Navigating a Moratorium of Identities: An Autoethnography Analyzing Cultural Capital in the Mathematics Classroom

Candace Williams

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The Dissertation Advisory Committee and the student’s Department Chairperson, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College of Education concurs.

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ABSTRACT

Mathematics teacher identity has emerged as a topic of discussion amongst contemporary researchers in the effort to enlighten, impact, and reform professional practice. There has been little examination, from a personal point-of-view, of how competent mathematics teachers are and how they may use a combination of educational resources, skills, intellect, and practice to gain classroom success. The purpose of this dissertation was to take a critical look at my identities as an African American, female mathematics teacher and investigate what drives me to possess high expectations, motivate learning and foster positive learning environments, support parents, and encourage peers to illuminate success in the classroom. The research questions guiding this dissertation were: 1) How do I, a female African American mathematics educator, use autoethnography as a reflexive process to investigate cultural capital? 2) How do these factors con-
tribute to my evolving identity? As the researcher and subject of this qualitative body of work, identity was investigated using autoethnography as a research methodology that functioned as an approach to research and writing that sought to describe and systematically analyze personal experience in order to understand cultural experience. This dissertation uses the tenets of cultural capital (Bourdieu, 1986; Yosso, 2005) as a framework, along with intersectionality (Crenshaw, 1989; Collins, 2000; Banks, 2009) as a critical lens through which to understand the multiple identities that are central to this dissertation. I utilized personal narrative through storytelling as the chief method of data collection. I also utilized external data sources like the literature review, conversations, documents, journals entries and dialogue to inform my search of self. The results indicated that I am directly affected by the cultural capital that I employ to navigate educational spaces. The findings from this research revealed four major themes that contributed to how being reflexive through autoethnography helped to investigate cultural capital: a) teacher empowerment vs. authority, b) teacher identity as cultural capital, c) teacher resiliency, and d) teaching for social justice. A major implication in the research is that the transformative nature of autoethnography allows opportunities to scrutinize and critique teacher interactions that are important to educator growth.

INDEX WORDS: African-American, educator, autoethnography, cultural capital, identity
NAVIGATING A MORATORIUM OF IDENTITIES: AN AUTOETHNOGRAPHY
ANALYZING CULTURAL CAPITAL IN THE
MATHEMATICS CLASSROOM

by

CANDACE LASHAWN WILLIAMS

A Dissertation

Presented in Partial Fulfillment of Requirements for the
Degree of
Doctor of Philosophy
in
Teaching and Learning
in
Middle and Secondary Education
in
the College of Education
Georgia State University

Atlanta, GA
2014
DEDICATION

For Jai Noelle, with love, and to the most influential educators in my life:

Julia K. Williams and Charles Banks…this work is for you.
Praise God from whom all Blessings flow. His mercy endures forever, and His grace has sustained me throughout the completion of this study. To Him, I give thanks.

To my beautiful daughter, Jai Noelle, who has been with me every step of this journey, reminding me of why accomplishing this goal is so awesomely important, I love you. Thank you to the absolute best family in the world for supporting this dream and encouraging me to aspire beyond expectations. You all have never wavered, and I have been so blessed to have each of you to lean on to help me raise my daughter, work two jobs, and go to school part-time. None of this was possible without you. My parents and sisters, John and Georgianna, Vivian, and Court- nay, you are all responsible for my love and appreciation for learning, and you never let me give up. You constantly reminded me to stay the course, finish what I started, and I love all of you for your motivation. You have held me down and given me the words I needed to hear, exactly when and in the way I needed them. Thank you for answering the phone when I needed a word of inspiration, or to vent, cry, pray, to complain, or read to you paragraphs of this paper. Thank you for being sounding boards, and for giving great advice. Most of all, thank you for praying me through this process.

I have been so fortunately blessed to have the best dissertation committee I could have ever imagined. Each one of you has been so kind and caring of me, and this work. You have extended yourselves at all times of night and day, and invited me into your offices, and sometimes homes, to help me through. Dr. Christine Thomas, you have been my mentor and friend, and truly a mother to me in more ways than you know. I admire you so much for your accomplishments, and am so fortunate to have someone of your expertise to review and collaborate with on bringing my life to pages. You are a strong force, an admirable scholar, and I love you so much. Dr. Jennifer Esposito, I LOVE YOU! For the many, many courses of yours that I have taken, I enjoy learning from you, and you have a special knack for bringing out the joys of learning in your classes with all of your students. You are an amazing scholar, and so admirably grounded in methodology, I have leaned on your understanding in times of doubt and confusion! I enjoyed working alongside you as a graduate assistant, and thank you for sharing books with me. I especially want to thank you for introducing me to Cerri Banks, whose work was responsible for me telling my own story. Dr. Iman Chahine, you are just awesome. You are so full of information, and you have been instrumental in getting my work grounded and focused. You have always offered your assistance, and above all, you always read my work very thoroughly and thoughtfully. Thank you! I love you! Dr. Anthony Stinson, your coat of colors was validation that my work is important. I have learned so much from you and through your work, and I have loved you since your days in the school system. I am so proud to have you on this committee, and to have shared your work with so many people who say, “Wow! He DID that!” Your words gave life to my words, and you are beyond compare. You inspired this work, and I am so thankful for you!

To the hosts of friends and colleagues that have shared this journey with me, I am so thankful. I want to give a special thanks to my sisters, Chiquita, Dr. Latoya, Dr. Kristen, Yanika, Keisha, Cheryl, Nichelle, Vicki, TeKeshia, Alfredia, Connie, V. Michelle and Natasha …you girls rock! You all spoke this into existence even when I did not believe it was possible, and I love you all to the moon. David, words cannot express your love and support. I love you! Finally, to my sisters in scholarship who took this journey with me: Alanna, Katrina and Tanya, thank you for always being true and uncensored. I love you girls! We have a pitcher waiting at the spot for this!
FOREWORD

I have long wondered if my personal stories would have any impact on my research in mathematics education to give voice to my present experiences as an African American, female, mathematics educator. This autoethnographic study has given me the opportunity to self-reflect, and to offer others a brief background on where I have been within the discipline, and how I have been shaped by my past struggles and successes with what I have now made my current life’s work. I thought about how I should present my own story in this research piece, and how I might bar its influences from the data I intend to find. Alas, I have uncovered that my work, albeit autoethnographic, can never live separately from my personal experiences. So, I offer this foreword, with strong insistence from Dr. Christopher Jett, to give an appreciation for the opportunity to be open, transparent, and authentic about who I was, who I am, and who I am yet becoming as I transition throughout this research piece, and further my professional experiences as a secondary mathematics educator.
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1 INTRODUCTION

As I embarked on the career of mathematics educator twelve years ago, I had an open attitude of change, and a genuine ownership for the lives of young people. My personal teaching philosophy included the belief that the sole responsibility of a teacher is to prepare young people to be valuable assets to our world, and it was important to exercise this belief at all times. With this goal in mind, I found that I should equip myself with as many tools as possible to be an important part of the lives of my students, and in doing so I hoped to take a small part of each student with me to help me grow increasingly better at teaching. I continue to feel personally responsible for the successes that students achieve during our mutual encounters, and wish they are impacted in a positive way by something that I am either saying or doing daily. It is always my hope that my students understand my love of the discipline of mathematics, and also how much I care for them and their achievements. It is also of utmost importance to me for them to find something lasting in the lessons I teach to affect their lives. However, if I were asked whether or not I consider myself an empowered educator at the present moment, I am afraid that the response would be undoubtedly, “no.”

This dissertation is a collection of narratives that provide insight into the identities that constantly shape who I am, and am becoming, as a mathematics educator. This autoethography, an approach to research and writing that seeks to describe and systematically analyze personal experience in order to understand cultural experience (Ellis, et al, 2010), chronicles my inward introspection. These few reflective narratives are some of the stories that impact the ways I am changing as a result of re-telling significant events of my past, how my identity as an educator is
changed, and how my experiences might help me to understand the broader culture around me.

In this dissertation, I investigate who I am, what factors contribute to these identities, how these identities impact who I am in the classroom, and how these identities impact the culture of teaching.

What was important to me when I began teaching has somehow been transformed. With so much constantly changing in my profession, it is difficult to find myself comfortable with who I am, what I am doing and expected to do, and how to continue to serve children effectively. Within the last twelve years, the state of Georgia has transitioned through three different standards-based curriculum models for mathematics. In my opinion, these frequent changes contribute to convoluting the academic expectations in the classroom, and as an educator I am finding it equally as difficult to find balance in how to cope with the modifications. Another challenge is how often the leadership within my district and school has changed. I struggled to maintain the mandates of, now, five district superintendents. Each have come with their own plans of action to turn our school system around, and school-site faculty and staff are left scrambling to meet their fleeting expectations to remain in compliance with their supervisions for the district. Consequently, I have struggled in my school with the transition of three principals during my tenure. I have seen many changes in the regime under their respective reigns, and because they come from different backgrounds in education, there has been a stark difference in their approach to the education of young people.

I often reflect on how I entered the profession as a twenty-one year old, fresh out of college, with no prior experience. I think of how I worked hard over the first two years to establish
myself as a professional by completing the teacher alternative preparation program to gain full certification in secondary mathematics while simultaneously completing gifted certification for grades 6 – 12 along with the College Board Advanced Placement institutes in both Statistics and Calculus. I took my position as an educator very seriously, and I knew that I had been fortunate enough to be able to share my gifts and talents in mathematics with students who shared a common cultural background as I did. Ultimately, I knew that if I could go to one of the top private universities in the nation, and be the only African American female with a mathematics degree in the class of 2002, I could use my experiences to impact the lives of young people.

Initially, when I had those strong, positive feelings about being an educator, I considered myself able to define my position in the classroom unequivocally. What once was clear has ultimately been transformed, and that “self” being disrupted from the environs of an empowered educator in the mathematics discipline is the basis of my concern. Moreover, when I reflect on the many changes around me in my experiences within the field of mathematics education (e.g., the district leadership, the school site leadership, the curriculum and instructional expectations), I begin to question what it is that binds me to the profession, and continues to move me forward in the classroom.

One particular incident is brought to mind that occurred on the last day of school for the 2008-2009 academic year. One of my dearest friends, and colleagues, submitted a resignation by facsimile to the Human Resources department of our school system. Her quitting was not only shocking and disheartening, but also inspiring in a way that made me begin to reevaluate why I continue to remain in the classroom despite what struggles ensue. This educator had been co-
erced by a district official to change the grades of four seniors, all of who had failed their senior mathematics course in their last attempts to meet mathematics requirements for graduation. With all of the irrefutable documentation (i.e., deficiency logs, attendance verification sheets, transcripts of phone contacts with parents) supporting why these young people had not successfully completed the minimum requirements to have their diplomas conferred, this educator sat in a conference with the administration of our school and the assistant to the area coordinator for our region, and was urged to comply with no alternative.

The discrepancy was not over those students’ lack of preparedness to make it to the next level by graduating and going off to pursue careers or further education, neither did the district official consider the attendance records of the students in question. The assistant to the area superintendent also ignored the fact that my colleague had provided individualized remediation plans of action including bonus assignments, tutorials, redo policies on failed work, “zero zappers” to help boost averages where work was not attempted, and had phoned and conferenced with all of them and their parents at each grading period which occurred every three-weeks. Alas, the teacher’s demise, in the official’s opinion, was the total amount of students that were failing her classes. The teacher was cited on an unwritten mandate to remain within a certain percentage of failures, and despite those students lack of efforts to comply with the classroom policies that had been set by the teacher and take advantage of all of the assistance that had been offered throughout the semester, my friend was cornered, and without a voice, was demoralized of her value as an intellectual, a professional, and an empowered educator. The only given option was to change those grades.
Discerning this issue is to me, in part, the necessary catalyst to grasp what I have felt lately about the teaching profession as a whole. If the idea is to educate students and be effective in the classroom, why are the administrators in our school and district making this task so difficult? The fellowship of teaching should be a strong and consistent solidarity shared by all educational stakeholders, and we should have a consistent support system. As a mathematics educator, I feel as though my own practice, and identity, was compromised by the supposition that the very culture of the teaching profession can be transformed without giving voice to my own concerns (or my colleagues) within the system. Through my friend’s experiences, I saw a neglect to acknowledge the work that had been done along the way, and a blind-eye turned towards the capabilities of educators to carry out normative duties and have their decisions supported by administrators who are supposed to value them as professionals.

As a result of this coercion, I watched my friend pack up her classroom belongings into boxes on the day before the last day of school. As she packed, she cried, and she refused any help from our colleagues and friends. This educator did not let us talk her out of her decision to leave. I knew her frustrations. I had watched how hard she had worked, and how often she intervened for the students who struggled in her classes. I saw how late she stayed after school in the evenings for tutorials, and how excited she was when her students succeeded. I felt like packing my own belongings and following the teacher out of the door that day.

The frustrations of that teacher resonated with me in trying to get my own students to perform at their potential. My former colleague and I spoke often about how to keep our students motivated to do the work, to be successful, to be academically sound, and to go to college. We
both knew that our students could do the work and forge success because we had done it. We came from similar backgrounds, both from working-class families, African American, female, college-educated, motivated by making an impact in the classroom. We both shared experiences in pursuing teaching as a career through the alternative certification program that we attended together. We knew the struggles that belied students if they did not work hard to dispel the myths and stereotypes that African Americans underperformed and underachieved in mathematics. We also championed the idea that Black students, like us, could be successful in mathematics despite those falsehoods and also that African American teachers could be effective educators in the classroom, and empowered to be respected professionals (Hilliard, 2003; Leonard, 2008; Martin, 2012; Steele, 2003).

The Quandary

As I continue to think about my colleague walking away from teaching, I began to ask, what is an effective educator? Cousins-Cooper (2000) says that, in addition to content knowledge, effective teachers “hold high levels of expectation for their students’ academic performance, and provide their students with high-level knowledge” (p. 17). Gutiérrez (2000) would add that the effective teacher is equipped to support her students to meet those high expectations, “especially those who have not performed well in the past” (p. 63). Effective teachers should reify what Ladson-Billings (as cited in Gutierrez) describes as “treating students like they are competent; providing instructional scaffolding for them; extending students’ thinking and ability beyond what they already know; focusing the classroom on instruction; and having in-depth knowledge of their students” (p. 64). This is exactly what my friend and colleague had
done, like many of us, so why were they stripped bare of the sense of empowerment that accom-
panies having their pedagogical practices trusted, and of being an effective teacher?

