in terms of my research questions, I found that rather than force answers to my original research questions, I needed to rethink my theoretical framework. The revised theoretical framework allows me to answer the research questions in greater detail, so I begin with that revision. As I outline the new theoretical framework, I answer Research Question 1 in a section titled *Life Experiences and Educational Experiences Are Inseparable*, and parts a and b of Research Question 2 in a section titled *The Ongoing Experiences Of Three Unique Individuals* where I examine the women's practical, straightforward

approach to developmental mathematics and their emphasis on personal and social issues. Research Question 2c is answered in a section titled *Implications For Developmental Mathematics*.

Revising the Theoretical Framework

I have learned over decades of teaching quantitative research methods that researchers do not always find what they think they are looking for. Indeed, having results that are not "statistically significant" sometimes leads to a meaningful conclusion. A famous example of this is Karl Lashley's experiments in the 1920's trying to establish specific trace-location of particular memories in the brain, which he called *engram*. He taught rats to run mazes, then put lesions on various parts of their brains to see if the memory could be eliminated. His results were not significant; he could only conclude that the greater the damage to the brain, the more it affects the memory. These "statistically insignificant results" caused memory researchers to focus on modeling memory as being fluid or electrical in nature, spread throughout the brain. More modern research is revisiting the location-specific concept of memory, recognizing that certain types of memory are indeed location-specific (Tonegaw, Liu, Ramirez, & Redondo, 2015). It turns out that the main problem with Lashley's research was that learning to run a maze is a complex memory task that activates many parts of the brain (Dewey, 2004).

The lesson to be taken from the engram example is that when as researchers we do not find what we expect to find, we need to examine the results to understand whether our hypotheses are incorrect, our methodology is flawed, or perhaps there is another explanation for the results.

In my study I was not testing a hypothesis, but I did have an expectation of results. I expected to hear stories from Black women who entered college as nontraditional students that shed light on their experiences in developmental mathematics. The stories shared by Janet,

Beverly, and Denise were indeed insightful, and part of that insight was that I needed to rework the diagram illustrating my theoretical framework (see Figure 1). I hold to the intersectionality-based position that being *Black*, *female,* and a *nontraditional college student* are not separate

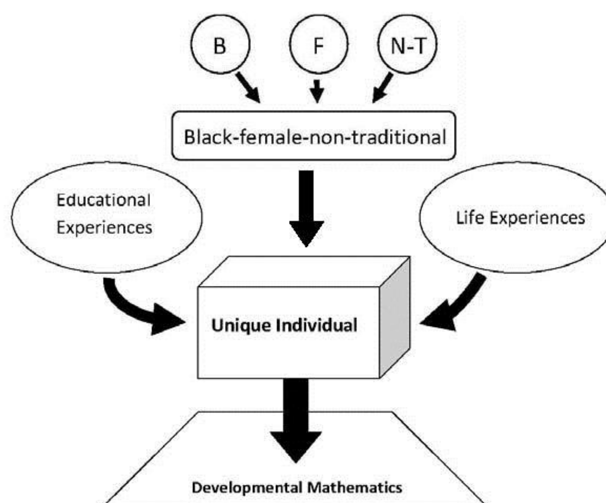

Figure 7-1. Factors contributing to the unique developmental mathematics experiences of Black women who are nontraditional students.

constructs which can be viewed as overlapping regions, but rather that they interact to form the single construct of a *Black-female-nontraditional college student*. At different times, each of the women talked about age, gender and race. They never indicated that any one of those attributes exclusively defined their experience, and they clearly embraced the idea that all of these attributes are essential to their identity. Denise summed it up aptly "It was the race and the gender more so, but my age didn't help either." The first aspect of the framework that needs to be restructured is the original depiction of life experiences and educational experiences as separate.

Life Experiences and Educational Experiences Are Inseparable

The structure of Research Question 1 implies that educational and life experience are distinct, but this was not borne out in the stories told by Janet, Beverly and Denise. In retrospect it may seem that the inseparability of life experiences and educational experiences is obvious, or that it is simply a matter of the semantics of a definition. It could be said that all experiences are

life experiences, therefore educational experiences are a subset of life experiences. Alternately, life experiences could be operationally defined as those experiences not centered about formal education. This operational definition of life experiences was implicit in the original diagram. It seemed to make sense, and was accepted as a feasible approach by multiple educational experts.

When I think of my own educational experiences, they mostly stand alone as experiences in learning about particular subjects, earning degrees, or as anecdotes about getting in trouble in school as a child. I have been in school as a student or teacher all of my life. What and where I was studying/teaching serves more as time stamps than as critical experiences for me. My perspective as a White male who grew up in an upper-middle-class home was that education is taken for granted. There was no question as to *if* I would go to college and then to graduate school, it was simply *what* would I study and *where*. My adopted father and his father had both been doctors, and it was assumed that I would pursue a similar level of education. The details of my education were only nominally important. Therefore, from my personal perspective of White male privilege, it seemed natural to distinguish educational experiences from life experiences. However, when Janet, Beverly and Denise shared their critical experiences, this defined distinction between educational and life experiences could not be maintained.

A strong theme in Denise's educational story was that she was self-taught, and her self-teaching cannot be separated from her life stories of being a caretaker for her siblings and mother. She self-taught because her home responsibilities made regular attendance at school impossible.

> *I missed a lot of days, so, while I was at home being mommy while my mother was whatever she was, I studied. I just went through the book and... I taught myself to read.*

Denise indicated that one reason she dropped out of school at a young age was so that she would be home to look after her younger siblings in case a childcare officer came to the home. Despite her responsibilities, she read to learn.

So, I kind of taught myself. I really didn't finish high school. Actually I dropped out in the ninth grade... I was ever reading, ever learning while I was at home because when the children officer came I didn't want them to take us and separate us.

Denise also said that her self-taught reading was her escape from the "rough times" she described from her childhood.

That was it for me, books, learn something new... That was my get away from what I was in, was my books.

At its core, Denise's story of being self-taught is a story of family responsibilities and coping with her childhood situation as she read to learn, illustrating how she does not distinguish educational experiences from life experiences.

Janet shared critical experiences that wove education into all aspects of her life. She related that she was motivated to complete her GED because of her children's need for help on their homework and her embarrassment at being an under-educated parent.

When I began to have children, and the work—the homework, started to come in. Yeah, it got pretty bad and I said I got to get my education... So, I think it was more embarrassment too, because the kids they play sports and I began to be that mom that kind of stood out. Here I was with no education, nothing behind my name but just a good mom. It wasn't enough.

As Janet told about her experiences at Central College, it was not just about classroom learning, it was tied to her family and her sense of self. She said, through tears as she described Central College staff,

They've helped me build beautiful children... It showed me that I can work and I can do some things. This is like my haven, it honestly is. It's really turned me into a woman.

Janet's relationship with some of her professors goes beyond the classroom. She spoke in detail about two of her math professors.

> [Professor Shirley's] *teaching method was—it was loving. It was like a daughter, kid, parent. It wasn't professor—I had to zoom in sometimes and call her a professor.*
>
> [Professor West] *was that authoritative parent for me here at Central College.*

When talking about all of her professors at Central College Janet said "*They've been like family."* The critical experiences Janet chose to share indicate that her educational experiences are among the most significant life experiences she has had and provided her with an extended "family" that helped her raise her children. These experiences cannot be viewed as pertaining only to education.

Beverly's educational experiences are also interwoven with her life experiences. This inseparability between educational and life experiences is illustrated in numerous accounts related by Beverly. She did not start school until she came to live with the foster family that eventually adopted her. Beverly's experiences of starting school late and coming to live with her new family represent a single critical experience.

> *Well, I started school late. But just to say, I wasn't a typical child, I was in foster care and just went through a whole lot by the time I got into one foster home. I was about seven years old, and I hadn't been to school yet. So, I didn't start in kindergarten, I started in the first grade, some kind of way. And I didn't know anything, so everything was intimidating*

Beverly relates that grades were essential to her sense of acceptance in her new home and from her foster mother, as well as for her self-esteem.

> *I wanted—as an over achiever, I wanted to please my mother... I took joy in doing and being the best... Because it was—it was the only thing I had... I took refuge in that. At least I had something, and I was doing something very, very well.*

Beverly recalled that when she began her study at Central College her self-esteem was so low that she erased answers on her math placement test so that she would be placed in a lower level course.

> *When I took the placement test, I freaked out... I went back and erased answers so that I wouldn't be put in a math class that was too difficult for me... Just because I was beaten in every respect... I think I was afraid of the failing, I didn't want to fail.*

Although Beverly had always done well in school as a child, and she continued to excel at Central College, she related that her social anxieties caused her to doubt her academic abilities.

> *I had a little social anxiety. And that was because I was so uncertain of myself and I—I just was so concerned about how other people saw me, and what they thought of me... but I had such low self-esteem. So coming into the classroom I was pretty laid back and just nervous, nervous all the time. Until I got my momentum and I was okay, unless I was challenged... I doubted my knowledge... my history of abuse does something to your head, you know. It does something—it did something to my mind.*

Beverly's educational experiences were woven together with her acceptance by her new family and with her own self-esteem. For her, educational experiences are life experiences.

Because of how the educational experiences of each of the women were so entwined with their other life experiences, I believe it is more accurate to place educational experiences as a subset of life experiences. Figure 2 illustrates this relationship. Also, I have qualified life experiences and educational experiences as *prior*. This is because I want to distinguish between the women's experiences prior to starting college as nontraditional students from their subsequent experiences. Further, I have made the border of the *prior educational experiences* region dashed to emphasize that these experiences are not clearly distinguished from prior life experiences. This is not a matter of convenient definition, but rather a result of seeing how inextricable educational experiences were from other life experiences for all three of the women. I am

qualifying the unique individual as *Unique Individual as an Adult Learner* to again emphasize that this represents the woman from the time of her beginning college as a nontraditional student. The stories that Janet, Beverly and Denise told were told in the present tense, so that even stories of childhood experiences were told from the perspective of Black women who entered college as nontraditional students. I also added a bidirectional interaction arrow between *Black-Female-Nontraditional* and *Prior Life Experiences*. This is to indicate that the women's prior life (and educational) experiences, along with being a Black female nontraditional student, did not act independently; they interacted to affect the development of a unique individual and influenced how she remembered and chose to relate her experiences.

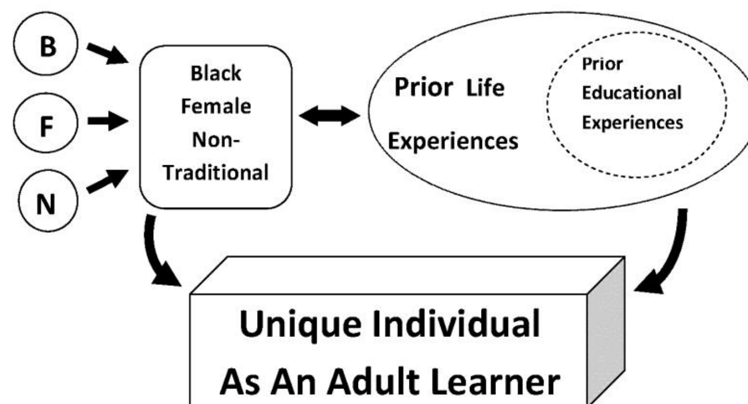

Figure 7-2. The interaction of educational experiences as a subset of life experiences as understood by Black female nontraditional students forms unique individuals.

The educational stories told by Janet, Beverly, and Denise were really life stories with an educational theme. These stories could not be considered independent of the life experiences that occurred in conjunction with them. The women chose to share these stories because they believed that they were critical to their development into the unique individuals that they were when they began their college study, and to the unique individuals that they are today.

The Ongoing Experiences of Three Unique Individuals

In Research Question 2 I am interested in the developmental mathematics experiences of the women. The stories told by the women about their developmental mathematics experiences revealed that developmental mathematics is a much higher priority to me than it is to them. The final revision of my theoretical framework is based on the realization that the unique individuals I interviewed were not focused exclusively on their developmental mathematics experiences, but rather on their ongoing experiences as adults. Figure 3 contains the fully revised theoretical framework diagram. Part of these ongoing experiences are formal educational experiences, with developmental mathematics merely a "prickly" part of formal education. I made the developmental mathematics region prickly (with jagged edges) to indicate that it is often a problematic part of formal education. There is a bidirectional arrow between *Unique Individual as an Adult Learner* and *Ongoing Experiences* because these ongoing experiences continue to shape the unique individual.

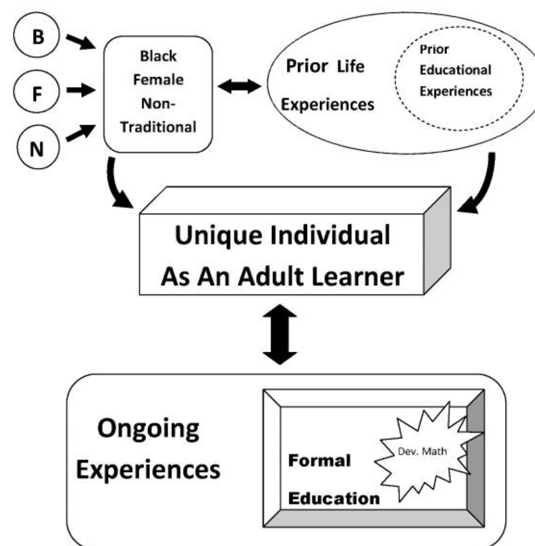

Figure 7-3. How unique individuals interact with prior and ongoing experiences.

The appropriateness of these changes may be clear in retrospect, but at the start of my research project it was not so. I first became interested in this research topic because of students I observed in my developmental mathematics classes. The literature on developmental mathematics, particularly the work related to race, gender, and age, was mostly written from a deficit perspective. The literature's emphasis was on how Black students scored lower on tests and failed at a higher rate than White students, how females' experiences in mathematics were more negative than those of their male counterparts, and how nontraditional students faced obstacles about which traditional students did not have to worry. The picture painted in the research literature was that there is a problem in developmental mathematics, and the problem is exacerbated by race, gender, and age. As a math professor who teaches developmental mathematics and is concerned about his students' success, I saw the problems outlined in the literature as issues that need to be understood and addressed. However, Janet, Beverly, and Denise did not see it that way. Instead, they employed a practical, straightforward approach to the coursework, and an emphasis on personal and social issues. The women saw their developmental mathematics courses as a part of their college curriculum that they needed to get through so that they could move on in their education. They recognized the difficulties in the courses but did not view them as monumental obstacles. Even when asked specifically about developmental mathematics, the women tended to focus on social and relationship issues.

Practical, straightforward approach to developmental mathematics. All three of the women exhibited a practical, straightforward attitude toward developmental mathematics. They seemed to say "Okay, I have to do this, so let's get it done."

When asked how she felt as she first came into her developmental mathematics class, Janet said

> *I'm going to fail, I'm going to be repeating it, and I'm going to be okay with that because I need to get the information, and go at it again.*

When she found herself failing the course Janet just applied herself harder. She was determined to learn, and not to waste any of the opportunity that she had. When she succeeded she was rightfully proud, as indicated by her saying that Cs were like Bs to her.

> *By midterms I was failing miserably, but I lived in her office. I was putting forth the effort, and still couldn't get it. Long hours with her at nights... No, I won't drop it. I never dropped a class and I won't because I feel I want to know everything. I need to soak that in, and it takes sometimes two and three—and you see I'm only getting Cs but they're Bs for me.*

Rather than withdrawing from the class or making excuses, Janet was determined to not give up. She took responsibility for her own success, noting that if you do not get help from one professor, you can go to another professor.

> *Don't give up. Stay with it, hang with it even when it's rough. That's what I did... The one thing I've learned here is don't give up. If you want it, get it. It's here, and if you can't get it from one professor, there is one down the hall. There is a lot of professors in mathematics.*

Janet struggled with her college-level mathematics course, and briefly considered changing majors because of it. Then she decided to face this obstacle and get through it.

> *Where is the major with no math? So, I had to buckle down and do it, because I knew I wanted the major... Well that was one of the criteria* [I] *had to get through, so it was just another milestone. It needed to be jumped over and* [I was] *going to jump over it to get it.*

Denise also faced her developmental mathematics courses in a practical, straightforward manner. She had withdrawn from MTH 005 two times and said about her third attempt:

> *I was determined when I came in... and I acted like I didn't know anything. By me blanking my mind that I knew anything, I was able to take it in. It finally clicked.*

Although Denise has always been a self-learner, she acknowledged that in order to get through her math classes she had to find a way to solve the problems using the procedures that her professor wanted her to use. By doing this Denise was setting aside her own understanding for the pragmatic purpose of pleasing her professor.

> *The professors, you have to give them what they want. You can go all around it, maybe your good talk or whatever, then your thought might be right, but you didn't give him what he asked for. So, I couldn't do my math homework the way he told me but I can do it the way he told me in my head, but give him what he wants on paper. So, I got the click of it and then I did better.*

For Denise, there was no option to give up or to go elsewhere. She faced her need to succeed at Central College in a practical, straightforward way.

> *I'm not a quitter... But my motivation was I'm going to get this. My drive was I'm going to get this because I can't go nowhere else.*

Beverly earned an A in the only developmental mathematics course she took, a course that she could have tested out of if she had not sabotaged her placement test. So, it is not surprising that she also approached this course in such a practical fashion.

> *I was kind of nervous going in. But because going in it was very basic, I was fine with that. Nothing was too difficult to understand... I put a lot of effort in, I put a lot of time in to get the whole, because there was a lot of work, a lot of homework.*

Janet, Denise, and Beverly all faced their developmental mathematics courses in a practical, straightforward manner, despite having very different experiences in those courses. They viewed their developmental mathematics courses simply as items on a list of tasks they needed to complete to achieve their educational goals.

Emphasis on personal and social issues. As Janet, Beverly and Denise shared stories about their educational experiences at Central College, it quickly became obvious to me that

those stories were situated in the events of their personal lives, and in their views of social issues. Denise emphasized her family responsibilities, and Beverly her family and ministry responsibilities. While Janet acknowledged her family responsibilities, she was not willing to make any excuses for not succeeding in school and spoke critically of Black women who do not take advantage of educational opportunities.

As noted in her story, Denise is a caretaker. When reviewing her transcript semester by semester she focused on who she was caring for at that time, rather than on what she was doing in the classroom.

> *I had just got the grandkids in 2002... In 2003 I was working two jobs. I was working here at the college a little bit in the library. I had the grandkids and all my studying I did at school, because I knew when I got home it was get the kids ready for daycare or whatever and do dinner, and get their clothes laid out for the next day...I lost a lot of sleep... I think I withdrew in '05 and then I came back and then I withdrew again because my stepfather got sick and he had cancer and we didn't even know he was sick... 2008. My mother died in June. I withdrew to care for her.*

For Beverly, getting a B or a C in a course was an academic disappointment. She recalled struggling in her MTH 153 (Topics in Math) course and twice told of how she left an exam without finishing it so that she could attend an activity her son was participating in.

> *I had a son who had some issues, and it was just—I did not do well in that class, I remember that. I remember having to leave a test. I had to choose whether to take this test or to go and see my son perform some place. So, I did as much as I could, and then I left, I remember that.*

Beverly also recalls being very busy with her ministry during this course.

> *I was really involved with church. I was so busy, I don't even know when I had time to breathe to tell you the truth.*

Janet would not make any excuse for herself, and would not accept excuses from other people for her failure in school.