According to Sachs (2001) “it is in the best interests of government for teaching not to be
seen as a profession as it gives greater opportunity for regulative control of the profession” (p. 149). Thus, it is advantageous for teachers to be passive “conduits for the curricular decisions of
textbook writers and disciplinary professionals” instead of active educators that “have the requi-
site skills to create or critique that knowledge” (Girod & Pardales, 2001, p. 8). Sachs describes
this positioning as an effort to deskill educators, making them low-priced puppets instead of
highly skilled professionals (p. 149). If this is the case, teachers do not have to “do research to
find out what good teaching is when the government is telling [them] what it is” (Brown, Jones,
& Bibby, 2004, p. 175). Education stakeholders invest in professional development to demon-
strate the practices of the good teacher knowing that “if teachers endeavor to be ‘good teachers’
following the curriculum, and if schools improve themselves, then the [governing authority] ab-
solves itself from blame for those who still fail within the system” (Cotton, 2004, p. 227).

Is this who I am? Is my profession so disparaged that I am condemned to blindly follow
the protocols of those who do not hold my best interests at heart? What will I do to invoke
change, and how will I emancipate myself and reaffirm the status of empowered educator that I
once held when I began teaching? Who am I?

My research has led me in many different directions to a common end. I believe the edu-
cator reaches a place of empowerment when she is no longer content with passing blame and be-
gins to look within and make changes outside of prescribed strategies. Towle (1948) uses the
term “practitioners in the classroom” (pg. 317) in her work, but I find that this invokes a sense of cooperation that stigmatizes the mandate impressed upon educators to follow what federal advisory boards and state governments and districts say is effective. This notion implies that educators are not equal stakeholders, and exclude them from decision-making that could help the practice of mathematics. Instead of accepting this stigma, I will not cooperate within the systemic disorder, but collaborate with them. In order to be effective, I must transcend the identity of educated person from being a teacher practitioner to one of being an empowered educator.

These reflections have led to this critical examination of who I am presently as an African American, female, mathematics educator. While I am compelled to investigate how these intersecting identifiers influence the person I am in the field of mathematics education, the interplay of these shifting identities contribute to a moratorium where I wonder what/which part of me propels my continuance and success in such a marginalized field of work? How do I situate myself? How do I continue to strive for success by being an asset to my students, school, district, and the field of mathematics education?

**Purpose of the Study**

Mathematics teacher identity has emerged as a topic of discussion amongst researchers in the effort to enlighten, impact, and reform professional practice (Brown and McNamara, 2011; de Freitas, 2008; Grootenboer and Ballantyne, 2010; Van Zoest and Bohl, 2005; Graven, 2004). These studies clearly indicate the need for mathematics teachers’ voices to be heard regarding teacher preparation programs, teaching for cultural diversity, giving attention to curriculum implementation and reform, and the utility of social constructs to define pedagogical decision-
making. Despite the research done on teacher identity in the mathematics classroom, there has been little examination from a personal point-of-view, of how alternatively prepared, competent mathematics teachers see themselves and how they use a combination of educational resources, skills, intellect, and practice to gain classroom success.

Although his work specifically addresses professional development as a means of informing teacher identity, Paul Cobb (2011) makes a brilliant argument of why researching the self is important not only to education, but also to the thought processes involved in being self-reflexive. He informs that, “a critical question … concerns the changes that teachers go through as they determine whether it is worthwhile to attempt to change their teaching practice” (p. 270). With the help of Schratz and Walker, with Schratz-Hadwich (1995), I purport that “the self [is] a re/source” for making positive changes in academic work, and that identity changes need to be documented, for “knowing more about ourselves as teachers and teacher educators changes us, provokes growth, jolts us out of complacency – …” (Lincoln & Denzin, 1994, p. 578, as cited in Pithouse, Mitchell, & Weber, 2009, p. 48).

**Significance of the Study**

Ranson, et al (1996) argue that,

Within schools a number of distinctive educational practices shape the processes of teaching and learning: the practices, for example, of curriculum design, of teaching, of assessing progress in learning, or of grouping pupils, all involve coherent social activities shaped by rules and expected standards of excellence. These practices can serve to integrate the processes of learning across the school or, on the other hand, to differentiate … people into separate compartments … (p. 20).
These processes are embedded in an individual’s cultural capital; the knowledge, skill set, or connections that a person has that enable them to communicate, interact, and succeed beyond what might normally be expected from someone without these knowledge bases, skill sets, or cultural connections.

Additionally, “the idea of identity as a social construct, one that can change as an individual negotiates different contexts, [is] especially relevant to” (Agee, 2000, p. 4) this autoethnographic study on navigating multiple identities and how my cultural capital influences who I am in the mathematics classroom at particular moments. According to Stetsenko and Arievitch (2004), the research on the self has evolved toward “…viewing the self as being embedded within sociocultural contexts and intrinsically interwoven with them… the process of ongoing social transactions” (p.475-476). Within the practice of learning and development, individual subjects act in a complex system of social and cultural contexts (Engeström, 1991).

I am interested in studying identity, using cultural capital as a theoretical paradigm, from the perspective of Hodges and Cady (2012) who argue with the help of Adler (2000) that, “the construction of an identity may be characterized as a ‘process of increasing participation in the practice of teaching, and through this participation, a process of becoming knowledgeable in and about teaching’” (Hodges and Cady, 2012, p. 113). Moreover,

[a]s individuals come to participate in cultural practice, they negotiate an identity of themselves in their lives, part of what they perceive to be available to them in their practice, and part how they are perceived by others. (Nasir & Hand, 2006, p. 467)
This idea illuminates my research questions in relation to cultural capital and teacher identity, part of which Ashwin (2008) articulates well where he asks, “How much are individuals free to decide their own [identities] and how much are they constrained by the [cultural capital] in which they operate” (p. 152)?

To address these questions, I employ a research methodology that allows me to investigate and evaluate myself, and my personal experiences, in order to explain my cultural experiences: autoethnography. Autoethnography allows me to “retrospectively and selectively write about epiphanies that stem from, or are made possible by, being part of a culture and/or by possessing a particular cultural identity” (Ellis et al, 2010). I propose to evoke certain facets of my life (e.g. academic, personal, and research), and narrate them to understand and reflect on who I am as a teacher and to use what I learn to better understand my teaching practices. Through these reflections, I hope to reveal who I am, and am becoming, through an analysis of how I am, or might be, transformed by being interactively introspective. This reflexive process involves observing and examining behaviors in the classroom and school that illuminates the cultural capital being utilized that might inform my teacher identities. Moreover, knowing more about my teacher identity might improve my pedagogical practice, and positively affect my impact on student learning. With this in mind, I intend to develop a dissertation to answer the following research questions: 1) How do I, a female African American mathematics educator, use autoethnography as a reflexive process to investigate cultural capital? 2) How does this reflexive process contribute to my evolving identities?
Rationale of the Study

A participant approach to understand who I am as a mathematics educator has been a preliminary epiphany that seeks to reveal if I constantly employ multiple identities and perspectives to understand mathematics learning as a profession. “We all possess multiple identities, be they based on race, ethnicity, religion, gender, class, sexuality, occupation, education, family, or some other aspect of our background” (Newman, 2007, p. 33). As I continuously problematize my identity in mathematics education, I am in what Torres, Howard-Hamilton, and Cooper (2003) posit as an identity moratorium. This position exists just between accepting one’s current identity as who they are, and confronting a crisis that impels one to rethink her present identity:

A conscious search is under way, but not all the alternatives have been understood or evaluated…this situation can result in an unstable time when the individual is trying out different identities, experimenting with various ways of being, or observing others they wish to emulate. (p. 12)

My own questions regarding who I was years ago, along with what I am constantly becoming, towards reclaiming an empowered mathematics educator status fuels my journey to truly come to know myself. Spry (2001) validates the use of autoethnography as methodology to recognize the reflections and refractions of multiple selves in contexts that arguably transform the authorial ‘I’ to an existential ‘we’” (p. 711).

Kirk (2005) affirms the importance of autoethnography when she states “the self is a starting point for professional and academic development, the place from which to identify what it is I want and need to do, and the place from where I can start to do that better” (p. 124). In an attempt to look inside myself and uncover aspects of my identity that might otherwise go un-
known unless examined (Preston, 2011), “I am attempting to explore the personal, the self, for the purpose of extending sociological understanding regarding teaching and learning, and teacher identity [development]” (Vasconcelos, 2011, p. 418).

Overview of the Study

This autoethnography allows me to be self-reflexive. Self-reflexivity, which is the ability to be inwardly introspective by observing and examining my behavior within the classroom or school as it occurs, is vital to the research on changing teaching methods and practices. Through being self-reflexive, the personal struggles encountered through my own experiences have begun to take shape. It is important to be reflexive in order to resist the perceptions of marginalized groups regarding the possibility, ability and capability to excel in mathematics. Moreover, a research study that utilizes autoethnography as methodology allows teacher reflection and reflexivity to exist together. Reflexivity “can actually nourish reflections as introspection leads to heightened awareness, change, growth and improvement of self and our profession” (Ryan, 2005, pg. 4).

In Chapter 2, I provide a comprehensive review of literature on autoethnography as methodology, including how it has evolved, and how it has been utilized in other research. I conclude the review of autoethnography with how it differs from self-study to inform its relevance to this research piece. In this chapter, I also review the literature on identity. This includes a definition that positions its use in this dissertation, as well as its connection to teacher pedagogical practice, examples of how it has been used in other research, and the gaps that exist in which this research intends to address.
Chapter 3 of this dissertation provides groundwork for the theoretical framework for this study: cultural capital and intersectionality. As the breadth of cultural capital is so robust, I divide this topic into two sections. In the first section, I look at the multiple definitions and development of the term “cultural capital” along with significant interpretations of this theory by major theorists. I then critically analyze its historical and philosophical underpinnings, as well as some of its basic elements. I include a brief discussion of how cultural capital theories disregard minorities, including African American females, by delineating White middle-class standards from other cultures, and I also mention how its use in mathematics classrooms is minimal. Then, I examine major strengths and weaknesses in the traditional theory of cultural capital. In section two, I explain how cultural capital will be used to frame this dissertation. I also conclude some previous thoughts on how traditional theories of cultural capital omits people of color, and account for how I will resolve this issue. I then categorize the tenets of cultural capital that will frame my dissertation that give a more detailed characterization of the multiple identities that I encountered and uncovered through my investigation. As for intersectionality, I connect this theory with identity and how the interpersonal domain works for autoethography.

The research design is presented in Chapter 4, including information about the storytelling method of data collection and how the data were analyzed. I also included how I addressed research ethics, authenticity, and quality.

In Chapter 5, I give the personal narratives and their accompanying reflections. Analyses of these stories follow the reflections to explain the instances of cultural capital that were pre-
sent. This positions the discussions of my findings later in this dissertation. I also included reasons why these stories surfaced, and how they impacted my identity as a mathematics educator.

In the concluding Chapter 6, I give a complete summary of my study, including a discussion of the findings, the implications for future studies, and make final comments on my experiences throughout this research piece. I used relevant literature to then position the impact this study may have on future research in mathematics education.

2 REVIEW OF LITERATURE

Autoethnography

What is autoethnography?
Autoethnography is an approach to research and writing that seeks to describe and systematically analyze personal experience in order to understand cultural experience. This approach challenges canonical ways of doing research and representing others and treats research as a political, socially-just and socially-conscious act. A researcher uses tenets of autobiography and ethnography to do and write autoethnography. Thus, as a method, autoethnography is both process and product. (Ellis, Adams, & Bochner, 2011)

How autoethnography has evolved

The term, “auto-ethnography,” was first used by Raymond Firth (Reed-Danahay, 1997; Elder et al., 2007). He apprised an argument between an acclaimed anthropologist, Louis Leakey, and the first President of Kenya, Jomo Kenyatta where each of the “men were said to have claimed ‘insider’ knowledge of Kikuyu customs” (Hughes, 2008, p. 76). This raised concerns of, “who has the right to represent a society” (Hughes, p. 76) when the researcher who speaks for
the culture is not “native” to the culture (Hyano, 1979, p. 99). Thus, researchers debated the quality of work from anthropologists who

May acquire, through socialization or other intimate familiarity with a group, the perspective of the ‘insider’…. [and] possess the qualities of often permanent self-identification with a group and full internal membership, as recognized both by themselves and the people of whom they are a part. (Reed-Danahay, p. 5)

The tenets of autoethnography as a methodology grew with mixed approval. There were arguments of voice; that is, who has the right to represent, or speak for, a particular culture. As well, there were arguments of life writing, or life history, where the ethnographer was expected to not only live permanently in the culture being represented but also give a personal account, or self-story, that simultaneously told about them and the culture. As the term developed, researchers still disagreed on which approach would be most essential to the way autoethnography would be used in scholarly research.

Although we give credit to Hyano as the first person to use autoethnography as a methodology, Karl Heider first used the term in a title from 1975 to explain the fieldwork he had done with Dani children (Ellis, 2004, p. 38). He essentially went into their culture and asked them what they did and wrote about it. About four years later, Hyano defined autoethnography as a set of issues relating to studies by anthropologists of their “own people,” (Hyano, 1979, p. 99) however with no restriction on those who were not native to representative cultures. He did not subscribe to the term “self-ethnography” because of “the term’s limited applicability to other cultural members” (Reed-Danahay, p. 5). In 1982, Stanley Brandes used autoethnography to support his work on life history in which he called “ethnographic autobiography” (Reed-Danahay, p.
Although Brandes was in support of autoethnography for its commitment to getting the first-hand account with the anthropologist as the subject, he was not a fan of life history writing for its intrinsic value. He appreciated the methodology for what it said about culture for ethnographic sake. That is, Brandes was more concerned with getting rich stories of the culture, and not necessarily who delivered the account.

Marilyn Strathern (1987) wrote about autoethnography, but called it “auto-anthropology” (p. 17). In her view, life history writing was less emphasized in lieu of ethnographic writing of one’s own culture. She believed effective autoethnography was not necessarily situated in the contrast of insider versus outsider. Her claim was that anthropologists had been trained in how to write ethnography, so there was an inherent issue of subjectivity that existed beyond that of (non)nativity. Norman Denzin (1989) “has more recently distinguished different forms of writing in what he calls the ‘biographical method’: autobiography, ethnography, autoethnography, biography, ethnography story, oral history, case history, case study, life history, life story, self story, and personal experience story” (p. 27). Denzin claims “autoethnography is a text that blends ethnography and autobiography and entails the incorporation of elements of one’s own life experience when writing about others through biography or ethnography” (Reed-Danahay, p. 6). According to Reed-Danahay, this is altogether different from earlier claims of “straight ethnography and life history or autobiography” (p. 7). Philippe Lejeune (1989) took issue with the non-native as well. He claimed the science of autoethnography masks authenticity. For him, first-hand, self-stories were essential elements of autoethnography. To concur, Alice Deck (1990) did not need outside references or historical sources to back the indigenous voice. She
subscribed to the “first-hand voice of the ethnographer as sufficient to lend authority to the text” (Reed-Danahay, p. 7).