I'm a mama of seven, and I don't miss—assignments aren't missed. I've probably missed in the whole years I have been here, I can't say 10. I just don't miss, I don't miss assignments. So, no, I think time management—and I think people that come in when you are ready, you find time. I mean I'm at football, kid's basketball—I'm all over the place and I have my books with me... So, I don't accept you failing because I know about the tutoring center, I know about professor office hours. So, you can't tell me that.

Janet, Beverly, and Denise chose to tell these particular stories about their developmental mathematics experiences because they were significant in their life stories. They viewed their successes (and temporary failures) in developmental mathematics in a practical, straightforward manner, recognizing that these courses were simply stepping stones in their life paths.

Views of Developmental Mathematics

In reference to Research Question 2c, I asked the women for their recommendations for improvement of the developmental mathematics program. The single issue that Janet, Beverly and Denise all agreed upon is that there needs to be a separate seminar/course to introduce nontraditional students to the TI-84 graphing calculator.

The TI-84 Graphing Calculator: Intimidating to Nontraditional Students

The developmental mathematics experiences of Janet, Beverly, and Denise were very different. Janet took her course twice, staying through the first attempt even though she knew she was not going to pass. She knew she would have to learn the material eventually and was not

willing to let any opportunity to learn pass her by. Denise took three different developmental mathematics courses. She passed the first course on her second attempt, passed the second course on her third attempt, and took the third course twice without passing. In each of her five unsuccessful attempts at developmental mathematics, Denise withdrew from the course. Beverly took one developmental mathematics course and earned an A. Had she not sabotaged her placement exam, she likely would not have had to take the course at all. Here were three women with very different approaches to their developmental mathematics courses and three very different experiences, yet they all agreed that for nontraditional students the graphing calculator is problematic.

The subject of the graphing calculator came up twice for each of the women. The first was when we discussing their experiences in developmental mathematics. Interestingly, each of the women commented on the overall difficulty of the course without being specific as to what caused the difficulty. As a probing question I asked if the problem was variables, the calculator, graphing, word problems, or...? My wording was not identical for each of the women, but the calculator was always offered as one of several possible sources of difficulty. The second time the subject came up was when I asked them to comment on themes from the interview Phase 1 (the theme originally arose from Janet's comments in Interview 1, which are revealed later in this section).

> Janet: *It wasn't just learning the math, you had to learn the calculator. That was no good if you didn't know how to put the equation. So, definitely it was rough, it was too much stuff to remember. It was overwhelming. I think if I had some education on the calculator, have my way around it, then I [would have done better].*
>
> Beverly: *I don't believe I had an overwhelming response to it, not that I remember. I didn't remember being afraid of it. Oh wow—I have never seen anything like that in my life!... I hadn't seen a calculator like that. I was just wondering what the functions were*

and never did learn how to use that thing—that calculator—probably the way it could be used.

Denise: *I think there was some help out there for the calculator but it was just very briefly. It was just like an intro I think—it didn't go into depth. It didn't help you along the way. I think they did do an intro one year with the math to the calculator because it was changing from one to that one, and they did just a little bit of a seminar. But they didn't go the whole long way.*

Part of the problem for nontraditional students is that their classmates are mostly fresh out of high school and are comfortable with technology, while they may have never seen this technology. Janet's unfamiliarity with the calculator caused her distress as she sensed her classmate's frustration with her questions.

They knew it because of high school. You know, they knew their way around the calculator. [The professor] had to stop to come and try to help me with mine, you know what I mean—after a while I felt like I was holding the class back so I wouldn't even ask. I just let her go on and you know because kids can get frustrated, with continuing to stop the class... I sensed it, you sensed it, you knew that you shouldn't be holding up your classmates. It was like sighs, you know in deep breath, so just like—hit the pencil. You know, professors don't catch that, but students know. You get those whispers—'What is she doing, that idiot?' You know something like that... Especially when you are older because they're, you know, they are on the ball with a lot of things.

Janet, Beverly and Denise all agreed that more instruction besides what was done in the classroom was needed, but they differed on how long the sessions should be.

Beverly: *I do see value in that suggestion... I believe some would benefit from this... If you are saying a couple meaning two, I just don't think it is enough. Because we learn by repetition, and if we are already a particular age, it takes us sometimes a little bit longer*

to get acclimated. So, I do think it should be longer unless you are talking 2full days, and even that could be overwhelming when you are dealing with nontraditional individuals who have families, jobs and the like, so probably a semester long or at least half of it—I don't know—half of the semester or something.

Denise: *Seminars is not what they need, they need a class. They need a full class, maybe a 30 minute class to show where you are... 30 minutes throughout the semester they need... Not a 30 minute one time, because that's not going to help them when they get out there... They need somebody throughout the session that they can go to that can help on what they're graphing on the calculators.*

The interviews with Janet, Beverly, and Denise were not the first times I heard nontraditional students express consternation over the graphing calculator. In fact, I hear it anecdotally from my students regularly. Last year I did a preliminary study in which I interviewed two Black women who were current nontraditional students at the college. One of them expressed the need for an orientation course very eloquently. I quote her below with her permission.

It doesn't have to be an entire course, but if you could do at least, say, 4 to 6weeks. It depends on the student. If you don't pass this, you don't move on to [math course] *004. Four to 6weeks you have come here at this time and this date and you have to work on your math. We see that as math, college level math. That's what* [math course] *004 is to nontraditional students. They need to be refreshed on the basics of the basics before they get to the basics of algebra and things like that. I say this firmly and I'm going to stick to this.*

Developmental mathematics instructors need to be aware of the stress that nontraditional students experience as they learn to use technology such as the graphing calculator. I use the graphing calculator extensively in my classes, and I have developed strategies to maximize the

success of all students, being particularly cognizant of the struggles my nontraditional students face. When doing calculator work I have the students pair up, actually moving their desks next to each other. If there is an odd number of students in the class, there will be one group of three. Working alone during these sessions is not an option. I have noticed that students are more willing to let themselves fall behind than they are to let a fellow student fall behind, so as we learn to use the calculator I tell the students they are to give a little wave to me when *their partner's calculator* has the same screen as is projected for the entire class. I tell them to help each other, and if they are both "stuck" to call me over. This creates a collegial atmosphere to which the students respond positively. Manner (2003) makes suggestions that mirror my practice. She recommends that when working with nontraditional students that the instructor should orient them to the technology in as personal way as much as is possible, and to caution students not to panic when problems arise.

Because problems will arise, and I do not want my nontraditional students to panic, I make use of the error messages built into the TI-84 graphing calculator. An example of an error message would be if the student types 5 +÷ 8 then presses *enter*, the calculator will show the following screen:

ERR: SYNTAX
1: Quit
2: Goto

When the student presses 2 for Goto, the previous entry is shown with the cursor flashing on the error. I enthusiastically tell the students to always share an error message with the class when they get one, so that we can all learn from it. This helps struggling students in two ways. It slows down the calculator work, allowing students who are less experienced to better keep up, and it validates learning by trial and error. Revealing an error message is treated not as a mistake, but

as a learning opportunity for the entire class. Exploring the result of calculator keystrokes rather than copying instructions aids student comprehension (Vazquez, 2003). When students explore the calculator in this fashion, they learn that making mistakes when operating the calculator is essential for understanding how it operates.

Out of all of the possible suggestions that the women could have made for improving the developmental mathematics program, only the need for an orientation to the graphing calculator was suggested. Many studies have been done that make compelling recommendations for improving developmental mathematics programs, with most of them focusing on course delivery structure (e.g., traditional, online, hybrid, module-based, self-paced). In chapter 2 I discussed recommendations by two researchers for college readiness programs that emphasize organization and study skills along with ongoing academic counseling and tutoring (Bahr, 2008; Fowler & Boylan, 2010). However, I have not seen a recommendation for an orientation to the graphing calculator in the literature to date. It should be noted that these college orientation courses are intended for all first-year students. The calculator orientation seminar/course recommended by the women is intended particularly for nontraditional students. I am confident that the suggestion made by Janet, Beverly, and Denise is valid, and I anticipate that it will be well received by the mathematics faculty and the college administration.

Summary

The purpose of this chapter was to answer my research questions. Part of answering my research questions was recognizing that my theoretical framework was flawed and incomplete. I revised my theoretical framework based on what I learned from the interviews with Janet, Beverly, and Denise. I found that the women do not distinguish educational experiences from life experiences, and that they approached their developmental mathematics courses in a practical,

straightforward manner, recalling their developmental mathematics experiences in relation to their personal lives rather than classroom incidents. The women recommend a seminar or course to orient nontraditional students to the graphing calculator so that they can compete with the traditional students in developmental mathematics on even footing.

Chapter 8

Implications and Directions

In my research questions I asked what educational and life stories the women would tell about their precollege and developmental mathematics experiences, and why would these chose those stories. Analysis of the interviews revealed that they did not distinguish between educational and life stories, and that their approach toward developmental mathematics was practical and straightforward. Though difficult, they did not place the level of significance on these courses that I had anticipated. In this chapter I move beyond my research questions to consider the way in which this work opens a window on Black Feminism and to note implications of the study for developmental mathematics instructors in general and for me in particular

In my attempt to answer question about their experiences prior to and during developmental mathematics courses, Beverly, Janet, and Denise graciously shared their life stories with me. In several instances the women chose to share their viewpoints on how Black women interact with each other, within their community, and at college, as well as how Black women are perceived to function within their families. Insights from them are critical to understanding the implications of my study.

Women In The Black Community

Janet and Beverly both brought up issues they experienced with women in the Black community. Janet spoke about problems that Black women have with procrastination, poor parenting, unwillingness to accept advice, drug and alcohol abuse, and being held back by men. Beverly talked about specific problems of nontraditional Black women in college, saying that sometimes rather than taking personal responsibility they blame others for their problems. In this

section I present the comments made by Janet and Beverly, then examine them in light of the concept of *Sisterhood*.

Janet's Comments

I asked Janet what advice she would give to other people in situations similar to her own. She spoke very long and passionately on this subject.