In sum, the definition of “autoethnography” remained contested by many anthropologists and ethnographers, with challenges of whether this form of writing was grounded in life history or ethnography. With such a broad definition surrounding autoethnography, Hyano (1979) deduced that the term refers to “a mixture of diverse researchers investigating different problems” (p. 103). However general, Hyano “spoke to the potentialities of autoethnography, and describes its capacity to create an alternative venue for marginalized voices” (Hughes, p. 77). While still struggling to determine whose voice represented which culture best, Van Maanen (1995) emerged with four types of “alternatives to ethnographic realism” (p. 8 – 9). This division was important because earlier researchers had not come to a consensus on representation. Strathern (1987) found this especially troubling since the issue of speaking for a culture did not necessarily constitute that one was fit to do so. As a result, authenticity became the larger issue. Within this issue, educational and qualitative researchers have spoken to its credibility in scholarly works (Banks & Banks, 2000; Bochner & Ellis, 2002; Dalton, 2003; Denzin, 2003; Ellis & Bochner, 2000; Holt, 2003; Laubscher & Powell, 2003; McGuire, 2006; Roth, 2005; Sparkes, 2000), (as cited in Hughes, p. 77). Autoethnography, as a result, is defined as a form of writing where the ethnographer is the native (Reed-Danahay, p. 5).

How autoethnography has been utilized in previous research

Sherick Hughes (2008) used autoethnography with his graduate students and documented his experience with it in, “Maggie and Me.” He asked his students to complete an autoethno-
graphic research project where they drafted their personal stories centered around significant events within their educational development. They were asked to comment on experiences of race, gender, and class. After they drafted these stories, they developed research questions from common themes, and were then grouped with classmates that shared similar experiences. In their groups, they discussed and triangulated their accounts to find an intersection of raced, gendered, and classed experiences. At the end of their exercise, they shared their findings in a symposium. The intention of the assignment was to use autoethnography to promote reflexive thinking to inform critical race pedagogy. Hughes considered the assignment a success and reported, “…our narratives…provide substantial evidence of how autoethnography can work as critical race pedagogy…I am proud of us for engaging and sustaining autoethnography in this way to begin the difficult and vulnerable journey of personal-historical self-criticism, … and engaging reflexivity” (p. 88). Hughes’ use of autoethnography to position race, gender and class within critical race pedagogy informed its transformative tendencies within educational scholarship. He also reported that through the use of autoethnography, his students were able to “address and begin to ameliorate some of the threats of race, class and gender-related oppression in the classroom” (p. 91).

Kahl (2010) also used autoethnography with his students as a reflexive piece. His undergraduate communication studies class was given the opportunity to “critically reflect on the relationship between what they learned while working with marginalized groups and what that experience taught them about power in society” (p. 222-223). Kahl mentioned that autoethnography played a vital role in recounting lived experience, which goes beyond a mere reflection paper.
According to Fasset & Warren (2007), reflection papers are not as transformative as using autoethnography to write reflexively since the former only “suggests a mirroring or account of the past” while the latter “suggests an important motion, back and forth, between one’s actions and how those implicate one in social phenomena” (p. 48).

In order for the students to be successful, the instructors provided literature that specified the goals of autoethnographic writing, including general principles about how to write reflexively (Engstrom, 2008). Once they had a sufficient understanding of their writing goals, they began their writing process while simultaneously recording their thoughts and initial impressions about their experiences. Kahl (2010) records that this, “strengthens their learning by engaging in [different] aspects of critical communication pedagogy – the creation of a written record of their personal discovery through an examination of their lived experiences” (p. 225).

Hernandez et al. (2010) used autoethnography to “explore and understand how scholars establish a dialogue, resist, adapt themselves or adopt changes, in the process of constructing their professional identities” (p. 1). They compiled a collective autoethnographic work that documented, “our experience as university students, the beginning of the academic career, relationships with others, and the consequences of the mark of gender” (p. 7). The deliberate use of autoethnography as a methodology allowed each scholar to share his/her place within the realm of a changing environment within their university, and it also “enable[d] [them] to explore and look deeper into the experiences of professional life linked to change, with different meanings and narrative styles” (p. 5). What makes this work particularly powerful is that there were no preexisting methods used in the construction of their personal narratives. They believed by not man-
dating how to write out their stories, “the diversity of narrative styles and ways of articulating the contents” (p. 6) would contribute to the richness of their shared culture. These differing approaches were a broad spectrum of accounts including philosophies of professional research and teaching, metaphor, statements of professional growth, and some were born out of earlier dissertation and theses writing.

They report that autoethnography was not an easy task for them. The actual process of writing “required a great deal of reflexivity and re-composition of [their] own professional careers” (p. 11). They also reported that in telling their own stories, they revealed much of what they thought of others. Lastly, they spoke of the concerns with positioning the autoethnographic accounts from the past with ones of the present. As an experience is lived, they purport, there is a change in meaning when it is recorded and shared. That is, “the experiences as narrated by the participants might not have been understood by them in the same way at the time the events occurred” (p. 12).

Researchers Averett and Soper (2011) and Klinker and Todd (2007) approached autoethnography in the same way as Hernandez et al. (2010). They endeavored a collective piece, more specifically a co-authored autoethnography, where each person’s account of a particular phenomenon would be presented. This makes the “auto” suspect (Averett and Soper, p. 358), however it fulfilled one tenet of autoethnography; it allowed the reader (and the writer) to experience something new. Klinker and Todd (2007), in their attempt, met an early obstacle. Although they knew they wanted to share a collective life story, for their life experiences had led them to arrive at similar places at the same time, the “problem was that autoethnography is one researcher’s
connection of the personal self to the cultural self. Since there were two of [them], how could [they] solve that dilemma” (p. 167)? They found their solution in an approach to autoethnography that was unique, and grounded in the literature, as well as of narrative, to validate a common cultural experience. In the literature, they sought to find evidence that reified their decisions to attend the same university, and the similarities in their journey to get there. They also shared a culture of being “middle-aged, woman, and having held traditional identity roles” (p. 166).

In regards to method, Klinker and Todd (2007) affirm having “interviews with their memories,” where they reflected on significant past events that were instrumental in their choosing careers as professors. Their recollections, and conversations about their memories, instigated more writing. They found that the emotions associated with their memories were just as present through their reflexive process as they were when they lived them. “It was that experience through writing that allowed [them] to see [their] present from the past” (p. 168). By reliving the moments that evoked such strong emotion, Klinker and Todd (2007) “reconstructed [their] past selves, [and] could look more deeply at cultural interactions” (p. 169).

Mizzi (2010) coupled autoethnography with multivocality, which he defines, “as providing representational space in the autoethnography for the plural and sometimes contradictory narrative voices located within the researcher” (p. 2). He saw the need for investigating multivocality for three purposes:

1. The use of multivocality illustrates that there is no single and temporally-fixed voice that a researcher possesses; rather, there are several past and present narrative voices that interact within and reflect on the researcher’s subjectivity; (2) multivocality deconstructs competing tensions within the autoethnographer as
In telling his story, he discovered many narrative voices, or multiple-selves, that informed his complete identity within the context of his storytelling. According to him, these voices could not be ignored because they uncovered considerations and anxieties that could illuminate the differing, and sometimes competing, aspects of his identity that helped to shape who he is. Sometimes, Mizzi claims, these voices spoke together which made his writing very difficult. Ultimately, “re-living and writing the past with the multiple narrative voices in mind was a difficult and painful experience that also doubled as a form of healing” (p. 8).

Vasconcelos’ (2011) work focused on teacher-student relationships as a method for using autoethnography. She reports that her most dynamic recollections surfaced when she engaged in dialogue with her students and teachers, and as such she used “snapshots” of memories that gave her the most intimate look into her identity. Although she was successful in her endeavor, studies that use autoethnography to inform identity through teaching practice ”are still difficult to find” (p. 435).

Autoethnography vs. Self-study

According to Pinnegar and Hamilton (2009), self-study developed at a time when the academy questioned the trustworthiness of research done by those who were teacher-researchers and those who were teacher-practitioners. There were contentions with whether “practitioners underst[ood] their experiences in ways that counted as knowledge, or were only researchers standing outside the experience competent to identify that which contributed to the knowledge
base” (p. 2)? Essentially, this preempted theorists to question if teachers, whose professions bounded them to the classroom, were any less suited to do research in and on them-selves, or if research on teachers was best reserved for professional researchers of teachers/teacher education. Ultimately, in the scrutiny of teacher/teacher educator/teacher researcher, the argument of “who can speak for us?” ensued.

During this period of time, teachers did not perform the existing research on teaching and teacher education. Psychologists, cognitive behaviorists, philosophers, sociologist, anthropologists and historians undertook these areas of inquiry. “Although all of these disciplines provided contextual theory to education, few authors concentrated directly on the practices of teaching” (Pinnegar and Hamilton, 2009, p. 2). A significant historical shift occurred with the publishing of Schön’s (1983) work, *Reflective Practitioner*, where teachers began investigating themselves for the sake of improving their practice and contributing to teacher education, research, and development. Out of this, self-study as a methodology was born.

While the tenets of self-study are historically robust, and overtly personal, the underlying idea is that the teacher has an authentic voice in presenting what experiences impact how they view themselves and their profession. Researchers who use the self-study methodology are allowed to “document not only what they learn about teaching and teacher education…but also the tacit and personal practical knowledge they possess that contributes to our knowledge and understanding of teaching” (Denzin & Lincoln, 2005, p. 3). Self-study serves as a platform for teacher educators to confidently declare what factors affect their teaching practices for the sake of trans-
forming the profession, without diminishing the “authority of the researcher engaged in practice” (Denzin & Lincoln, 2005, p. 3). Consequently, self-study is a subset of autoethnography.

According to Bullough & Pinnegar (2001) and Starr (2010), “autoethnography extends beyond self-study. The focus of autoethnography is not the literal study of the self but the space between self and practice” (as cited in Starr, 2010, p. 2). In this way, autoethnography requires not only data collected from the self, but also others who are engaged in similar and simultaneous contexts to make meaning of practices. Therefore, “under the umbrella of self-study…autoethnography suits the ends of such research in the intersection of biography and history where the study of the self has both a relationship with and pertinence to the ‘context and ethos of a time’” (Starr, 2010, p. 2).

Identity

Some research on identity, often referred to as the self, state that “there are many approaches to [its] study drawing on diverse and disciplinary traditions” (Skelton, 2012, p. 26), implying that identity is a most diverse and discursive concept. The troubles that seem to arise with many definitions of identity involve the factors that influence identity within particular social and cultural contexts (Wenger, 1998), including what occurs at the lower levels that include the influence of disciplinary cultures (Becher, 1989), occupational contexts and departmental (and other significant) communities of practice (Trowler et al., 2005; Wenger, 1998), a personal theory of teaching (Fox, 1983) and a host of familiar pedagogical practices (Kreber, 2010). For this reason, it is necessary to establish and operationalize a definition of identity that moves this au-
to ethnography forward. Through this portion of the literature review, I will define identity in order to understand how it relates to teacher pedagogical practices. Then, I will develop a foundation for understanding the identities of female mathematics educators, with evidence of African American women educators being largely omitted, and how their unique identities contribute to the successes they achieve in the classroom.

What is identity?

I use identity as Brigitte, Fritz and Mabalane (2010) have synthesized it:

Identity is socially constructed throughout one’s life, as individuals interact with people and society at large. Put in another way, identity varies in different contexts. It is not a fixed attribute of a person, but a relational phenomenon... Also, identity is negotiated, shifting and ambiguous, the result of culturally available meaning and the open-ended power-laden enactment of those meanings in everyday situations... (p. 95)

Furthermore, this idea reifies the concept of identity being understood and characterized by a number of aspects, including cultural, political, societal, economic, racial, and ethnic features (Beijaard, Meijer, & Verloop, 2004).

Gee (2001) offers another view on identity, consistent with the above argument, as an important analytic tool for understanding schools and society. More specifically, he claims, the “kind of person” one is recognized as being at a given time and place, can change from moment to moment and from context to context (p. 99). Gee (2011) revisited this notion in his book, An Introduction to Discourse Analysis, bringing clarity to his previous argument,

Some people dislike the term “situated identity” and prefer, instead something like “(social) position” or “subjectivity” (they tend to
reserve the term “identity” for a sense of self that is relatively continuous and “fixed” over time). I use the term “identity” (or, to be specific, “socially situated identity”) for the multiple identities we take on in different practices and contexts. (p. 41)

Many others (Krzywacki & Hannula, 2010; Kaasila & Lauriala, 2010; Upadhyay, 2009; Ritchie, et al., 2007; Hodges, 2006; Sfard & Prusak, 2005; Shulman, 2004; Kazemi & Franke, 2004; Beijaard, Meijer & Verloop, 2004; Turner, 2002; Collier, 2001; Shulman, 1998; Shulman and Wenger, 1998) argue that “an individual’s identity is one of several different identities he/she can hold concurrently” (Sutherland and Markauskaite, 2012, p. 748). Hodges and Cady (2012) contribute, “an individual’s identity influences the ways in which she or he participates in a new community and the on-going formation of a new identity” (p. 113).

Sfard and Prusak (2005) acknowledge that identity is not only socially and culturally influenced, but most importantly “a collection of stories about persons” (p. 16), highlighting the importance of the personal narratives used in literature to maintain their authenticity. Holland, et al. (1998) proposed that identities could be associated to understanding one’s self when people articulate to themselves and to others their perceptions of themselves. According to Sfard and Prusak (2005), “these approaches to identity are crucial since they offer some insights of understanding one’s own self by foregrounding the person’s own narrativizations and telling who one is” (p. 16).

Teacher identity and professional practice

Forbes and Davis (2011), Lemke (2000), and Peressini, et al. (2004) would agree with Cooper and Olsen (1996) that, “identities exist as both representations and as ways of acting. As
both, they are fundamentally embedded in social activity and develop over time in relation to existing social structures” (as cited in Forbes and Davis, 2011, p. 269). They go on to argue that, “as representations, identities are used by individuals as cultural tools toward some desired outcome or objective. Whether the use of identity is conscious or unconscious, implicit or explicit, it serves to mediate what people actually do.”

Teachers’ identities, then, exist in and are developed through professional practice (Enyedy et al., 2006; Lemke, 2000; Sfard & Prusak, 2005) and are a fundamental part of not only how teachers identify with and participate in established practices within a [social context] but also seek to alter [socially]-specific practices and the ways in which… members define themselves (Wenger, 1998). (Forbes and Davis, 2011, p. 269)

Teacher identity is influenced by wider social and cultural contexts and structures operating at multiple levels within social and cultural constructs. At the highest of these, “[teacher identities] will have a significant impact on how an individual understands, practices and evaluates their teaching” (p. 27).

Brigitte, Fritz, and Mabalane, (2010) further propose that, “teacher identity emanates from multiple lived experiences and sociocultural histories that converge…within the wider sociocultural networks” (p. 95). Thus, on one hand my study considers understanding my own teacher identity through a look at how it is developed and how it operates in the mathematics classroom. On the other hand, my study examines autoethnography as a methodology for investigating the reflexive processes involved in affecting my teaching pedagogical practices.

According to McGregor (2003), “traditionally, schools have been considered as complex systems [of] bounded containers in which the professional identities of teachers are shaped by
practices and social interactions” (as cited in Brigitte, Fritz, and Mabalane, 2010, p. 95). However, as we understand the broader concept of identity as being shaped by larger schemes of social and cultural interactions, “a discursive analysis of identity clarifies how teachers forge identity in their work environment, which shifts beyond the boundaries of what is normally known as school” (Brigitte, Fritz, and Mabalane, 2010, p. 96). Researchers like Beijaard et al. (2004) explain that a person’s professional identity processes begin way before one’s professional training for that profession. It then continues to evolve as that person becomes more acclimated to, and identifies more with the profession (Chong, Low and Goh, 2011, p. 52). “Precisely because teacher’s professional identities are constantly evolving” (Beijaard et al., 2004, p. 61), it is necessary to constantly explore teaching identity throughout one’s professional life. Therefore, “identity is not something one has, but something that develops during one’s whole life” (Beijaard et al., 2004, p. 107).

Sutherland and Markauskaite (2012) agree that,

A person’s professional identity is positioned within “a superior body of knowledge...[which] resides within the community of practice of the profession...and develops from a person’s engagement within a community of practice...For educators, this professional knowledge includes their pedagogical practice. (p. 748)

Thus, consistent with what is presented here of a teacher’s identity, a professional identity develops over time and rather than being coherent and stable is more likely to be fragmented and prone to change; it depends on the participants’ professional knowledge (van der Zwet et al.,
Hodges and Cady (2012) purport that shifts in teacher identities occur when they participate in the culture of teaching. These shifts are marked by their transition from new teacher to experienced teacher. Moreover, as their knowledge base develops, new identities develop. So, what happens to teacher identities as they transform out of teacher training programs, practicums, and professional development into their professional teaching careers? “Conceptions of teacher identity are constructed and reconstructed through discursive practices…in teacher…discourse communities” (Chong, Low and Goh, 2011, p. 51). Therefore, as argued by Pithouse, Mitchell, and Weber (2009), “knowing more about ourselves as teachers and teacher educators changes us, provokes growth, jolts us out of complacency – sometimes radically in ways that [are] transformative” (as cited in Lincoln & Denzin, 1994, p. 48).

Teacher identity and reflective practice

“Recent scholarship on teachers’ identities and lived experiences has begun to redefine teaching and teachers in theory and research in teacher education” (Agee, 2000, p. 6). Schön’s (1983) work brought attention to the role reflection plays in teachers knowing how and what to teach (Hung, 2008); others like Walshaw (2010) helped to enlighten the idea of what structures a teacher’s narrative in affecting mathematical pedagogy. She begins her theorizing of the concomitant nature of teacher pedagogy, reflective practice and identity by stating:

The practitioner’s practice, shaped by reflective analysis, reacts ‘against a view of practitioners as technicians who merely carry out what others, outside of the sphere of practice, want them to do’
(Zeichner 1993, p. 204). Specifically, the practitioner’s reflections initiate a personal renewal, activating new meanings of self through which new understandings of a professional trajectory emerge. Identity, then, emerges as a key concept in the discourse of the reflective practitioner. (p. 488)

Consider how, for example, Bjuland, Cestari, and Borgersen (2012) investigated, “how the reflective narratives of an experienced primary teacher about discourses and activities provide evidence of the professional identity of the teacher” (p. 406). They undoubtedly admit that “teachers know, believe, feel, participate and belong, thereby suggesting that the term teacher identity emerges as a sociocultural construct that includes all these aspects of teachers’ lives” (p. 407). However, by adopting the claims made by Ponte and Chapman (2008), where they assert that a very crucial aspect of understanding a teacher’s identity involves “reflecting on their own activity and about themselves as teachers” (p. 242), Bjuland et al. (2012) are able to investigate teacher identity as it is enacted through reflective narratives from the personal experiences of their participant. They ultimately “[find] signs of [her] designated identity, implying that she want[ed] to improve her work in order to become a better mathematics teacher” (p. 422). Agee (2000) reveals that when individuals critically reflect on their experiences, they uncover how they negotiate their identities. This process contributes to understanding how individuals participate in their culture and larger society.

To expand this argument, consider a study done by Sutherland and Markauskaite (2012) to address the issue of teacher identity through reflective narratives in response to the deficiency of research that links “the development of identity and the development of cognitive capacity of learners” (p. 749). While they imbue online learning experiences in their study to understand
university student’s professional identity development, they use the idea of “teacher’s voice” as a theoretical construct. This is a qualitative method that invokes the reflective process that allows the participants to express their authentic personal stories through written or spoken narrative (Sutherland, et al, 2010). For them, “this construct is a measure of the extent to which a person articulates [author’s emphasis] the development of their professional identity as a teacher” (p. 754).

The researchers found that in using their online system to engage students in writing their individual stories to inform their identities, although the participants did not value their reflective component initially, “the gradual increment of the indexes of reflective and analytical engagement with knowledge suggests that students were developing deeper views and understandings” (p. 762). In this, the researchers found that the more students reflected on their practice through a narrative approach, the more in depth their reflections were. They purport that at the highest levels of reflective capacities, teachers “reconsider [their] personal beliefs about teaching and learning from [the] examination of the interaction among educational/theoretical factors” (p. 755).

While Sutherland and Markauskaite (2012) connect narrative forms of identity construction through online learning experiences, they also admit that the process of deep reflection and self-evaluation is a necessary condition for evoking teacher change and the developmental process. Change is marked by the negotiative processes involved in transforming identities that may reveal more about teacher’s identities of themselves as people, and as educators. To Sutherland
and Markauskaite (2012), “superficial reflection does not fulfill the condition for a change in mathematical identity” (p. 234).

The idea that identity, personal reflection and reflexivity are concomitant is suggested in the historical development of what we have come to know of teacher identity, along with how we operationalize the self (Day, et al., 2006). Mead (1934) viewed identity as one particular, stable attribute that could develop over time through a dialogue between oneself and others. Then, Lortie (1975) tested this hypothesis by examining ways in which the identities of teachers were negotiated between personal and organizational influences. Skelton (2012) showed that “as teachers move through their careers they gradually manage to integrate their personal and professional selves, coming to see themselves as teachers” (p. 27). Consequently, “identity…[was shown as] an on-going process that involves the interpretation and re-interpretation of our experiences as we live through them” (Cooper and Olsen, 1996, p. 80).

Constructs of mathematics teacher identity in context

In Hodges and Cady’s (2012) work, “Negotiating Contexts to Construct an Identity as a Mathematics Teacher,” we get a glimpse of how identity and mathematics coincide. With Wenger’s (1998) influence, this study shows how individuals come to participate in the practices of a particular community as they carry with them identities formed as members of other social constructs and contexts with corresponding ideas about what constitutes appropriate participation.

Hodges (2006) initially did work with students in mathematics classrooms in relation to their participation in out of school communities; however, in her work with Cady, she applied a
relational view of identity as an aspect to mathematics teachers’ situated identities. They completed a single-case study with one middle grades teacher (Katie) as she negotiated her own struggles with expectations from local, school, professional development, and district stakeholders. So, through a series of interviews and analyzing classroom artifacts like lesson plans and student work, they found that “Katie’s identity originates in her daily work as a mathematics teacher…[whose] past experiences in mathematics and her future goals in terms of mathematics teaching and learning…influence…her core identity” (p. 115). This idea of “core identity” employs Gee’s (2000) reference as “whatever continuous and relatively fixed sense of self underlies our contextually shifting multiple identities” (p. 39).

Hodges and Cady (2012) found that Katie’s personal beliefs sometimes acted in opposition to the expectations she had from the multitude of communities to which she was accountable. However, the ways in which she reconciled these differing identities contributes to the notion of a “nexus of multimembership,” which brings together a host of different identities into one (Gee, 2000), where it is revealed that as Katie participates in the culture of teaching, her teacher identity is constantly transformed.

In a similar piece, Ritchie (2009) contests the idea that teachers can negotiate multiple identities at once, bringing one or more identities to the foreground while back-grounding others. He critiqued a study on an African American female science teacher (Daisy) who had identity conflicts for the same reasons highlighted in the study done by Hodge and Cady. Ritchie argues for her, saying, “in schools, science teachers need to implement curricula based on sound pedagogy…yet prepare students to ‘pass’ standardized of high-stakes tests that do not necessarily re-
flect the emphases of the curriculum” (p. 596). He questions, however, if “these tensions necessarily lead teachers ‘to strategically renegotiate their own identities’” (p. 596). Through a critical analysis of Ritchie’s (2009) study, Upadhyay (2009), shows that tensions arose when teachers recognized the apparent competing demands of implementing curricular objectives in lieu of teaching to the test, but Ritchie (2009) does not subscribe to the “nexus of multimembership” when negotiating competing identities. As Upadhyay (2009) argues that identity work is complex, and must include the use of diverse theoretical perspectives and sub-constructs to be understood, Ritchie (2009) invokes Maulucci (2008) and Turner (2002) for a triad of identity paradigms: (1) core self, from which Gee (2000) addressed; (2) sub-identities, including those cognitions and feelings about the self in the classroom and school; and, (3) role identities, which change when the teacher’s pedagogical approach changes (Ritchie et al., 2007). Ritchie (2009) goes further to state,

> While we all have needs to confirm all three levels of identity, by far the most important is the core because this level of self activates the most intense emotions about one-self as a person and about how one should be treated by others. (p. 101).

A major tension for me in Upadhyay’s study with Daisy, as well as for Ritchie, occurred in the methodological challenges faced through the construction of her identity. Daisy was allowed to provide narratives and share authentic stories of her struggles with identity in the science classroom, but was not a co-author of the piece. That is, “Upadhyay constructed multiple identities for [author’s emphasis] Daisy… [where] perhaps the complexities of identity work can
be reduced by greater use of thick description and the inclusion of more narrative text from the teacher as co-researcher and co-author” (p. 598).

Up to this point, teacher identity has been addressed using a combination of research methods. The studies that address identity qualitatively have done so ethnographically, where data have been gathered using multiple methods. These methods have included field notes and analyses, passive and non-participant observation, informal conversations with participants, narrative interviews, and artifacts from schools to name a few. Data were analyzed for ethnographic content and embedded in theory, discourse, and narrative to give thick descriptions of the schools and portraits of teacher identity. Sikes (1997) argues that teacher identities are shaped by personal biographies and significant life experiences. The gap in the preexisting literature, however, are the teacher’s authentic voices to describe their own theories and discursive practices of identity.

A problematic attempt to address the absence of authentic narrative in the constructs of teacher identities can be observed through an analysis of a study developed by Kaasila, Mannula, and Laine (2011). They addressed the processes of how to analyze the mathematical talk of pre-service teachers who have negative views about mathematics. They analyzed the narratives told by their participants, and found that different kinds of talk belonged to different interpretative repertoires. As they recognize the methodological challenges prior to the study, they endeavor to ameliorate some common casualties before implementing their analyses. “To analyze in a deeper way, it is [necessary] to combine multiple methodological approaches” (p. 978). In summary, they argue that the use of multiple methods, including narrative, discursive and rhetorical meth-
They conducted their research, and affirmed their claims, explaining why teacher identity narratives are unstable, and consistently evolving as each is connected to different contexts or social relationships (p. 978-979). They pointed out that teacher identity narratives change when the audience changes. That is, “we often do not want to tell about certain events that give a negative picture about ourselves, not even to ourselves” (p. 979). Thus, teacher talk, or rather the narratives that teachers provide as evidence of their teaching identities, can be a form of argument that is bound up in contextual justification, needing explanation, and links one in relation to mathematics to other people acting in mathematical communities (Maclure, 1993).

The issues in “naming repertoires” were prevalent as they discussed their analyses. They admitted, “we…. took into account that the way we named them can include a moral view…[and] interpretation of a single isolated utterance can lead to wrong or oversimplified evidence” (p. 992). Therefore, the type of ethnographic research that embeds itself within narrative methodology must consider the challenges faced when analyses are done to understand what these narrative forms are actually portraying. Authors are taking narratives, “life stories” and retelling them using codes, however in doing so, researchers are compelled to mention their own subjectivities. I argue that there is a need for more authentic teacher narratives in research without the ethnographer’s interpretation. That is, there is a dearth of autoethnographic literature that relays stories of teacher identity and identity negotiation free from the guise of authorial interpre-
tation. Moore (2007) sums up this view by arguing, “when we re-tell stories of experience we inevitably reveal our identities and the positions from which our stories are re-told [author’s emphasis]” (p. 702).

Bjuland, Cestari, and Borgerson (2012), too, recognized the potential methodological issue of re-telling this teacher’s narratives, and examined the work of de Freitas (2008). His methodological approach to analyzing the narratives of four high school mathematics teachers was to report the function of these narratives in the classroom. That is, instead of telling the stories themselves, he investigated how these stories were implemented in regular pedagogical practice to provide rich lessons to students. They discovered that although they might be able to categorize these narratives into codes, or repertoires, or a triad of “interrelated dimensions for outlining how] a person [might] enact a particular identity as: competence, performance and recognition” (Bjuland et al. 2012, p. 407), they refrain from doing so in order to preserve the authentic narrative provided by their participant (Agnes).