> *Well, I would say because my life centered around teen pregnancy and I left—a man held me back from my education. I let my upbringing hold me back and I let people that thought I wasn't capable of doing it hold me back, and of course self-esteem. So, for me to tell someone I would want to target women who are laying in the house with a guy, or on drugs or whatever.*
>
> *But just these things that I see in the community now, where we're just procrastinating and it's going to come back and haunt. It's going to—if it doesn't haunt you it's going to haunt your children. Then you'll bring up another generation of dysfunction and it just continues. It's like a generational curse and it just continues and spreads like cancer, and somebody has to stop it.*
>
> Now, are you speaking to people in general, or are you speaking particularly to Black women?
>
> *I'm speaking I think to Black women and in general if I can do both. But I'm going to say in a strong sense, because I am African American. I am going to say that because we're just talking—you know, we are so bound. I mean we're literally incarcerated, and we're not incarcerated and we are.*
>
> *It's pathetic and it's sad and if you just go to the parks and look at our kids and just look at the structure, look at the time they're coming in the house. Look at their eating habits.*

You go—I come from taking my kids home and you see them at any of our churches and they're giving these candy bags, and sometimes that's all they have for the day. They go there, they're there, their parents aren't there, they're going and getting all these sugar and candy and chips and they live off that, and the line is long. It's all because we're sitting home with someone who's probably out selling drugs to make a living. Or we're running down someone who's been cheating on us. Or we're just—or we're in the Shamrock [a bar]*, we're not doing anything. And I'm tired, I've been tired of it. So, now when I see my Black sisters—not blood—I'm just speaking. They look at me, they look at me and discuss now as I think I'm better than them, or maybe I'm with the White people now, because I'm getting a little better at education. I'm only coming out with an Associate, but it was a big deal. They see it as a Master's because they don't have education, they see it as a Master's degree.*

Throughout this passage Janet expressed frustration with friends and family in the Black community. Her frustration cut across many topics: drugs, procrastination, poor parenting, women being held back by men, and wasting time at the bar. She feels that she is being ostracized by her Black sisters because of her success in school. However, Janet believes that the real difference between them and her is that they have not been willing to do the hard work that she has. As she continues, the pain that this is causing Janet comes out.

The only motivation came from outsiders, and honestly White people—that's hurtful. But they say, 'Oh! They're racists, they don't want to help you. They don't—the White men don't really give you nothing.' Honest to God that's all the White has been what's guided me through the door. Not just me—my son, my daughter. So, I'm lost on racism. I don't know how to—because the people I have in my corner right now sadly is not the Black community.

After venting her frustration, Janet offered some suggestions for the future. However, she doubted that people would be willing to follow through on her suggestions.

> *I think where we start is like now. I honestly don't see a program or anything happening right now for them. Just because I'm in and I know their attitudes and their defense mechanism that they use. Coming here is going to be tough. You run into a Miss West, you run into a back door. I watched them, and just being here—they're gone. Because they never had a woman step in their faces and hold them accountable for their actions. They're going to continuously go in and out of this door because they don't want to hear right—you're right, you're right, you're wrong, you're wrong. They want to hear 'I'm right' and* [they say] *'Don't tell me what to do—I'm going to do this.'*

Janet changed her manner of speech for her next statement. Throughout our discussions together Janet had used the word "you" in a general sense, not meaning me in particular. At this point she paused, looked at me and said *you*, meaning me personally.

> *You don't know what I'm going through when I leave out of here.*

Janet continued, suggesting that most people would not take advantage of the educational opportunity being offered.

> *What the school was saying is, I'm not concerned about what you're going through out there. I'm giving you the tools that you need to deal with out there and in here—sadly, what's going to happen is it's probably going to be few such as myself.*

Janet concluded her thoughts by saying that young people need a "piece of light," such as that which she was given by the Central College professor while she was studying for her GED. She believes that the emphasis needs to be on the children rather than those who are already adults.

> *We got to start instilling in our young people—I think it would be more geared towards the young people if the colleges can go in the school. If we could have more of the professionals reaching out to the kids because the parents are hard to reach—they're just*

hard to reach... So, any program implemented in the schools, they're going to hold on to that little piece of light. Even though they're going back home to darkness, it's that little—that one professor who told me, I can do this.

Beverly's Comments

During Interview 1 Beverly had just finished telling about her experiences in developmental mathematics. I thanked her for sharing her thoughts and told her how important her input is to my study. This led to Beverly opening up about her experiences with several older Black women that she has worked with at the college. She related that some of them do not take personal responsibility for their situations.

Most people wouldn't expect me to say this, but we all have these—a lot of Black women and women in general—have these sordid backgrounds, and some constantly blame everyone else, so you'll have that too. 'You should feel sorry for me' or 'You should let me go because this happened and that happened.' So I encounter a lot of that too, and it's very difficult to know where to draw the line, because you do have—I know a student who's had trouble with every single professor. They're always having done something to them.

As she continued, Beverly asserted that people need to take personal responsibility at some point, but she then backed off that position, saying that the issue is not clear and she would like to know what I find in my study.

And you know I try to explain—at a certain point you have to accept responsibility for some of these situations—you know, a little. You know what I mean? In some respects—so you'll have that too—and so it is a pretty grey area, when you're looking at how Black

women perform. That's why I'm so interested in your study, and you're going to get to what you're looking for. Because there's such a thin line.

Beverly then spoke about three women she knows personally.

I'm just—I'm just thinking of three women in particular, you know, and how they just don't do the work. They don't do the work for—and maybe it's because of whatever's going on in their lives. But, we all point fingers at—I have women who have blamed professors over and over again. And I'll say 'I know that professor. I've worked with that professor. That doesn't sound right.' It doesn't. It doesn't sound to me... [pauses]

As she so often did when relating her own critical experiences, Beverly switched from a specific situation to speaking in general terms.

So, you also have how we react to the situations we've been through. So, perhaps I have low self-esteem, and I thought [that I am] *less than everybody. Someone else might feel a sense of entitlement. Or, they might feel a manipulation can get them what—I don't know what they want! So it would affect their experience and developmental courses. All of what we've gone through, I know, affects how we approach and how we perform. And when we get away with certain things, we continue to do those things.*

Then Beverly returned to the specific example of the women she was describing earlier.

I don't know—I just know a couple who—who had to have multiple attempts, but never— And this is just me, knowing a couple personally, and knowing lifestyle, and responsibility outside of this place, putting off for tomorrow, procrastinating and not— and then turning it around on tutors, the instructor, the job, just everything.

Sisterhood. Sisterhood is a concept put forward by bell hooks (1986) as an alternative to what she felt was a divisiveness in feminism. Sisterhood focuses on solidarity and support between women, rather than on conflict between them. hooks (1986) says that there has been a movement away from Sisterhood because the feminist movement rigidly insists on focusing on

"common oppression, shared identity, (and) sameness" (p. 27), when in reality women are divided by multiple oppressions such as classism and racism. She asserts that focusing on common oppression is detrimental because the oppressions are actually varied. In order to fight these oppressions women need to exercise the power they have rather than viewing themselves as victims. They need to be willing to stand against oppressions that they do not personally experience. Solidarity does not mean eliminating differences, but accepting and supporting the differences women experience.

hooks (1986) points out that sexism teaches women to be victims, so before women can fight the suppression from males that they experience, they need to reject the sexist proposition that they are defined by being victims. Further, sexism is a problem not only perpetuated by men to control women, but it also "teaches women woman-hating" (p. 130). This woman hating occurs in both conscious and unconscious ways. Women verbally abuse each other personally and observe this behavior regularly depicted on television. hooks (1986) quotes Toni Morrison from a commencement speech she gave at Barnard College:

> I want not to ask you but to tell you not to participate in the oppression of your sisters... I am alarmed by the violence that women do to each other: professional violence, competitive violence, emotional violence. I am alarmed by the willingness of women to enslave other women. I am alarmed by a growing absence of decency on the killing floor of professional women's worlds (p. 130)

Morrison's words emphasize the message of Sisterhood: That women should be uniting with other women rather than being in conflict with them.

The lessons from hooks (1986) are significant in light of Janet's comments. Janet is not berating her "Black sisters" (Janet's term) in order to demonize them or to make herself look better in comparison; she is speaking from a wounded heart. Janet is hurt that she is experiencing rejection from her Black sisters, and as she speaks of their bad behaviors she is also defending

them. Throughout her comments Janet says "we" and "ours" rather than "they" and "theirs." She talks about Black women being held down by drugs or bad relationships with men. She says "I mean, we are literally incarcerated, and we're not incarcerated and we are." It is the bad behaviors of procrastination, drug use, wasting time at bars, and poor parenting that she is angry with, and she feels the pain of the oppression of the women who are affected by these things. Yet, Janet is not willing to accept excuses for continuing these behaviors. She says that somebody has to stop it or it will continue from one generation to the next.

I see Janet's comments as being consistent with hooks' (1986) thoughts on Sisterhood. hooks (1986) advocates facing differences and consciously working to accept those differences in the spirit of Sisterhood. Janet acknowledges the problems in the community and says that what is needed is for professionals to reach out to the kids to show them that there is hope to break the negative cycle. hooks (1986) says that women need to unlearn sexism, and to reject the negative attitudes that they have been taught. Similarly, Janet says that the Black women in her community need to learn to listen to the advice being given by people such as Professor West, and to be able to set aside what they think they know in order to benefit from what the college has to offer. Sadly, Janet is skeptical that they will do so.

Beverly's comments speak directly to how sexist ideology teaches women to be victims. The women Beverly talks about are trapped in the learned behavior of blaming others for their problems. They have learned to be victims. As did Janet, Beverly said that Black women need to accept responsibility for their lives. This is the breaking of the sexist mentality of being a victim. In a spirit of Sisterhood, Beverly has sought to help these women face their issues by challenging their blaming of the professors and other college staff. She is reluctant to be judgmental of the women and vacillates between saying the blaming behavior must stop, and making excuses for it.