Concluding ideas on identity

In sum, we can define a teaching identity as how one categorizes oneself in relation to others that centers around particular sets of meanings inherent to both the representations of ‘teacher’ and the practices associated with being a teacher (Collopy, 2003; Drake, Spillane & Hufferd-Ackles, 2001; Mahlios, 2002; Peressini, Borko, Romagnano, Knuth & Willis, 2004). As Stets & Burke (2000) suggest, “the core of an identity is the categorization of the self as an occupant of a role, and the incorporation, into the self, of the meanings and expectations associated with that role and its performance” (p. 225).
Bjuland, Cestari, Borgersen (2012) purport that the notion of teacher identity is considered to be a key theme for future directions of research in a sociocultural perspective (Lerman, 2006; Sfard, 2008). Krzywacki & Hannula (2010) write about teacher identity as an individual and social construct. Through interactions, we begin to learn the roles of others, and we learn to direct our own actions toward our environment (Beijaard, Meijer & Verloop, 2004). We also see that people have situational identities that are actualizing in different contexts (Kaasila & Lauri-al, 2010).

Identity has also been related to mathematics knowledge in teaching, building on the perspective of viewing “knowledge as situated, social and distributed” (Hodgen, 2011, p. 36). The notions of story and narrative have been highlighted and placed in the context of teachers’ professional identities, capturing the situated aspect of teacher knowledge (Stein et al., 1998; Hodgen, 2011). According to these authors, the situated nature of becoming a mathematics teacher involves a process of identity change (p. 406). Thus, although it would be easy to view people who share an interest in teaching as a homogenous group, teacher identity is highly complex.

This literature review primarily details and examines the historical development, and basic tenets of autoethnography and identity. The goal of my study was to provide insight into the identities that constantly shape who I am, and am becoming, as a mathematics educator, and sought to describe and systematically analyze some of my personal experiences within mathematics teaching and learning. The literature discussed in this review has provided an understanding of how autoethnography as a methodology, and identity as a part of my conceptual framework, can be used to center the ways in which I selected and revealed my personal experiences. Au-
toethnography has been found to promote critical reflexivity, or be self-critical, in order to in-form/triangulate intersections of identity. This illuminates autoethnography for its transformative tendencies, which goes beyond mere reflection. It also allows me to simultaneously write and reflect. Autoethnography promotes the evocative nature of my interactions with culture, and helps me to bring out what I feel about the work I do, and how I might feel about others who interact with me in the larger society. Using “snap-shots of memories,” I am engaging myself with surrounding culture. Autoethnography is a platform for reconstructing my past self and looking more deeply at my cultural interactions.

Likewise, autoethnography reifies that “voice” is multi-vocal, which lends itself to the multiple identities that I might possess. These multi-selves, or multiple identities, are not static and exist within, and are developed through, my professional practice. They evolve from my lived experiences, and can affect my participation in culture. Autoethnography activates new meanings of self, where narrative forms of identity give “voice” to my mathematics teacher experiences. This identity originates in my daily work as a mathematics teacher where past experiences in mathematics and future goals in teaching and learning influence my “core” identity. Also, even at its core, my multiple identities cannot be negotiated at once.

3 THEORETICAL FRAMEWORK

An Overview of Cultural Capital

The philosophy of “cultural capital,” which stems from the theory of cultural reproduction, has undergone many contemporary interpretations. Theorists and researchers have long
used its tenets to explain educational attainment, while critical theorists have used it to investigate many issues in education (e.g., the effect of parental involvement or investments in education on students’ educational success (Cheadle, 2008; Lareau, 1987); parental socialization toward high-status culture that is rewarded in schools (Lareau, 2003; Kalmijn and Kraaykamp, 1996); the effects of cultural knowledge, skills, abilities, or competences on grade point averages or achievement (Cheadle, 2008; Roscigno and Ainsworth-Darnell, 1999; DiMaggio, 1982); and cultural participation or involvement in schooling (Dumais, 2002). In a look at the multiple definitions and development of the term “cultural capital” along with significant interpretations of this theory by major theorists, I will critically analyze its historical and philosophical underpinnings, as well as some of its basic elements. I then endeavor to explain how cultural capital theories omit mathematics education directly in favor of power and class disparities. I will also briefly discuss how some cultural capital theories disregard minorities, including African American females, by delineating White middle-class standards from other cultures. Finally, I will examine major strengths and weaknesses in the theory of cultural capital.

Capital and its subsets

Most definitions of capital, like those proposed by economists, refer to the creation and exchange of goods and services. Capital, in this sense, could be a tangible object or something to be used or manipulated to create an output. In part, they might improve that individual’s ability to acquire other forms of capital, but other forms of capital are necessary for the finished product to come into fruition. Capital, then, is “the wealth out of which more wealth comes” (Kilbride, 2000, p. 11).
Human capital “is broadly related with the knowledge and skills embodied in humans that are acquired through schooling, training and experience and are useful in the production of goods, services and further knowledge” (Kumar, 2006, p. 153). Under this definition, human capital “would include…things like language fluency and skills that could be marketed toward employment” (Kilbride, 2000, p. 3). If a person acquired the necessary capital to produce a good, their human capital might contribute to its production in the form of knowledge of the subject matter, or the specific opportunities or know-how to produce the good.

The definition of social capital is more difficult to ascertain because of its multidimensional nature. To understand its value, it must be widely conceptualized. Social capital implies a network of resources coming from groups of people that are easily accessible (e.g., friends, family, coworkers). These groups must be able to provide forms of capital for you that you may not have access to without them. Social capital networks bond similar groups and build bridges between disparate and diverse groups. The opportunist might seek social capital where ties are unfamiliar and rely on other forms of capital to feed human interaction. In this way, social capital is a combination of the other forms of capital where the tenets of human capital strongly influence the extent to which the network is a source of capital (Kilbride, 2000).

Historical Development of Cultural Capital and its basic tenets

Max Weber (1968) defines “status” in his work, Economy and Society, as “an effective claim to social esteem in terms of positive or negative privileges; it is primarily founded on a) style of life, hence b) formal education…[and] c) hereditary or occupational prestige” (p. 305 – 306). Weber further defines formal education as “empirical training or rational instruction,”
which, for me, can be interpreted as the type of learning that can be measured, perhaps by grades. Weber presents a further argument that, “upbringing and education create a common style of life” (p. 306). These shared cultural traits move the group forward in society by “providing coherence to existing social networks and facilitating the development of co-membership, respect, and affection out of which new networks are constructed” (DiMaggio, 1982, p. 189). Although Weber never uses the term “cultural capital” to explain his theory of upward mobility by way of status, he does clearly state that, “every status society lives by conventions [author’s emphasis], which regulate the style of life…” (p. 307).

In his book chapter, “Forms of Capital,” Bourdieu (1986) explains, with Weber’s influence, how “cultural capital” has emerged, and how he intended its use. He posits

The notion of cultural capital initially presented itself to me, in the course of research, as a theoretical hypothesis which made it possible to explain the unequal scholastic achievement of children originating from the different social classes by relating academic success, i.e., the specific profits which children from the different classes and class fractions can obtain in the academic market, to the distribution of cultural capital between the classes and class fractions. (p. 47)

Bourdieu (1986) theorized that it was cultural capital, more than the natural aptitude, which garners success in academic spaces. Thus, the ability of a social class to pass cultural capital from generation to generation…transposing… the representation of culture and of cultural transmission…to the case of societies divided into classes [are what] these theories are based upon [which include] the implicit assumption that the different pedagogic actions which are carried out within the framework of the social structure, that is to say, those which are carried out by families from different social classes as well as that which is practiced by the school, work together in a harmonious way to
transmit a cultural heritage which is considered as being the undivided property of the whole society. (p. 57)

Robinson and Garnier (1985) summarize Bourdieu’s theory well saying, “parents not only…purchase educational credentials for their children but also provide a cultural environment that fosters the development of the kinds of speech patterns, tastes, and interpersonal skills that the educational system rewards with its credentials” (p. 251). Therefore, cultural capital is not a set of knowledge, beliefs, skills, intellect, and ability that is socially acquired; it is “the certification that a person comes from a certain class background” (Robinson and Garnier, p. 252), moreover, inherited from the home and formal schooling and is shared amongst similar social structures and status classes. In this way, the education system was the key element in fostering these abilities. Instead of interrupting class and culture disparities, educational systems used the interactions between teachers and students, curriculum, and pedagogical practices to encourage them. (Bourdieu and Passeron, 1977; Bourdieu, 1977; Bourdieu and Boltanski, 1978; Robinson and Garnier, 1985).

Lareau and Weininger (2003) have done well in outlining other prevalent meanings of cultural capital that convey a consistent theme that has withstood the last thirty years. Researchers continue to find that cultural capital is synonymous with the ability to utilize social resources, but there is much debate over how cultural capital is acquired and measured. What these theorists do agree on, however, is that cultural capital “is assumed to denote knowledge of or competence with ‘highbrow’ aesthetic culture (such as fine art and classical music) [and] researchers assume that the effects of cultural capital must be partitioned from those of properly education
‘skills, ‘ability,’ or ‘achievement’” (p. 568). Thus, quantitative studies emerged to test cultural capital by looking at participant’s attitudes toward high status culture and how, if any, of these factors affect ability, grades and test scores.

In Cultural Capital and School Success, DiMaggio (1982) primarily asserts that school success is attributed to more than measured ability. He then presents an argument consistent with Bourdieu’s (1979) cultural reproduction theory that is fourfold:

1) Measures of cultural capital are related to one another in a manner that suggests the existence of a coherent status culture of which they are elements; 2) Cultural capital is positively related to school success; 3) Cultural capital mediates the relationship between family background and school outcomes; 4) Returns to cultural capital are highest for students from high status families and least to students from low status families. (p. 190)

In an experiment with 2, 906 white students, he uncovers that cultural capital subsumes high status cultures, consistent with Weber’s (1968) own theory of status culture. DiMaggio (1982) marks that the prestige associated with status, particularly those rewarded by teachers through grades, are representative of the ways participants in high status culture are perceived. They are seen as smarter and, in general, better than students who lack these traits. Moreover, DiMaggio (1982) makes a stark argument regarding how cultural capital fails to affect ability in “nontechnical” subjects in school, namely mathematics. He posits, “English, History and Social Studies are subjects in which cultural capital can be expected to make a difference…By contrast, Mathematics requires the acquisition of specific skills in the classroom setting, and students are evaluated primarily on the basis of their success in generating correct answers to sets of problems” (p. 194).
DiMaggio then collaborated with Mohr (1985) in a response to his previous research on cultural capital to investigate the effects of cultural capital on educational attainment and marital selection. With Mohr’s help, again calling upon Weber’s status culture theory, they defined cultural capital as “interest in and experience with prestigious cultural resources” (p. 1233). They measured cultural capital, again empirically, as DiMaggio’s former study that focused towards the impact of family and through formal schooling. This time, the measures included new variables that reinforced the same themes:

1) cultural capital is a significant part of the formal educational system and has been diffused as a cultural model throughout the class structure; 2) cultural capital is preserved through status emulation by many members of the middle class, who have adopted both the cultural tradition and the ideology that legitimates it; 3) interest in and familiarity with high culture are still related to class position, albeit imperfectly; and 4) high-culture activities requiring advanced levels of sophistication or involving exercise of influence are still primarily dominated by occupants of high class positions, as defined by income, education, and occupational attainment. (p. 1236-1237)

DeGraff (1986) cites a similar definition of cultural capital by scrutinizing Bourdieu’s theories along with those of Collins (1971). He affirms cultural capital as a kind of “symbolic” attribute, saying similarly, “children of higher-status groups have access to cultural capital, which consists of appropriate manners and good taste…where pupils most familiar with formal culture are favored and profit more from education than other children” (p. 238). He then reaffirms the notion that, according to Bourdieu’s cultural reproduction theory, cultural resources determine educational attainment.
Farkas, et al (1990) address DiMaggio’s (1982) work with a look into how students are rewarded with grades in secondary school. This approach to the definition of cultural capital gives voice to the teacher, a variable that had been otherwise neglected in the previous research on educational attainment and school success. Although DiMaggio used this variable in his study, he did so empirically where students’ attitudes about how they interacted with their teachers were measured to decide whether or not there was any influence. With Farkas, et al, we see teachers actually being utilized as a determining, authoritative unit for assigning status rather than being conduits for the dominant theories discussed in Bourdieu’s work. In their research, teachers are the “gatekeepers” of cultural capital, now referred to as “cultural resources.” Farkas, et al (1990) define and position these cultural resources as

Informal academic standards by which teachers reward more general skills, habits, and styles [that] go beyond those defined by the elite consumption activities of high culture. [They] are classified according to whether they represent cognitive or noncognitive performance… In sum, cultural resource theory posits a general set of student skills, habits, and styles which figure in student/teacher interaction, and are differentially rewarded by teachers. (p. 127 – 129)

Katsillis and Rubinson (1990) return to the traditional roots of cultural capital in their work, “Cultural capital, student achievement, and educational reproduction: The case of Greece.” In it, they endorse Bourdieu and Passeron’s (1977) definition of cultural capital, and its theory, as “competence in a society’s high status culture, its behavior, habits and attitudes” (p. 270). However, in their discussion of measurability, they remark that it still comes from the home, but question the role of formal schooling in its advancement. They state, “to acquire cultural capital,
the student must have the capacity to receive and decode it. But schools do not provide the techniques for receiving and decoding culture, even though they implicitly demand them from everyone” (p. 270).

In direct opposition to Farkas, et al (1990), in “Cultural and Educational Careers: The Dynamics of Social Reproduction,” Aschaffenburg and Maas (1997) discount “cultural resources” as a form of “cultural capital,” arguing that the former only “operates in certain local contexts [while] cultural capital, generally defined as proficiency in and familiarity with dominant cultural codes and practices…is ‘institutionalized as legitimate and valuable at the societal level’” (p. 573). Along with prescribing to the more traditional definitions of cultural capital as proposed by Bourdieu and DiMaggio, they go on to argue that cultural capital “is actively deployed in making hierarchical distinctions and in reproducing social inequalities.