Both Janet and Beverly feel conflicted by the negative behaviors they observe in other Black women. On one side of the coin they do not approve of procrastination, blaming others, or

self-destructive behaviors, whereas on the other side they empathize with the frustrations and feelings of helplessness that many Black women experience. They want to yell "Stop!" and "I understand and accept you!" at the same time. I think this is the true nature of Sisterhood.

Black Women Are Matriarchs

Sisterhood was one notion common to Beverly's and Janet's stories. In this section I present Beverly's assertion that Black women are matriarchs, along with a response from Janet. Then I discuss their comments in the light of the concept of Controlling Images.

Beverly's Comments

I had just shut off the voice recorder at the end of Interview 1 with Beverly when she said "You know, I'm going to say this." She then started to talk about Black women being matriarchs. I asked her repeat what she said after turning the voice recorder back on.

> *One thing that contributes to, I believe, the incompletion rate for women, older women especially. Not just, you know, Black women—is that they're matriarchs. And usually they're not just raising their children. They're raising their children's children, and taking care of—they have all the responsibility for the whole family. Usually the men are missing in action. A lot of the time, it's just true. They're in jail, they're—they can't find a job because they've been in jail. They're having problems with drugs. They—you know, just, they're absent and that woman has to take responsibility for everything. So she has to choose. Am I going to be late for this class, or I am going to go get my grandbaby who's sick in school?*

You know, and I—I know that's an issue. So, I believe that's—that's an issue, so I believe that's a major deal with a lot of us. Three generations sometimes... I don't have grandchildren, but that is highly uncommon, unlikely, for a 55 year old. I have a friend who's a great grandmother. [laughs].

Janet's Agreement

Beverly's statement that Black women are matriarchs was one of the comments that I asked the women to respond to in the Phase 2 interviews. Janet agreed with Beverly, asserting that one reason Black women become matriarchs is that Black girls grow up quickly due to family responsibilities. She recognizes that growing up too fast is a problem and says that she does not want it to happen to her children.

Very common, that's very common, that's why you see a lot of teen pregnancy in our culture. Because we've done it from kids, and we think when we get 16we know it, we have done it and we forget we haven't. You know, we haven't done it to the degree we going to once we have the kid. But yeah, we grow up really fast, and that's because of that—you know, parents not having the money and just coming up under that, you know, lifestyle. So even if they are working, you know—you're of age, you're babysitting. 'Hey we don't gotta pay for daycare. You're not going out with your friends, you're going to watch Johnnie until I get home at 3:00.' Cook dinner, all that stuff... They start earlier, and when I had kids I refused it. I don't let them be responsible for the kids just because that's something, none of my kids are [going to do].

Matriarchs and Other Controlling Images

Black women in the United States have always been objectified. While slavery was legal they literally were objects—legal property. Since that time, the objectification of Black women has been perpetuated by a series of controlling images. In her book, *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*, Patricia Hill-Collins (2000) explores the background and significance of some of the most common controlling images that Black women are faced with, including Mammy, Matriarch, Welfare Queen, and Hot Mama. In my view, the most insidious of these is the Matriarch because its negative meaning is not as obvious on the surface as the others. In fact, Matriarch has a positive connotation in some usages. Queen Elizabeth is the Matriarch of the British royal family. Elephants are known to have a matriarchal society. However, I cannot imagine anyone using Mammy, Welfare Queen, or Hot Mama in a positive sense.

Hill-Collins (2000) writes that the Matriarch image was introduced in a government report titled *The Negro Family: The Case for National Action*. The Black Matriarch was portrayed as being overly aggressive, which drove away the Black man in her life and thus contributed to the social and economic problems of Black families. It is (sadly) interesting to note that these controlling images always have the underlying function of placing the blame for perpetual poverty in Black communities on the Black woman. The implication is that if Black women were "good" women then every Black child would have the opportunity to rise from poverty. This conveniently ignores the systematic effects of poor schools, lack of community resources, and the dearth of jobs in poor Black communities, and lays the blame for their own victimization on the Black community (Hill-Collins, 2000).

Henderson (2009) examines the significance of a growing number of Black women who are unable to be custodial parents to their children. She notes the same controlling images as

Hill-Collins (2000) and explains how these images lead to a sense of helplessness. In particular, the image of a Black Matriarch portrays Black mothers as "apathetic, loveless, unfeeling individuals who only think of themselves and are thus undeserving of respect or concern" (p. 29). Controlling images define Black women as "deviant" and "unfit," so society is not surprised when they are unable to care for their children. Henderson (2009) argues that the women she interviewed had faced monumental obstacles and reacted to their circumstances in ways that made sense to them. One of the women in Henderson's (2009) study spoke passionately about how her drug addiction had robbed her of her ability to be a mother:

> I wanted to be a good mother, but I couldn't because my drug addiction had the best of me. I couldn't even though I wanted to. I didn't have the capacity and didn't know at that time... The way I was living wasn't what a good mother should be doing. It was depressing. I smoked more because they were gone. I felt like I had failed... low self-esteem... low self-worth. (p. 41, ellipses in original)

The labels of "deviant" and "unfit" that Henderson (2009) discusses are based on White, middle-class, Eurocentric norms, and do not account for the despair and helplessness in poor Black communities that leads to a higher likelihood of drug or alcohol abuse.

When Beverly used the term *Matriarch*, I do not think that she had in mind an aggressive, selfish, emasculating woman. She talked about women who had the responsibility of caring for multiple generations of children, not because of their own faults, but because the men were missing. She said the men are often in jail, or if present cannot find a job because of having been in jail, or they are on drugs. Beverly lays the responsibility for the problem in part at the feet of the Black men, and also by implication, on a society that incarcerates an inordinate portion of the Black male population.

Janet's response to the idea that Black women are Matriarchs was that it is a pattern that begins in childhood. She said that Black girls grow up fast, and because they take adult

responsibilities at an early age they think they *are* adults when they really are still children. This might have been the case with Denise, who related that her caregiving responsibilities started before she was 10 and have continued throughout her life.

Related to the image of a Matriarch is the image of the Strong Black Woman. It sounds complimentary, and in general being a strong person is good, but there is a problem with applying this term across the board to Black women who have had to take on more than their fair share of the family responsibilities. Nelson, Cardemil, and Adeoye (2016) caution that the role of Strong Black Woman forces an identity on women that may be inconsistent with their own identity. The pressure to perform in a way that they are not comfortable with may lead to "isolation, resentment, and even psychological distress among Black women due to perceived differences in their performance of strength by others" (p. 560). Janet and Denise appear to have taken on the role of Strong Black Woman. I do not know if it is a role with which they are truly comfortable, but for their sake, I hope it is a positive thing in their lives, because the high level of caregiving roles that Black women take on may overtask them and leave them susceptible to physical and psychological health issues (Wells-Wilbon & Simpson, 2009).

Implications for Developmental Mathematics and Beyond

A reasonable question to ask about any research study is "What does it mean?" I have come to the conclusion that the only way that my research project will really *mean* anything is if I *do* something with what I have learned. Rather than hypothesizing about some esoteric meaning of my research, I want to focus on using what I have learned to make a difference in real people's lives. But how can I do this? I have to start with my three current spheres of influence: first, my position as a mathematics professor will allow me to suggest curriculum changes within the mathematics department; second my professional relationship with other instructors at the

college; third and most important of all, my own words and actions in my classrooms and in every aspect of my life.

Developmental Mathematics Curriculum

During the phase two interviews I presented the women with brief summaries of five options for an introductory algebra course (the most commonly taken developmental mathematics course at Central College). The options were: 1) A traditional course as is currently taught at Central College. 2) An online course. 3) A hybrid course that combines online and in class instruction. 4) An experimental course based on a single real-life problem with heavy reliance on technology. 5) A qualitative reasoning course which would only be available for students in majors that do not require College Algebra. The summaries given to the women are shown in appendix C. None of the women favored the traditional or online courses, and all of them expressed interest in any course that would have meaningful examples.

I believe that an elementary algebra course based on a single deep, meaningful, real-life problem would capture students' interest and allow them to see the practical usefulness of mathematics. One important aspect of this problem-based approach is that the students would choose the problem that they work on. Pugalee (2001) experimented with an elementary algebra course similar to the one that I present here. The primary results of his study were that students “became active participants in their own learning... (and) technology assisted the student in their construction mathematical knowledge” (p. 175). Pugalee's (2010) study involved at-risk high school students, rather than at-risk college students, and the course topics were presented in a daily lesson format. Heid (1988) used technology to teach concepts in an applied calculus course, only introducing symbolic manipulation in the final three weeks of the semester. She found that the students had a stronger grasp of the concepts compared to a group taught using traditional

methods, and that their computational skills were similar.

Applications, often called “word problems” or “story problems” in mathematics textbooks, are notorious for being difficult and meaningless, and are dreaded by students (Rauff, 2014). The connection to real life in a word problem is contrived, so it is not real to the student. Adult learners need to be able to relate the new knowledge to their experience, and these problems do not fit with their experience. For example, this is one of the more “advanced” word problems from the textbook currently used at Central College (Bittenger et al., 2012):

> Justin rode his bicycled at a rate of 15 mph and then slowed to 10 mph. He rode 30 min longer at 15 mph than he did at 10mph. If he traveled a total of 25 mi, how long did he ride at the faster rate? [*Hint*: Convert minutes to hours or hours to minutes.] (p. 130)

It is embarrassing to ask an adult to spend her time on a “problem” like this. When would a person riding their bicycle ever know their speeds (and how much longer they rode at one speed than the other), and not already know how long they rode at each speed? It is not a real problem and it does not match an adult’s experience. The students will have no internal motivation to solve the problem and will see no need to know the answer, so they will not be ready to learn. Most significantly, the childish nature of the problem is offensive to an adult’s self-concept. A significant result of my study was that Janet, Beverley and Denise cached their developmental mathematics stories temporally in their personal experiences. Perhaps this was because there was not anything meaningful occurring in the developmental mathematics courses for them to remember. If the developmental mathematics courses were relevant to their personal experiences, then the coursework might be remembered in its own right.

When the course is first implemented the instructor will provide several problems for the students to choose from, but in future semesters the students could create their own problem based on a set of parameters. These parameters would be that the problem has to have multiple variables that could be manipulated to illustrate concepts of elementary algebra, such as variable

expressions and equations, percent increase and decrease, and linear functions (an example is given below). I allow my statistics students to choose their own topic for their research project, and it generates enthusiasm for the project. The time spent on creating a problem and working with the instructor to make it fit the necessary parameters will be well spent because it creates an even stronger buy-in from the students than selecting one of several options, thus maximizing their readiness to learn. I believe that Denise, Beverly and Janet would have embraced this type of course. Denise is an excellent cook loves caring for others. Her problem could be operating a restaurant. Beverly is a minister. There are significant financial problems involved in church organization or mission work that would spark her interest. Janet worked at the college's day care center and is majoring in human services. Her problem could be operating a day care center and/or a women's center.

The primary topics of an elementary algebra course are variables and variable expressions, solving first-degree equations, introduction to functions, and graphing linear equations. To illustrate how problems could be developed, consider the problem of operating a company. For the topic of solving first-degree equations, the essential underlying concept of equality could be explored through multiple scenarios involving balance of product or money. Here is an example of a possible homework question:

> Summarize the current inventory from your three warehouses in an Excel table, compute the total cost of each commodity, the total cost of all goods in each warehouse, and the total cost of all goods owned by your company. Now, compute the total cost of each commodity across all three warehouses, then total those costs. Is the total of all three warehouses equal to the total of each commodity? Repeat this process for the sales value of each commodity. What is the difference between the total sales value of all commodities and the

> total cost to your company of all commodities? Would it be an appropriate statement to say that this difference is the value of your company? Explain your answer.

Each new algebra concept will be presented in the form of a scenario developed jointly by the student and instructor. The scenarios for each concept will require problem recognition, set up, and obtaining solutions using technology. The role of technology is to allow students access to mathematical concepts through a meaningful application. The research literature (e.g. Pugalee, 2001; Heid, 1988) indicates that after doing a significant amount of problem solving, with as much computation (using technology) as they would do in a traditional course, the students' conceptual understanding will be roughly equivalent to that of students taking a traditional course.

Only after they have developed the conceptual understanding through their problem solving will the instructor present the concept in formal mathematical terms. In the example given above, the formal mathematics would be adding of like terms and the properties of equations that say you can add the same quantity to each side of an equation or multiply each side of an equation by a non-zero constant. After the concepts have been acquired from the work on their problems, the last several weeks of the course would be used to practice the corresponding symbolic manipulation. Students who will be going on to take College Algebra will need to be able to do the symbolic manipulation. There could be an option for those not planning to take College Algebra to substitute additional application work for the symbolic manipulation portion of the course.

My Students

In my developmental mathematics courses I need to practice awareness and compassion. I thought that I was aware of my students' unique circumstances. I thought that I was compassionate in my interactions with students. The problem in those last two sentences is the past tense verb, *was*. It implies I saw myself as having already arrived at a state of awareness and compassion. The stories that Janet, Beverly, and Denise shared with me opened my eyes to fact that I need to *become more aware* and I need to *become more compassionate*. It is an ongoing learning and growing experience. As I become more aware of the unique circumstances of my students, I can become more compassionate. For example, Denise spoke proudly of being able to pay her bills so that her utilities were never cut off.

> *My mother's lights—sometimes the lights and gas was off or maybe the gas was off and we had electric. Either way something was always off or the rent was not paid. I didn't want that for me, so my kids seeing us pay bills, I will pay bills and be broke today. My daughter will say, "Wait, she'll pay all her bills and be broke but her bill is paid." She knows she's not going to get put out, nothing is going to get shut off.*

It was humbling for me to hear Denise speak proudly of not having her utilities shut off. In my personal experience (at least from age 7 on) I never considered the possibility of having the utilities shut off.

My increased understanding of the intersectionality of race, gender, and age allowed me to better understand Janet's story about feeling uncomfortable asking for help with the graphing calculator in her developmental mathematics class because her classmates were showing impatience.

> *After a while I felt like I was holding the class back so I wouldn't even ask. I just let her go on... because kids can get frustrated with continuing to stop the class... I sensed it, you*

sensed it, you knew that you shouldn't be holding up your classmates. It was like sighs, you know in deep breath, so just like—hit the pencil. You know, professors don't catch that, but students know.

Asking for help in a mathematics class is intimidating for many students. How much more intimidating is it when one is older than all one's classmates and also the only Black woman in the room? I need to have a heightened awareness of the classroom dynamic when students ask for help and provide an atmosphere in which they feel safe seeking that help. This is something I already do to some extent. The way that I have students pair up and advocate for each other is one way to foster a safe learning atmosphere. The students are positively reinforced for helping each other, so that being in the process of learning is valued higher than already knowing something. Also, as I become aware of who is most likely to be struggling with the calculator work I discreetly check in on them while moving about the room. I could improve on this by suggesting before class begins (again, discretely, so as to not make the struggling student feel singled out) that they pair with someone who I know is comfortable with the calculator and is also patient.

I wonder how many other realities of life my students face for which I have no reference point. I want to continue to grow in awareness of these realities. I can do this in at least two ways. One is to simply listen when students talk about their lives. This is a common experience when a student comes to see me during my office hours, so I need to listen attentively and not cut them off so that we can get to the "important" mathematics content. The second way to increase my awareness is to read the literature (research and popular) about my students' cultures. This is important, since students will not always share their personal backgrounds (and of course they should not be expected to do so).

My Colleagues

With rare exception, I have found that the people teaching developmental mathematics really want to see their students succeed and are willing to accept suggestions to help them facilitate their students' success. I plan to share what I have learned through my research with (at least) the mathematics department and our college administration. I will present the suggestion for a seminar or course designed to help nontraditional students gain confidence with the graphing calculator. I anticipate that the idea will be given careful consideration and that a committee will work on creating something along those lines.

Our college offers professional development short courses and seminars at the beginning and end of each semester. I will present an overview of intersectionality geared toward nonmathematics faculty in this format, providing an opportunity to increase my sphere of influence beyond developmental mathematics. I believe that sharing what I have learned about intersectionality with nonmathematics faculty is particularly important because of how the stories told by the women revealed that developmental mathematics is just one of the obstacles they face as they pursue their degrees. As faculty in all fields become aware of the significance of the intersectionality of race, gender, and age, they can implement teaching strategies to facilitate these students' success that are appropriate for the courses that they teach.

I intend to send a summary of my research to the college president and make myself available to her for discussion. I have already begun working with one of our assistant deans to propose a curriculum change in the Human Services program (the most commonly chosen program among nontraditional Black women) where the current mathematics requirement would be changed to a course that does not require algebra as a prerequisite.

There are many venues in which I can share my research. Perhaps I can share my work through such activities as publication and speaking at conferences. I hope to have the opportunity

to interact with researchers and practitioners who share my interests so that new lenses can be applied to the intersectionality of race, gender, and age, and our understanding of these unique and wonderful individuals can grow. I feel that I have just scratched the surface in terms of understanding the intersectionality of race, gender, and age as it relates to developmental mathematics, and all of adult education. I plan to keep open lines of communication with the professors who have worked with me on my dissertation and expand my circle of colleagues as I meet more people who share similar interests. I believe that the dean of our college, as well as the president of the college, will be good resources for me to connect with other professors at my college with whom I can exchange ideas.

Trickledown Compassion

I know that when I share the insights I have gleaned from my research and make suggestions on how to better serve nontraditional Black women in our classrooms that I will be met with the response "But, shouldn't we do this for *all* of our students?" My reply will be to use the Black Lives Matter movement as an analogy. People have responded to that movement by saying "all lives matter." Although that is true, it misses the point. In our society it is already obvious that White lives matter; that is not being denied. The focus of the movement is that Black lives matter *also*, not only.

I hope that by inspiring my colleagues to become more aware of the significance of the intersectionality of race, gender, and age that they will work with these women in a more compassionate and understanding manner. I believe that in so doing, the compassion will "trickle down" to other students. Unlike trickle-down economics, this will work. In the world of money, the goal is to *get* more and *keep* it, so those who already have more will employ people to make sure that nothing slips through their hands. In human awareness and compassion, the goal is to

give to more and to have those to whom you give to pay it forward. Kindness and compassion are contagious. As we practice being more aware and compassionate toward some people, we naturally will do so toward more people.

Concluding Thoughts

In my attempt to answers questions about the developmental mathematics experiences of Black women who enter college as nontraditional students, Beverly, Janet, and Denise graciously shared their life stories with me. In several instances the women chose to share their viewpoints on how Black women interact with each other, within their community, and at college, as well as how Black women are perceived to function within their families. Insights from them are critical to understanding the implications of my study.

This research project began with my observing that older Black women in my developmental mathematics courses were leaving school at an alarming rate, even after having passed their developmental mathematics course(s). My interest was piqued, so I examined the records of Black women who had attended Central College, and found an alarming pattern: success in nonmathematics courses, but failure to complete the required developmental mathematics course(s) and subsequent withdrawal from college. I decided to dedicate my doctoral research to understanding this phenomenon. I extensively researched developmental mathematics, and how race, gender, and age factored into developmental mathematics success and failure. Realizing that race, gender, and age are not simply additive components of a person's life, I was excited to learn of the concept of intersectionality. Because there was very little in the literature addressing the intersectionality of race, gender, and age, and nothing that related this intersectionality to developmental mathematics, I decided that before any possible "solution"

could be proposed I needed to hear the stories these women have to tell about their lives and educational experiences. To meet this objective, I chose a narrative lens.