While previous researchers and theorists have addressed cultural capital for its definition and questioned its sources and measurability, Kalmijn and Kraaykamp (1996) have approached cultural capital for what the others have not; its relevance to the less dominant groups. We are clear at this point that the traditional definitions of cultural capital privy high status groups, which include mostly Whites, of which high culture is easily obtainable through lifestyles, choice of cultural activities, and other available resources that may be passed down in families from generations to generations. A strong review of the relevant literature in their work uncover that Kalmijn and Kraaykamp (1996) do not argue against the dominant theory; however, they do question how cultural capital
is relevant for the influence of class background on educational attainment [for Others]…[They] argue that cultural capital is part of the Euro-American cultural tradition and that selection or self-selection on the basis of cultural capital in the schooling career can be understood as a mechanism through which racial inequality in American society is strengthened. (p. 25)

Their interests were not in investigating where the definitions had come from or why the dominant cultures had a marked advantage in the existing theories; but of why less dominant groups, like Blacks, were experiencing less inclinations to accept dominant theories of cultural capital over time in comparison to Whites. That is, if the dominant theory is perpetuated in a flourishing, successful society, why are other cultures not subscribing to them?

Lamont and Lareau (1988) addressed these themes in their work in regards to defining cultural capital for what it had created, not so much what it was. It is here that we start to see how research on less dominant groups have begun to use the theories to disrupt the traditional themes associated with educational attainment and academic success. Lamont and Lareau defined cultural capital as “widely shared, high status cultural signals used for social and cultural exclusion” (p. 156). Roscigno and Ainsworth-Darnell (1999) have operationalized these ideas to inform their position on cultural capital, which illuminate the role of schools as institutions. They write that schools perpetuate the value of cultural capital possessed by the dominant class. While low- and working-class students may learn to attain the cultural capital of middle- and upper-class students, they lack the inherent knowledge to sustain it. This makes the lower class students more susceptible to academic failure.
By framing cultural capital as “exclusionary,” Roscigno and Ainsworth-Darnell, along with Lamont and Lareau, position its tenets as a set of skills and abilities that can be acquired; however, because of the nature of acquisition (class, family, school experiences), the types of cultural capital utilized by less dominant groups would still differ from the types that promoted social mobility. They implicitly state that, “cultural capital is a useful conceptual extension of how inequality is reproduced” (p. 159), making the previous theories of cultural reproduction applicable to less dominant status groups in ways that rationalized their marginalization. Where Weber and Bourdieu purport characteristics such as language, credentials, goods, attitudes, etc. as signals that are typically operationalized under the theory of cultural capital, the more contemporary theorists and researchers are arguing that these same tenets are easily learned, but are in many ways nontransferable for other racial or ethnic groups.

DeGraaf et al. (2000) reintroduce “cultural resources” as a concept, saying, “cultural resources can be defined as familiarity with the conceptual codes that underlie a specific culture with its major artistic and normative manifestations,” (pg. 93) which should be distinguished from cultural capital, which is “the importance of socialization into highbrow activities, like interest in art and classical music, theater and museum attendance, and reading literature” (p. 93).

Susan Dumais (2002) states emphatically that, “the culture of the dominant class is transmitted and rewarded by the educational system” (p. 44). This assertion is so important because it brings all of the previous definitions to the forefront, affirming a cyclical approach to understanding how these theories are intertwined. First, “to acquire cultural capital, a student must have the ability to receive and internalize it.” Then, “although schools require that students
have this ability, they do not provide it for them; rather, the acquisition of cultural capital and consequent access to academic rewards depend on the cultural capital passed down by the family.” This cultural capital is largely dependent on social class, where access is limited “among the lower classes” (p. 44). Furthermore, “cultural capital is reinforced by an educational system that prefers these styles, leaving most members of the lower classes with little hope of achieving social mobility.” Although her definition of cultural capital is consistent with what other theorists report, she calls into question the role of the educational system, of which Bourdieu himself has rationalized haphazardly.

Dumais (2002) argues that where cultural capital exists is not important to either its function or definition. She implies a more meaningful approach to understanding cultural capital as an understanding of habitus, “one’s view of the world and one’s place in it” where she argues that without this component, the practicality of the theory of cultural capital fails. Lee and Bowen (2006) ascribe to cultural capital as a theory, and also include Dumais’ inclusion of habitus, claiming that cultural capital is an amalgamation of the characteristics of a person (habitus), together with how that person functions with the standards and behaviors learned from the educational spaces available to them (cultural capital). These customs are then reinforced by their family. Here again, the role of parental involvement plays a significant role in acquiring cultural capital more than formal schooling. “Just as economic capital represents the power to purchase products, cultural capital for parents in terms of their children’s education represents the power to promote their children’s academic enhancement” (Grenfell & James, 1998, as cited in Lee and Bowen, 1998, p. 198).
An attempt to define “cultural capital”

The term “cultural capital” has its origins with noted scholar, Pierre Bourdieu. In his work, The Algerians (1958), he asserted that children learn from their families a code of conduct, or set of rules governing polite and proper behavior (p. 95). It was not until 1977 that Bourdieu expounded upon “the term itself, but not its specific meaning” (Drummey, 2010, p. 2), adding that “cultural capital” explains the educational disparities between children from different class backgrounds where they are traded as “cultural goods transmitted through pedagogic actions carried out by family members, and its value depends upon how closely those actions fall in line with those of society’s cultural authorities” (Bourdieu and Passeron, p. 30). Likewise, Rueda, Monzo, and Arzubiaga (2003) agree when they summarize cultural capital as “having the knowledge and experience that results in behaviors and practices aligned to the values of those who are in a position to legitimize them” (p. 2). However, these practices and knowledge sets are gained outside of what can be taught in school (Apple, 1995; Bourdieu, 1998). As a result, it is clear that one major site of cultural capital acquisition and interchange, then, is the home.

For me, the term “cultural capital” is not as much defined as it is operationalized by its function in society. However, the underlying assertion that cultural capital exists in different forms for different people remains clear. Lamont and Lareau (1988) argued for the need of cultural capital to address not only the high status classes, but also to include those from less dominant cultures where schools maintain the hierarchies and disparities associated with the cultural capital of dominant and minority groups.
In sum, children who have already been exposed to high levels of cultural capital prior to entering school, like those acquired from the home, are better suited to and more likely to attain educational success. Students who do not have access to the “middle-class values of achievement” (Rich, 1993), or values of those of the upper class, have a difficult time negotiating the tradition of normative schooling. Thus,

The educational institution succeeds in imposing cultural practices that it does not teach and does not even explicitly demand, but which belong to attributes attached by status to the position it assigns, the qualifications it awards and the social positions to which it later gives access. (Bourdieu, 1984, p. 26)

For the purpose of moving the literature review for this theory along, I ascribe to the definition as presented by Vryonides’ (2007) in “Social and Cultural Capital in Educational Research,” who posits

Cultural capital refers to legitimized knowledge present in a home environment, which allows parents and children to secure advantages from the educational process. For Bourdieu, dispositions, knowledge and habits acquired in the socialization process are accumulated through investment in education and training or in the acquisition of cultural goods. (p. 868)

Cultural Capital and Mathematics Education

In the aforementioned research exploring the relationship between cultural capital and educational attainment, a relationship was found between cultural capital and a student’s socioeconomic status; however, this did not translate into a relationship between cultural capital and achievement in the mathematics classroom (Roscigno, Ainsworth-Darnell, 1999). In part, this argument has been made earlier which suggests that “researchers also hypothesize that lower socioeconomic students achieve less in mathematics because they do not have access to the re-
sources at home and at school (cultural capital) to which students at higher socioeconomic levels have access” (Langlie, 2008, p. 38).

Studies have consistently shown that a person’s social and cultural background routinely influence whether that student will perform well in mathematics (Lamb, 1998). This is marked by the severe downturn in students interests and participation in mathematics in high school, which results in less students pursuing mathematics after graduation. Studies exploring the relationship between student access to cultural capital and its impact on mathematics achievement test the hypothesis that lower socioeconomic and black and Hispanic students have less access to cultural capital and are academically handicapped by this and reflect lower achievement in mathematics as a result (Langlie, 2008, p. 49).

Shapka and Keating (2003) have illuminated gender disparities in mathematical achievement, although the educational gains made by students of both sexes, where conclusions remain varied, show that “the crisis is not specific to [girls or] boys; rather, it is a crisis for African American, Hispanic, and low-income children” (p. 4). While prior reform efforts have brought to the surface the extent of the problem in mathematics education with regard to race or gender issues, there has been little success in the area of social and cultural disadvantage. Johnson (2002) asserts that, “changing content and performance standards without fundamentally transforming educators’ practices, processes, and relationships cannot lead to success” (p. 11). That is, as we continue to critically assess cultural capital from the position of what students acquire from home for exchange in schools, we are ignoring the cultural capital that teachers bring to formal academic spaces that fosters a student’s educational attainment and success.
Strengths and Weaknesses of Cultural Capital Theory

In an analysis of strengths and weaknesses in the definitions of cultural capital from a socio-cultural perspective, I will problematize several dynamics. First, there are inconsistencies within the definitions from the cited theorists. I will highlight some of the more poignant, and explain how these ideas create a space for critical dialogue. Also, the semantics between “cultural capital,” “cultural resources,” and “habitus” create a platform to discuss why several ideas must be combined in order to understand this broad theory. Lastly, I will discuss the role of education in the acquisition of cultural capital, how it has been overlooked in some aspects, and why this is crucial to a study on the impact that cultural capital has in the mathematics classroom.

Winkle-Wagner (2010) informs the importance of investigating limitations of the theory of cultural capital, for

If the limitations of the current applications and interpretations of cultural capital can be better understood, it may be possible to expand the notion of cultural capital to make the theory more relevant to other issues such as race, gender and identity. (p. 2)

As seen in the earlier analyses, theorists and researchers have not agreed on a definition of “cultural capital.” There is a consensus that cultural capital functions to the advantage of dominant culture by granting access to those who are more affluent to high status culture; however, exactly what it is has been lost in translation. Bourdieu has amended his own theory several times in terms of definition: In his earlier work in the 1960s, cultural capital could be defined as informal academic standards that also are class attributes of the dominant class, consisting of
such factors as informal knowledge about education, linguistic competence, and specific attitudes or personal style (Bourdieu and Passeron, 1964/1979). In the early 1970s, Bourdieu refined his definition of cultural capital as academic standards and class attributes to include linguistic aptitude, previous academic culture, formal knowledge of general cultural, and diplomas (Bourdieu and Passeron, 1970/1977). Then in the late 1970s, Bourdieu altered his definition of cultural capital to an indicator and a basis of class position, including cultural attitudes, preferences, and behavior that are conceptualized as “tastes” used for social selection (Bourdieu, 1979/1984).

There is a wider acceptance of the ways in which cultural capital is acquired where there is not much discourse between present researchers, namely, family and education. There are conflicting theories, though, for the acquisition of cultural capital from formal schooling. Where some theorists believe that formal schooling is not the site of acquisition, they purport that it is the setting for which cultural capital is displayed, interchanged, and rewarded.

Another crucial piece to understanding Bourdieu’s theory of cultural capital is that he did not intend to include less dominant cultures in his definition. He focused on those who already possessed the cultural capital that could be measured and verified by certain groups. (Winkle-Wagner, 2010).

Aschaffenburg and Maas (1997) point out that although many of the studies done to address cultural capital have found that the inequities in education are propagated by culture, they all fall short of testing cultural capital effectively. They claim that studies have only measured cultural capital and educational attainment at one point in time, assuming that these ideas are static. Also, DeGraaf (1989) suggests that “tests of cultural capital are based on much too pro-
found frames of culture (e.g. global assessments)” (pg. 52). These theorists assert that culture must be considered microscopically, without ignoring any stage in the social background or effects of stages on educational attainments. Doing so may be extremely misleading.

Another major point of conflict is the consideration of cultural capital between parents and students exclusively. How can the culture of the children live separately from the culture of the parents? In most models, the parent’s cultural capital was measured apart from their children. For example, in the study conducted by DiMaggio and Mohr (1985), the findings suggest that the father’s cultural resources are indicative of his education, not by his class, which is asymptomatic of Bourdieu’s initial argument of cultural capital. They account for this discrepancy by operationalizing the father’s occupational prestige. By introducing a new variable, they are perpetuating causality. Aschaffenburg and Maas (1997) take these discrepancies into account when developing their methods for measuring cultural capital, and find cultural education that takes place out of school always has a greater effect than in-school cultural education. On the other hand, the increment of advantage for outside-school participation declines between finishing high school and beginning college, but is again quite strong for finishing college.

These results indicate that while the children are active participants in formal schooling, their lived home experiences are major contributors to the capital they employ to obtain success. Moreover, when there is a break in the formal schooling process, between finishing high school and beginning college, the value of cultural capital decreases. This may inform an idea that institutionalized schooling practices are where cultural capital is most valued.
Concluding ideas on Cultural Capital

Cultural capital refers to practical knowledge that allows people to draw educational wealth. The ability to acquire cultural capital relies on how invested a person is in their pursuit of cultural goods through their educational attainment. While everybody possesses cultural capital, there are theories of deficiency that delineate White middle-class standards from more diverse cultures. Research supports the argument that the cultural capital teachers bring to educational spaces, especially in mathematics, affect a student’s educational attainment and success, and these gains are highly critical for African American, Hispanic and low-income children.

Cultural capital has a history, however, of ignoring these groups in lieu of higher status groups. This began a tendency for theorists to disrupt the traditional themes associated with cultural capital in favor of positioning it as inclusionary instead of exclusionary. Critics then argued that although students can learn how to negotiate the cultural capital they acquire from learning institutions, they are penalized by their lack of familiarity with what capital they possess.

An Overview of Intersectionality

When addressing women of color, specifically African American women, intersectionality is germane as a critical lens through which to understand the multiple identities that are central to this dissertation. This includes the inability to live apart from either identity (e.g., African American, female, mathematics educator, graduate scholar, etc.) at a particular time, as has been argued of any identity earlier in the literature review. There is limited literature on the “multilayered texture of black women’s lives” (Humm, 1992, p. 136), so “techniques of qualitative in-
quiry and analysis must be intersectional…when studying the complex lives of black women” (Banks, 2009, p. 152).

Crenshaw’s (1989) use of intersectionality presents a framework for understanding the omissions of the experiences of Black women, which she claims are multidimensional. Her main argument for intersectionality, however, highlights only those oppressive forces that work to diminish and distort the discriminations that Black women encounter. Nonetheless, at the core of her argument is the basis for understanding the multiple identities that contribute to my whole being, and why this research piece is relevant to understanding the forces that act on the shaping and reshaping of my ever-evolving identity.