I wanted to include in my study women who had successfully completed their degrees, women currently enrolled in college, and women who left school without completing their degrees. Beverly earned a bachelor's degree with honors, Janet is a current student who will complete an associate's degree this summer, and while Denise earned a certificate, she did not complete the degree she originally sought. My greatest disappointment in the research project is that I was unable to include a woman who left college due to failure in her developmental mathematics course(s). I was only able to recruit one such woman, and she declined to complete the study. This shortcoming of my study leads to an obvious future research topic: the stories of nontraditional Black women who succeed in nonmathematics courses; but who were denied a degree due to developmental mathematics requirements. This research would start from firmer footing, using the evolved theoretical framework that grew out of my current study.

It is with great humility and gratefulness that I offer my sincere thanks to Janet, Beverly, and Denise for being willing to share their stories with me. I hope that this experience has enriched their lives. It certainly has enriched my life, and hopefully those who read my work will find inspiration in the women's stories.

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Appendix A

Interview Protocol

The interview process will have two phases: In the first phase, I will collect the stories that the women have to tell. In Phase 2 I will do a member check on the stories that they shared in phase one. Also, as a validation tool, I will ask for their response to general themes that I observed in the phase one interviews (e.g. *orientation classes are needed for nontraditional students*). For Phase 1 I will draw upon the *critical incident technique* (CIT). CIT is a flexible and adaptable research tool that is useful for eliciting people's thoughts, feelings, beliefs, opinions, reasons for their actions, and suggestions for change (Brookfield, 1990; Butterfield, Borgen, Amundson, & Maglio, 2005; Cheek, O'Brien, Ballantyne, & Pincombe, 1997; Ellinger & Bostrom, 2002). There are three aspects of a critical incident: (a) a description of what led up to it, (b) details of the incident, and (c) the outcome of the incident (Butterfield, Borgen, Amundson, & Maglio, 2005). Brookfield (1990) describes persons' critical incidents as "brief descriptions... of significant events in their lives" (p. 179). In this study I will broaden the emphasis from *events* or *incidents*, which imply a very short time frame, to *experiences*, which can either be brief or ongoing. The reason for this is my interest in understanding the educational and life experiences that have shaped the unique individuals I am interviewing (refer to Figure1 on page xx). In further discussion I will refer to critical experiences rather than critical incidents.

Critical experiences cannot always be classified as strictly positive or negative. They may have both positive and negative aspects, or change in their nature, such as when someone turns hardship into opportunity. I have chosen two stories from my own life to share with the women as examples of critical experiences; one from my childhood, and one from my professional experience. I chose these experiences because they illustrate the interplay of positive and negative in our life experiences, and because their effect on my attitudes and beliefs can be

made apparent. I also chose them as a way to share my humanity with the women, in the hope that it will make them more comfortable sharing personal stories with me. I will present these two stories, modeling the key components of critical experiences: details of the experience, what led up to the experience, and the outcome of the experience, including how it affected my attitudes and beliefs. As the women relate their critical experiences I will ask questions for clarification of these three aspects, as well as insights into their thoughts, feelings, beliefs, opinions and reasons for their actions. These questions will focus on the *who, what, when, where* and *why* of the critical experience. I will consciously avoid pitfalls such as leading or directing their stories, suggesting reasons for their actions, interjecting my own thoughts, and using language that implies valuation or judgment of their statements. Phase 1may take one or two interviews.

In the time between Phase 1 and Phase 2I will summarize the critical experiences, noting missing details related to the components of critical experiences (details of the experience, what led up to the experience, and the result of the experience). I will also note questions that I have about how the experience shaped their attitudes and beliefs as they began their developmental mathematics courses. In addition, I will performed a preliminary coding of the interviews which will result in tentative themes related to how the educational and life experiences of these individual women have shaped their expectations of success or failure in developmental mathematics (please see chapter 3for details of the coding process).

In Phase 2I will do a member check on the stories that the women shared in Phase 1. Also, as a validation tool, I will ask for their response to the tentative themes that I identified in the Phase 1interviews (e.g. *orientation classes are needed for nontraditional students*). At the start of the Phase 2 interview I will tell the women what we are going to do during the interview. Then, one at a time, I will give them written copies of the summaries I have prepared of their critical experiences. I will read them aloud and they will have the option of following along on

the written summaries. I will then ask them if the descriptions are accurate. If needed, I will ask for clarification on the details of each critical experience. Next I will present the tentative themes, also one at time. These will be in writing so the women have the option of following the written themes as I read them aloud. For example, in a preliminary study one theme was the need for a preparation course or seminar designed specifically for students who were returning to school after many years in the workforce. I would present that theme as follows:

> One person said that she did not feel ready to compete with the younger students in her developmental mathematics class. She suggested a preparation course for nontraditional students. What is your reaction to this idea?

After getting their reactions to the statements I will ask the women for their suggestions for improvement of how developmental mathematics is taught at Central College[4].

Phase 1 Interview Protocol

Before beginning the interview I will give the participant a copy of the IRB consent for research form and read it aloud. This will provide them with details about the purpose of the study, as well as their rights as participants.

As we discussed, the purpose of these interviews is to share your stories about your educational and life experiences which shaped your beliefs and attitudes as you began your developmental mathematics courses. I will refer to these as critical experiences. When relating a critical experience it is important to discuss not only the details of the experience, but also what led up to the experience and what the result of the experience was. To illustrate critical experiences, allow me to share two from my life, one from my childhood and one from my adulthood.

> *When I was 7years old I received a "new family" when Dr. and Mrs. Kammerling took my 13-year-old brother Steve and I into their home. My mother had passed away when I*

[4] The pseudonym *Central College* will be used in the final version of my dissertation.

was 3, and my father was an alcoholic. Our family had been held together by my oldest brother Allen (11years older than me) who filled my father's role. He had just graduated from high school and joined the Marine Corp. Without Allen to help out we became homeless and moved from hotel to hotel, leaving in the night without paying the bill. My father knew this could not go on and called a childhood friend of his, asking if Steve and I could stay with him and his wife "for a while." The Kammerlings knew this would be more than a while, but they felt it was something God wanted them to do, so they took us in. As I grew up in the Kammerling home I took on their religious belief system. They also had a very strong commitment to education, so that attending college was not an option, but was expected. In that one day I went from being homeless to living in the home of a doctor.

In my first year of teaching I was assigned two sections of Advanced Algebra II. One day as I walked from one class to the next I realized that something I just taught was not correct. I only had the 5-minute passing period, so there was no time to gather my thoughts and figure out what was wrong. When I walked into the next classroom, I saw the vice principal and the head of the mathematics department sitting in the back, waiting to observe and evaluate me. Of course, the students sensed my distress and did all they could to make the situation worse. The stress of staying in that class, knowing I was doing something wrong but not being able to correct it, was worst I have ever faced. It was more difficult than 16-hour shifts I had worked on furniture trucks. After that class I had my planning period, and went to my study carrel and wept. The department chair came in, and rather than encouraging me, simply said in a cold voice "you don't know your math." She was right. I had been a psychology major and had taken only a few mathematics and teacher education courses before the state of Colorado gave me a certificate to teach math. I was so embarrassed that I vowed never to let that happen

again. I started seriously studying mathematics, first completing the equivalent of an undergraduate major in mathematics, then earning master's degrees in mathematics and statistics.

First would you please reflect on your precollege experiences that stand out for you. These experiences could be based on your home life as a child, your school life from elementary through high school, or your post high school experiences. To begin with, please describe acritical experience from your elementary, middle school, or high school years.

[Actively listen to the stories being told, asking questions for clarification and insights into their thoughts, feelings, beliefs, opinions and reasons for their actions. Be careful to not guide their story. Be sure to follow up for details of the experience, what led up to it, and the outcome of the experience. When they are finished say]

Is there another experience from your elementary, middle school, or high school years you would like to share?

[If yes, actively listen as described above. Repeat until they say no. If the experiences they describe are exclusively educational, ask if there is a home life experience they would like to share, and vice-versa.]

Now, please reflect on your life experiences between leaving high school and entering Central College. Please describe a critical experience related to your decision to attend Central College.

[Actively listen to the stories being told, asking questions for clarification and insights into their thoughts, feelings, beliefs, opinions and reasons for their actions. Be careful to not guide their story. Be sure to follow up for details of the experience, what led up to it, and the outcome of the experience. When they are finished say]

Is there another experience related to your decision to attend Central College you would like to share?

[If yes, actively listen as described above. Repeat until they say no.]

Now please reflect on your experiences in your developmental mathematics courses. As an aid to your memory I have printed your semester schedules.

[Place the copy of the schedules on the table so that they can choose to read it or not]

Please describe a critical experience in your developmental mathematics courses.

[Actively listen to the stories being told, asking questions for clarification and insights into their thoughts, feelings, beliefs, opinions, and reasons for their actions. Be careful to not guide their story. Be sure to follow up for details of the experience, what led up to it, and the outcome of the experience. When they are finished say]

Is there another experience in your developmental mathematics courses you would like to share?

[If yes, actively listen as described above. Repeat until they say no.]

Now please reflect on how your experiences in developmental mathematics have impacted your life after leaving Central College[5]*.*

[For students currently enrolled, say "*after completing the course(s)*"]

To begin with, please describe how your developmental mathematics experiences have ***positively*** *impacted your life.*

[Actively listen to the stories being told, asking questions for clarification and insights into their thoughts, feelings, beliefs, opinions and reasons for their actions. Be careful to not guide their story. When they are finished say]

Now, please describe how your developmental mathematics experiences have ***negatively*** *impacted your life.*

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[5] The questions being asked about the impact of developmental mathematics courses on their lives are not eliciting critical incidents, but rather are aimed at capturing a holistic picture of their developmental mathematics experience. I am specifically asking for positive and negative experiences here to put them in the mindset of considering their developmental mathematics experiences as successful or nonsuccessful.

[Actively listen to the stories being told, asking questions for clarification and insights into their thoughts, feelings, beliefs, opinions and reasons for their actions. Be careful to not guide their story. When they are finished say]

Overall, would you consider your developmental mathematics experiences successful? Why or why not?