Crenshaw maintains that failing to recognize these multi-dimensionalities, or multiple identities “erases Black women in the conceptualization, identification, and remediation of … discrimination by limiting inquiry to the experiences of otherwise-privileged members of the group” (Crenshaw, 1989, p. 140). In other words, intersectionality conflates being Black and female and mathematics educator, etc., rather than being forced to ascribe to one identity, or perhaps calling upon one identity to the forefront while others lie at rest. For me, the discriminatory practices highlighted by Crenshaw involved in neglecting the intersections of marginalization is beyond the scope of this research, but the idea is paramount as I believe that the intersections of collective marginalities are more substantive than any single experience. Therefore, if I endeavor to conduct my study without using intersectionality as a framework, I am not fully addressing the subordination of Black women, like myself. (Crenshaw, 1989).
Patricia Hills Collins (2000) traverses intersectionality by linking it to the matrix of domination, which has strong ties to Max Weber’s idea of cultural capital. First, her definition of intersectionality is an “analysis claiming that systems of race, social class, gender, sexuality, ethnicity, nation, and age form mutually constructing features of social organization, which shape Black women’s experiences and, in turn, are shaped by Black women” (Collins, 2000, p. 299).

While both Crenshaw and Collins use intersectionality to represent the various ways Black women are marginalized in society (i.e., race, gender, class, ethnicity, etc.), Crenshaw supports her argument by implying that there is a need to first identify the intragroup differences within the politics of identity. That is, “… ignoring difference within groups contributes to tension among group… And so, when the practices expound identity as woman or person of color as an either/or proposition, they relegate the identity of women of color to a location that resists telling” (Crenshaw, 1991, p. 1242). On the other hand, the way intersectionality creates different kinds of experiences is an important issue for Collins. Her approach to intersectionality, then, is about how identifying the different kinds of inequalities affect change in society.

As it refers to the matrix of domination, or “the overall organization of power in a society” (Allan, n.d., p. 8), identity and intersectionality converge into two features, with four domains of power that include structural, disciplinary, hegemonic and interpersonal. The fourth, the interpersonal domain, deals directly with how an individual perceives his or her personal experiences. Therefore, intersectionality “motivates us to look at just how our identities are constructed at the expense of others” (Allan, n.d., p. 10).
As an example of intersectionality and the interpersonal domain of power at work, consider a body of research by Moore (2007). Her work centered around three African American science teachers, and how they viewed their roles in the classroom and their communities, who they were positioned how they taught, as well as how others viewed them. They offered their individual stories to position their identities within the context of their environment (Carver County school district). Moreover, as some of their stories overlapped, they each were three separate individuals with very distinct backgrounds, and they each brought with them authentic experiences that informed their teaching identities. Holland et al. (1998) contend “people’s representations of themselves in the stream of everyday life reveal a multitude of selves that are neither bounded, stable, perduring, nor impermeable” (p. 29). By this, research that links marginalized groups together can be nobly considered as transformative, where readers are not solely looking at and reducing every individual to the collective of their group membership (Lewis, 1993). Moore (2007) goes further to argue,

Truly we are more complex than just our gender or race/ethnicity, yet the intersection of multiple identity markers reveal our relative positioning and the knowledge that we gain from our identities in society and how this positioning impacts our teaching, research, and interactions with others. (p. 705)

Another example of intersectionality and the interpersonal domain of power lies in a study done by Ajayi (2010), where she affirms that, “African American teachers define their role identity from their personal biographies, their lifelong knowledge, lived experiences, and identity as members of a minority group” (p. 670). The narratives that her participants provided showed that they deploy their racial, ethnic and cultural identities to mediate their interpretations of the
curricula and pedagogical practices in powerful, complex and multidimensional ways, including their ethnic and cultural experiences, as well as the ways they interpret their sociocultural selves.

Concluding Ideas on Intersectionality

In sum, intersectionality and the matrix of domination act in collusion to reify the notion that identities are neither bounded nor static. They do not exist alone, and despite the similarities that associate groups (e.g., female educators) in society, it is erroneous to assume that these shared identities are salient to any one particular identity; thus reaffirming the importance of the theory of intersectionality.

While intersectionality is said to be principle to any study dealing with multiple identities and marginalized selves, especially those of African American women, there are critiques of its function as a theory. Nash (2008) questions the transferability of intersectionality and argues that this concept privileges Black women. She believes as a theory it should “capture the ways in which subjects experience subjectivity or strategically deploy identity” (Nash, 2008, p. 11). This suggests that there should be a bounded and static theory associated with intersectionality, which both Crenshaw and Collins have argued against. In addition, Black women are not presented as exemplars of this theory, but as one of the most affected groups that occupy a large amount of the documented sources of discrimination in both works. Providing an agency for intersectionality ignores the idea that it is complex and dynamic (Allan, n.d.).
4 METHODOLOGY

Banks (2001) and Starr (2010) helped me to address my research questions by affirming that “in order to traverse existing [intersectionalities] and their associations, the identity of the educator warrants, perhaps even demands, analytical exploration. For teachers to be effective in a climate of layered and complex diversity, they must become reflexive educators” (Starr, 2010, p. 1). “Through an interrogation of [my] identit[ies] and the locations and interactions pivotal in the formation of identity” (Starr, 2010, p. 1), I utilized autoethnography as a methodology to facilitate an awareness of who I am and my position as a mathematics educator. On a broader scope, I also sought to discover what aspects of cultural capital influence mathematics teacher identities toward empowering them to be change agents for improving pedagogical practices and decision-making. Since the “exploration of identity is not a straightforward process, [I used autoethnography as] an opportunity to effectively acknowledge the pragmatic demands of teaching and of everyday life to take stock of experiences and how they shape who [I] am and what [I] do” (Starr, 2010, p. 4).

Research Design

Qualitative research refers to observation and analysis of data that are not predetermined by the researcher. It assumes that reality is socially constructed through individual or collective definitions of the situation or environment. The goal of qualitative research is to capture the understanding of the social phenomenon as participants experience it. With this, qualitative researcher’s interests are grounded in how people construct, interpret, and make meaning of their
lived experiences (Merriam, 2009, Denzin and Lincoln, 2005). For me, and the nature of the investigation that I am undertaking, qualitative research is the only manner in which my research questions can be answered because “doing qualitative research is a challenge that brings [my] whole self into the process” (Corbin and Strauss, 2008, p. 13). In this piece, I “describe, decode, translate, and otherwise come to terms with the meaning” (Van Maanen, 1979, p. 520) of the cultural capital that informs the moratorium of identities that I encountered in the mathematics classroom. Where new meanings of lived experiences emerged, I embraced new understandings of mathematics education. The process of transforming from existing approaches to different pedagogical practice contributes to the larger purpose of this study, which is to contribute to the knowledge base of mathematics education by offering insights into the ways mathematics educators explore identity and the self to extend sociological understanding regarding mathematics teaching and learning, and teacher identity development.

**Cultural Capital and Intersectionality as a Theoretical Framework**

In 1986, Bourdieu returned to the notion of “cultural capital” by detailing three different types – objectified, embodied and institutionalized. Drummey (2010) synthesizes these forms well, explaining

> The embodied form of cultural capital refers to the ability of its possessor to appreciate a cultural good, such as a painting or a novel, whereas the objectified form refers to the cultural product itself … the institutionalized cultural capital, refers to degrees and diplomas that verify that an individual possesses the embodied form. (p. 3 – 4).

Thus, while a person can obtain objectified capital, they may process and appreciate it differently than another person. In this way, objectified capital is communicable, and embodied capital is
not. For example, possessing a book on how to build a birdhouse is objectified capital. The manners for which you use that book, whether it is to construct the actual birdhouse or to balance on your head while learning to walk gracefully, is embodied capital. “The possession of embodied cultural capital, therefore, is limited to those whose life experiences have allowed them to internalize high cultural capital, or legitimate tastes” (Bourdieu, 1986, p. 246-247). Also, now that cultural capital is being awarded credentials (e.g. degrees and diplomas), educational institutions are the new site for acquisition and interchange. This traditional theory of cultural capital did not fully address a basis for framing my study because of its omission of people of color (Yosso, 2005). Even though Bourdieu’s (1986) notion of cultural capital is subtractive, it was useful to begin to guide my investigation.

Although Lamont and Lareau (1988) argue for a need of cultural capital to include less dominant cultures in the school setting, they purport that this acquisition is merely superficial. The cultural capital negotiated amongst these lower class groups may reveal that further deficit models are perpetuated because of their inability to sustain the learned capital beyond school settings. This exclusionary view of cultural capital (e.g., Roscigno and Ainsworth-Darnell, 1999) angers critical race theorists, who question “So, are there forms of cultural capital that marginalized groups bring to the table that traditional cultural capital theory does not recognize or value? Critical race theory (CRT) answers, yes” (Yosso, 2005, p. 76-77). They synthesize these omissions into six categories, namely:

- aspirational capital,
- navigational capital,
- social capital,
These categories of cultural capital enhance the previous triad in a way that allowed me to utilize a more detailed characterization of the multiple identities that I encountered and uncovered through my investigation. The six types of cultural capital proposed by Yosso (2005) helped give meaning to the experiences I had in the classroom, and each has its own description for the identities that emerge.

Aspirational capital refers to the capacity to be hopeful for successes that might happen in the future despite perceived obstacles. This type of capital allows one to embrace resilience in overcoming what others might deem impossible. Aspirational capital can be embodied through narratives of triumph.

Navigational capital refers to one’s ability to maneuver through social institutions. This includes the ways in which people who are often “othered,” find the means to combat the tense spaces that require them to use social and cultural competencies and strategies in order to first gain access, then find success. Therefore, navigational capital not only recognizes the actions of the individual within the bounds of the institution, but it also connects to the available social networks that facilitate moving the culture through these spaces. Institutions could include schools, the workplace, or other regimented systems.

Social capital includes the networks of people, peers, colleagues and community resources that aid in traversing institutions by providing emotional, physical, and intellectual assis-
tance toward achieving objectified and institutionalized capital. This means social capital acts as a means to facilitate the attainment of the kind of capital that gets rewarded.

Linguistic capital refers to one’s ability to communicate in multiple ways. This may include being able to speak more than one language. However, when in spaces where the participants come from different cultures, linguistic capital may include having a large command of affiliated vocabulary, knowing one’s audience cross-culturally, and the ability to bring “real-world” language to the setting.

Familial capital is associated with embodied capital. It is the capital acquired in the home that one brings to the classroom setting. It is best described as pedagogies of the home (Delgado Bernal, 2002). Familial capital is not just bound by the immediate family; it also includes extended family, and the surrounding community.

Resistant capital is one’s ability to act in ways that challenges and resists the status quo. This form of capital can be transformative, and invokes a sense of rebellion towards the traditional ideas and inequalities that plague minority and other subordinate groups. Resistant capital propels one to recognize the multiple ways in which a person may be discriminated against, and work against those discriminations.

While I am pleased with these six categories for framing cultural capital, there is still a large omission of cultural capital theory as it pertains to the multiple identities that I employ. Resistant capital begins to allow me to develop a theory that includes all of my research questions, and with it, I have to illuminate intersectionality as an associated framework.
To answer the previous questions presented by Nash (2008) pertaining to intersectionality, and to also position the theoretical framework for this study, let us look to Cerri Banks (2009) who in her work, *Black women undergraduates, cultural capital and college success*, comments on the intersectionality theory along with the cultural capital associated with minority women in education. Her research synthesizes the use of cultural capital theory and intersectionality into one coherent framework that describes the personal narratives and experiences of 19 African American women who forged undergraduate spaces in their colleges and universities. Banks’ argument was proof that navigating the Eurocentric spaces of higher education required a proficient knowledge of the social construction (cultural capital) involved in assimilating foreign culture and social practices. When Black women undergraduates used their own social and cultural capital (their multiple identities) as leverage to combat the pressures of marginalization, they achieved academic success. Moreover, Banks’ answer to Nash’s inquiries of intersectionality and the matrix of domination are that “the features of identity shape how social realities are formed and explain that the formation is never fixed. In addition, the elements of identity are never in existence outside of the larger, historical and social contexts and power structures” (Banks, 2009, p. 152).

To conclude, I will utilize a synthesis of the theories of cultural capital and intersectionality as proposed by Bourdieu (1986), Crenshaw (1989), Collins (2000), Yosso (2005), and Banks (2009). This cultural capital/intersectionality theory will enmesh the chief triad (objectified, embodied, institutionalized), with the six omissions as proposed by critical race theorists (aspira-
tional, navigational, social, linguistic, familial, and resistant). With autoethnography at its center, this study will analyze each of the six types of cultural capital as proposed by Yosso (2005), along with their links to the three traditional types proposed by Bourdieu (1986) through some of my personal experiences as a mathematics educator. The relationship between the types of cultural capital is shown in Figure 1, and will be discussed later in this chapter as it pertains to data analysis.

**Participant**

As the researcher and subject, the task of describing oneself is difficult to undertake. In lieu of giving a vague description of who I am, as this study endeavors to reveal much of who I am through data collection and analysis, I default to a method proposed by Chang (2008) where self-reflection lies at the core. The definition of who a person is must include their simultaneous

![Diagram of interconnectedness of cultural capital and autoethnography](image)

*Figure 1. Summary of the interconnectedness of cultural capital and autoethnography*
states of being; therefore, I present a culture-gram in Figure 2. This graphic representation of self indicates the identities that I generally prescribe to at any point in my lived experiences. This culture-gram also illustrates the intersectionalities of these identities as they coexist to constantly inform who I am.

Figure 2: Culture-gram of identities.
Methods

Chang (2008) provides comprehensive models for using autoethnography as methodology in qualitative research. She maintains that, “...autoethnography should be ethnographic in its methodological orientation, cultural in its interpretive orientation, and autobiographical in its content orientation” (p. 48). With that, my methodological approach includes taking an in-depth look at some of my lived mathematical experiences both as a student and as an educator. I analyzed the cultural capital evident in interpreting and resolving existing, and sometime conflicting, identities through which I relay in a first-person narrative form of storytelling.