[Actively listen to their comments on whether or not they consider their developmental mathematics experiences to be successful. Ask questions for clarification and insights into their thoughts, feelings, beliefs, and opinions. Be careful to not guide their story. When they are finished thank them for the interview, ask if they have any questions for me, and schedule the next interview.]

Phase 2 Interview Protocol

During our previous interview(s) you shared stories about your experiences both before coming to Central College and while attending Central College. I have briefly summarized them. In case it is helpful to you I have printed a copy.

[Place the copy of the first summary on the table so that they can choose to read it or not]

Please listen and comment on the accuracy of this summary.

[Read the prepared summary and listen to their response. If clarification questions are needed, ask them. Repeat this for all summaries. When finished say]

I have copied statements made by some of the women I am interviewing for my study. Please listen to these statements and comment on them.

[Place the first statement on the table so that they can choose to read it or not. Read the statement. Actively listen to their reaction. Ask questions only for clarification. Be very careful not lead their responses in any way. Repeat until finished. Then say]

What suggestions would you like to make for improvement of the developmental mathematics program at Central College?

[Actively listen to their suggestions. Ask questions only for clarification. Be very careful not lead their responses in any way. When they are finished ask them if there is anything else they would like to share, then thank them for participating in the study.]

Appendix B

Themes Observed in First Interviews

• I had to take on adult responsibilities at an early age.

• Age, rather than race or gender, was the biggest difference I saw between myself and other students.

• Race and gender were significant for me. Some of these people acted like they had never seen a Black woman before.

• A course or seminar needs to be provided for older nontraditional students before they start classes to help them get accustomed to the technology (particularly the graphing calculator).

• I found myself being rejected by members of the Black community who said I was "becoming White" due to my education.

• It is hard to compete with students who are fresh from high school because they are familiar with the technology.

• My primary motivation for completing a GED was to be an example to my children, and to help them with their school work.

• I had to change my major because I failed math.

• If there was no math requirement, I could have completed my program.

• Black women live in a matriarchal society. They are often responsible for everything in their families.

• My early education did not prepare me for college. "You can't compete where you don't compare."

• Home responsibilities were my first priority, and this affected my schoolwork at Central College.

Appendix C

Options for MTH 005 Course (Algebra I)

Option 1: Traditional course (current format)

The class meets two or three times a week for a total of 3hours. In a typical day the teacher answers homework questions, gives a new lesson and has the class try several problems. Homework is from a traditional textbook that emphasizes working with variable expressions and equations. All work is handwritten. The graphing calculator is used regularly in class and in homework. The examples in the textbook are not relevant to real life.

Option 2: Online course

Students are not required to come to campus at all. The class is paced the same as the on-campus class and uses the same textbook. Homework is done online using a program that leads students through the problems step by step. Students need to learn how to enter responses correctly, which can take time and be frustrating. The teacher is available for help, but just through the computer interface.

Option 3: Hybrid course

The class meets once a week for lecture and is paced the same as the traditional course. Homework is done online the same as the online-only course. Students are required to attend computer lab sessions at least twice a week. These are staffed by tutors who have been trained by the professor, and operate on a flexible time schedule.

Option 4: Experimental course

This course would be based on a meaningful real-life problem, such as running a complex business. The teacher would present problems that the students solve using technology (primarily the graphing calculator). A typical problem would take at least one week to complete. After each real-life problem has been solved, the teacher then ties it into a mathematical concept. After all of the mathematical concepts have been learned, practice on variable expressions and equations is done. Because the students already understand the concepts, less time is spent on this than in a traditional course.

Option 5: Quantitative Reasoning course (only for majors that do not require the students to take MTH 180 (College Algebra) or higher.

This course would replace MTH 005. All of the topics would be based on applications to real life, such as logical thinking, using probability and statistics to understand the world we live in, and mathematics in the social sciences (how elections, apportionment, fair distribution, and models of conflict and cooperation work mathematically). This course would not serve as a prerequisite for MTH 006, but would serve as a prerequisite for MTH 160 (Statistics).

Appendix D

Excerpt from Denise's Narrative Segment Document

Took on the role of mother at an early age.

I'm the oldest and I come from a dysfunctional household background. So, when I came home with my homework I had no one to help me. My mother really couldn't help me, most of the time she wasn't there when I got home and then I would put on my mommy shoes and take care of my siblings.(1)

Then I started babysitting since I'm good at watching kids. I started babysitting so, I made my own money and then I was able to buy my own things. But most of that I would spend on my siblings. I would put me last, I still do that till today. I put myself last, everybody else's needs come before my. (2)

Self-taught.

So, I started doing my homework at school and then when, you know, I was real good at it but I lost a lot of days. I missed a lot of days, so, while I was at home being mommy while my mother was whatever she was, I studied. I just went through the book and did, and I would make, I taught myself to read, I taught myself how to enunciate, I taught myself. So, some words I pronounce doesn't sound like everybody else is pronouncing because I self-taught myself the phonics, my phonics. I really didn't finish high school actually I dropped out in the 9th grade. I dropped in the 9th grade to again fit in a mommy shoes because my mother was a single parent. She was a young parent, she hadn't finished school and she had babies early and what I learned, I was ever reading, ever learning while I was at home because when the truant officer came I didn't want them to take us and separate us. (1)

So, somebody is giving out some free books, I don't care what the subject was just that it was

some reading I can learn some new words I would pick them up like that. (3)

Embarrassed in school over being poor.

But what made me leave my junior high school was that it was when a time I had to wrap my feet in plastic and stuff my shoes with paper because, and it was wintertime. My history teacher, she meant well, she pulled me out of the classroom and she explained what she was doing and she wanted to buy me some shoes and I agreed to it. But then I was so embarrassed about it, I never went back to school. I never went back, I was so embarrassed about it I never went back. (2)

Adult dysfunctional family.

Now prior to coming here in this area I was in an abusive relationship with my children's father and it just gotten so bad, I was like, "Lord, get me out of this and I'll never go back." I didn't. So, my two older kids they wanted to stay with their dad, they knew he was abusive and all, but to them it looked like that's the way things were supposed to be. So, here I go again in a dysfunctional family.

Son gets shot.

I had a feeling something was going to happen to one of my boys and I didn't know how severe. But I need to get myself prepared for that and it happened, like I got here in November, February my son got shot. He got shot, they were shooting at him and his friends. It was a drug area, a drug-ridden area and he took a bullet at the base here of his neck and he took one a little bit further. But the bullet exited out of his armpits. So, all he got out of it was a grazed lump. So, I brought him up here. I got the hospital to release him and I brought him up here and went back to my, I came out of the women center and went back to my sister's house nursed him. Then when he got the tubes taken out of him, his drainage tubes, he went back to Philadelphia and I went back to the women center. (3)

Decides to get her GED.

Yeah, I was in my 30s when the kids went to school, when my baby got into kindergarten. So, yeah, when he, once he went to school it was like there was nothing for me to do so, I figured out going, trying to get my GED, trying to do something to, because when I went for a job, I only went to 9th grade, that wasn't going to cut it, it wasn't going to cut it.

So, I couldn't really get any kind of a job really, it was kind of limited what I could do and so, I was there. I did find work with a neighbor who had an invalid brother and I'm a caretaker by, I'm a caretaker that's my family. My grandmother, my great-aunt, they were slaves. So, all of the women that are in our family that's all we know how to do is care taking. Take care of children, take care of house, cook and clean and they did laundry and stuff like that. So, I learned from them and so, I took care of her brother for her. So, I made money she would pay me cash and so, I made some money and then she said, "Why don't you do dah, dah, dah? Why don't you think about going to community college?" I was like oh. So I did and I did. (5)

It was my children, I didn't want them to come to me and I couldn't help them with their homework. When they came and talk about, I was aware, I was like, I knew a little bit, I didn't want to not finish because I couldn't help them at home because they couldn't get the help at home. Then I, I didn't want to say, "Well, mom, you didn't finish school so then I'm not wanting to go to school." (17)

Can you reflect on a critical experience that led to your decision to come to Central College?

It was still my children and then it was still me getting something for me. Out of all my life when I look and I count this and I look over this and look, when did I get something for me? Coming to college was basically me getting something for me, for me pushing myself to get

that. (19)

Appendix E

Denise's Outline

I Really Had it Rough

Childhood

- Dysfunctional mother.
- Took on the role of mother at an early age.
- Embarrassed in school over being poor.
- Sister gets burned.
- She gets burned.
- Positive: Great aunt was sole positive adult role model.

Adult life

- Abusive relationship with children's father.
- Son gets shot.
- Son dies.
- Starts drinking heavily after her son's death.
- Positive: Chose to enter alcohol treatment on her own.

Educational Journey

- Self-taught since elementary school age.
- Decided to get her GED for better job and as example for children.
- Came to CC to "get something for me."
- Math experience at CC: difficulty getting thoughts on paper.
- Changing majors.
- Wanted medical field
- Nursing -> LPN -> Medical coding
- Teaching grandson about fractions.
- Considering coming back to school.

Pride in Her Life Now

- "My bills are paid, I have a roof over my head, nothing is shut off, I got food."
- Caring for her children as her mother could not care for her and her sisters.
- She is an excellent cook.

VITA

Thomas E. Kammerling

EDUCATION

2017 Doctor of Education, Adult Education, The Pennsylvania State University
1994 Master of Science, Mathematics, The University of Colorado, Denver, CO
1987 Master of Basic Science, Mathematics, The University of Colorado, Denver, CO
1980 Secondary Mathematics Teaching Certificate, The Metropolitan State College, Denver, CO
1977 Bachelor of Arts, Psychology, The University of Illinois, Chicago, IL

PROFESSIONAL EXPERIENCE

Assistant Professor of Mathematics, The Pennsylvania College of Technology, 2009 - present
Senior Instructor, The University of Colorado, Denver, Co (1989 - 2009)
Mathematics Teacher, Douglas County School District, Castle Rock, CO (1981 - 2009)