The use of storytelling as a method for this kind of research is a seemingly obvious choice. As previously conveyed of autoethnography, I agree with Koch (1998) when she states

My understanding is that research is an interactive process shaped by personal history, biography, gender, social class, race and ethnicity and those of the people in the setting. Interpretation as story telling may privilege any number of different positions and like authors who produce literary texts, their readers are subjects who are shaped and positioned by the conditions and ideological formations of their own era. (p. 1182)

I transfer knowing into telling (Mishler, 1986) by giving accounts of my own experiences so that I might “recognize in [my] own stories the stories of others” (Sandelowski, 1991, p. 162). “Narrators are socially positioned to tell stories at given biographical and historical moments and under the influence of prevailing cultural conventions surrounding storytelling, the social context of narration and the audience for a telling” (Sandelowski, 1991, p. 162); for me, that time is now when I am in a moratorium of identities with finding out who I am and who I am becoming. I sought to determine how I use cultural capital to influence the self, and how I might improve my
professional practice in the mathematics classroom by being reflexive and cognizant of these elements simultaneously at work. My storytelling method follows Sandelowski’s (1991) synthesis of Bruner’s (1984) narrative order on life: “life-as-lived (what actually happened), life-as-experienced (the images, feelings, desires, thoughts, and meanings known to the person whose life it is), and life-as-told (a narrative)” (p. 163). As this work is autoethnographic, I capture all three facets of the narrative order as both subject and researcher.

In my storytelling method, I utilized Koch’s (1997) five methods of good story telling: observing, listening, journaling/writing, and rigour. The first method of storytelling, observation, serves as a preliminary step toward evaluating the self. Through observation, I made sense of life-as-lived, and the ways in which I construct myself as a mathematics educator. I answered the questions of who I am, and what I do, through narrating my journey to becoming a teacher. This included where I come from, what factors affected my decision to accept education as a profession, how I ended up in the classroom, and what fueled my journey to pursue mathematics education as a post-graduate.

The second method of storytelling is listening. In this phase, I locate the marginalized voices in my journey, and answer the question, “What is it like being a teacher? …a student of mathematics teaching and learning? …a mathematics professional?” This method exposed specific bold instances of what has shaped and affected my experience as a mathematics educator. I utilized literature and other resources that helped locate my marginalization in mathematics education, and what drive my interests further in mathematics education. I also examined why I continue to pursue mathematics as a profession.
The third and fourth methods of storytelling are journaling/writing. Koch (1997) affirms that this method is central to both understanding one’s personal experiences and locating the self in the research process (p. 1184). It allows me to be self-reflexive by being inwardly introspective for the purposes of analysis. So, as part of the autoethnographic methodology, the stories I provided are a combination of my journaling and inward introspection.

The last method of good storytelling is rigour. This is the credibility of the story to its readers. This method is achieved by having a well-developed theoretical framework, with a detailed method of analysis. Interpretations of the stories are explained in the results section of the study; however, rigour is addressed in the discussion section by answering the following questions: What is the aim of the story? What can we learn from this account? Why does it matter?

Alongside Koch’s (1997) storytelling method, in order to capture unique, noteworthy, and rich stories, I utilized Chang’s (2008) process of chronicling the past by making an autobiographical timeline. Through this exercise, I documented some of the more prevalent mathematics experiences I encountered at each stage of my mathematical growth (Appendix A). Of those, I am able to extract the most influential elements to investigate further. With these existing narratives, I simultaneously collect data using self-reflective methods (Chang, 2008). This data results from “introspection, self-analysis, and self-evaluation of who I am and what I am” (p. 95), chiefly through field journaling.

Data Collection and Analysis

Autoethnography uses personal experience as primary data with the researcher as the primary data source. Autoethnography is a unique qualitative method with narrative inquiry as
its central tenet; therefore, all methods within its paradigm aim at exploring the self within the cultural context. I utilized personal narrative through storytelling as the chief method of data collection. I chronicled who I am mathematically, and included stories from my past experiences that influenced the person I currently am in the classroom with my own students. I chose stories that impacted how I have been shaped by my interactions towards understanding the identities that exist within me. These stories were sometimes born from current experiences that stirred reflections of my past; and through these reflections, I was jarred with other memories that I felt had contributed to who I am today.

Personal narratives propose to understand a self or some aspect of a life as it intersects with a cultural context, connect to other participants as co-researchers, and invite readers to enter the author's world and to use what they learn there to reflect on, understand, and cope with their own lives. (Ellis, 2004, p. 46)

Albeit a process and a product, autoethnography leaves data collection methods open to change as data changes. In that, I utilized external data sources like the literature review, conversations, documents, and dialogue to inform my search of self, for which Chang (2008) says is necessary “to confirm, complement, or dispute internal data generated from recollection and reflection” (p. 8). As an element of storytelling, Koch (1998) recommends the use of listening and observing in addition to journaling. She says doing this can illuminate the kind of questioning “which may encourage rich data to be brought into dialogue” (p. 1186). This external data collection is paramount to the theoretical framework of my study. With influences from Spry (2001) and Ellis & Bochner (1996), my autoethnographical analysis of cultural capital will interpret and reinterpret my experiences of being a student and a professional of mathematics and
mathematics education, “both past and present, lived and living” (Starr, 2010, p. 4), considering many of the intersectionalities present in the formations and transformations of identity. Cultural capital encourages me to locate recurring patterns, using experience and current literature, in order to associate the identity patterns as specified in the nine types: embodied, objectified, and institutionalized; aspirational, navigational, social, linguistic, familial, and resistant.

For example, as I reflected on who I am by evoking memories of my past, some memories of my classroom teaching practices and experiences surfaced. Sometimes, classroom experiences evoked memories of my past. This cyclical process of life-as-lived, life-as-experienced, and life-as-told was recorded in a journal. I used recall along with external data, like literature and conversations that informed my own reflexivity, to document the past experiences through first-person narrative by way of storytelling.

Table 1

*Cultural Capital Coding*

<table>
<thead>
<tr>
<th>Cultural Capital</th>
<th>Descriptions</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirational</td>
<td>Capacity to be hopeful despite obstacles</td>
<td>Orange</td>
</tr>
<tr>
<td>Embodied</td>
<td>Ability to appreciate a cultural good</td>
<td>Red</td>
</tr>
<tr>
<td>Familial</td>
<td>Pedagogy of the home/home-instilled life lessons</td>
<td>Pink</td>
</tr>
<tr>
<td>Institutionalized</td>
<td>Credential assigned to the embodied form of the cultural good</td>
<td>Dark green</td>
</tr>
<tr>
<td>Linguistic</td>
<td>Ability to communicate in multiple ways</td>
<td>Purple</td>
</tr>
<tr>
<td>Navigational</td>
<td>Ability to maneuver/combat tense spaces</td>
<td>Light green</td>
</tr>
<tr>
<td>Objectified</td>
<td>The cultural good itself</td>
<td>Light blue</td>
</tr>
</tbody>
</table>
My perspectives of the lived-experiences were analyzed for which types of cultural capital were present using colored, felt-tipped pens. Table 1 illustrates the coding process for these findings. If the narrative indicated that I negotiated a situation by challenging the status quo, I code that portion of the story dark blue, which displays resistant capital. The themes that emerged from this coding process are discussed in Chapter 5.

**Research Authenticity**

According to Merriam (2009), “as in any research, validity, reliability, and ethics are major concerns” (p. 234). For some researchers, terms like believability, trustworthiness, and transferability are the indicators for assessing quality (Hammersley, 1987; Lincoln and Guba, 1985; Wolcott, 1994; Ratcliffe, 1983; Creswell, 1998). However, my struggles with the criteria to evaluate autoethnographic research resonate with Corbin (2002) when he argues that, “everyone agrees evaluation is necessary but there is little consensus about what the evaluation should consist of” (Corbin & Strauss, 2008, p. 297). Therefore, the common measures of evaluation used by qualitative researchers, which include validity, reliability, and generalizability, are problematic for autoethnographers (Starr, 2010).

According to Koch (1998) autoethnographical methods, including personal narrative and storytelling has been criticized for being unscientific and full of bias or too personal, and even
narcissistic. Under these criteria, autoethnography is subjected to truth paradigms, as in the positivist inquiry, for which I agree with Bochner & Ellis (2000) that autoethnography “is decidedly not a member” (Starr, 2010, p. 10). Researchers who do autoethnography are not concerned with finding truths, but only providing coherent and consistent accounts of the experiences encountered, which Koch (1998) calls narrative fidelity (p. 164-165). So, what can we learn from one person’s account? Why does it matter, then, and what is the aim for telling these stories?

To answer these questions, I again look to Koch (1998) who most eloquently says

> Stories can show where we as [educators] have gone wrong. Listening to the voices of the [teacher/researchers] may show us what to do to improve practice. Stories can be used in evaluating [education] development. Storytelling can be therapeutic. Stories can inform social policy. Stories can facilitate change in organizations. Stories can allow marginalized groups to have a voice. Stories can address diversity through understanding. (pg. 1183)

While critics of autoethnography still “subject [it] to the traditional criteria of validity, reliability, and generalizability” (Starr, 2010, p. 4), Ellis & Bochner (2000) argue that autoethnography should be assessed by “how well the writing will ‘evolve in readers a feeling that the experience described is lifelike, believable, and possible’” (p. 751). Quality autoethnography, then, should “touch readers’ lives by informing their experiences” (Nash, 2004, p. 28). Lincoln & Guba (1989) concur that autoethnography should allow the reader the “ability to identify with the experiences of the writer in terms of his or her own life” (Starr, 2010, p. 5). This can be successful if readers can “explore the process, judge the decisions that were made, and understand what salient factors in the context led the [researcher] to the decisions and interpretations made” (Lincoln & Guba, 1989, p. 242).
Other critics have targeted autoethnography as being narcissistic or self-indulgent (Anderson, 2006; Holt, 2003; Salzman, 2002; Coffey, 1999). I argue, with Bochner and Ellis (2002), that autoethnography is transformative, for both the reader and the researcher, despite its personal nature. Starr (2010) argues that the most important part of autoethnography is its ability to invoke conversations, which can be catalysts for social change. Chang (2008) contributes to the argument by supporting the transformative qualities of autoethnographic work where she agrees the most effective forms are those that evoke emotion from the reader because they sympathize with the author’s circumstances. The burden of quality, then, lies within the structure and integrity of the story being told. For

This kind of writing can inform, awaken, and disturb readers by illustrating their involvement in social processes about which they might not have been consciously aware. Once aware, individuals may find the consequences of their involvement (or lack of it) unacceptable and seek to change the situation. In such circumstances, the potential for individual and collective restorying is enhanced. (Sparkes, 2002, p. 221)

Therefore, as autoethnography champions discourse between the researcher and the relevant experiences in which they have engaged in socially, culturally, and personally (Starr, 2010), it challenges the criterion for quality by demanding researchers to “dig deeper into their memories, excavate rich details, bring them onto examination tables to sort, label, interconnect, and contextualize them in the sociocultural environment” (Chang, 2008, p. 51).

**Empirical Conversation**

When writing autoethnography, it is helpful to read the autoethnographies of others (Chang, 2008; Nash, 2002; Florio-Ruane, 2001). Following their advice, I have read Stinson’s
(2009) work, An Autoethnography: A Mathematics Teacher’s Journey of Identity and Change. In it, he includes a section about the introspective look at how his identity is formed and transformed, while illuminating the processes of dialogue between subject and researcher, which happen to be the same person. He states, “the construction of knowledge about my teaching practices occurs as I converse with myself about the past experiences, present observations and future possibilities” (p. 45). He then establishes a line of questioning that guides his introspection and focuses the thought processes involved in creating a quality autoethnographic work. In like fashion, I consider the following lines of inquiry to guide this research on identity:

How does a story detail practices in which the teller claims an identity? How does the identity claimed in the story depend on certain values that go beyond the self, and how does the personal story make a claim for some social values and against others? How does the act of storytelling work dialogically, not so much to claim others’ recognition for the self’s authenticity, but rather to fashion that authenticity out of recognitions that the story provides for? How are dialogical relationships both the topic of the story, its content, and also the goal of telling the story, its process? (Frank, 2002, p. 15)

These new inquiries become research questions that the methods and methodology endeavor to answer through critical inquiry and data analyses. They reify the authenticity and quality of the research, and qualify the reasons that this research is so important. Moreover, to finally address the criterion for quality, I assert that authenticity is interpersonal, and agree with Frank (2002), when he further argues, “These questions reflect the recognition that the story is not, as Bauman imagines it, a spectacle “of ‘inner selves’ striving to be let out.” Stories are attempts of a self to find identity in terms outside itself” (p. 15).
Ethical Considerations

The ethics involved in autoethnographical research are such that the researcher, who is also the subject, must consider those affected by, and who participates in, the experiences that are being told. Sometimes, this aspect of the research is difficult to contain because “even when you are the primary source of data, your story often includes others” (Chang, 2008, p. 68). Chang goes on to argue with the help of Clandinin and Connelly (2000) with the question: “Do [you] own a story because [you] tell it” (p. 69)? To recognize that others are always implicated when you (re)tell stories “entails extensive ethical obligations. The researcher who solicits people’s stories does not simply collect data but assents to enter into a relationship with the respondent and become part of that person’s on-going struggle … toward a moral life” (Frank, 2002, p. 16). This means the act of narrative and storytelling has the potential to put others on display even when the intent is to illuminate the self. Because of this, when I engaged in personal narrative and storytelling, I used pseudonyms for persons I interact with to relay the experiences I encounter from my own personal perspective. I also completed the Georgia State University IRB application for the Safety of Human Subjects, and was granted approval (See Appendix B).

5 RESULTS

When I tell people I teach mathematics, their reactions often suggest that they believe me to be an extremely smart person. I could report that I have always been a very good math student, and exceptionally smart. I could say that mathematics came easy to me, and I have always loved it, and that I was one of the brightest in my classes in school. Those statements have limited
truth-value, to an extent, and there are some very poignant instances that live with me from my
career and mathematical development that speak to my mathematic identities. These stories
of who I was, who I am, and how I have arrived at the present circumstance of wondering who
am I becoming as a mathematics educator are discussed here.

In this chapter, I chronicled who I am mathematically. I included stories from my past
experiences that influence the person I currently am in the classroom with my own students, and
how I have been shaped by my interactions towards understanding the identities that exist within
me. I started with my earliest memories of receiving classroom instruction in mathematics and
used Chang’s (2008) technique of “chronicling the past” as a guide to organize the memories by
following chronologically throughout my schooling years. I highlighted “epiphanies” (Bochner
& Ellis, 1992; Denzin, 1989) that heavily flooded my mind when in the observation phase of my
storytelling journey. During this reflexive process, more recent memories of classroom encoun-
ters entered. I interweaved stories that were born from my journaling within context and gave
insight into these encounters through my reflections. I then provided an analysis of how these
stories are relevant to interactions with my own students, and speak briefly on the cultural capital
that was evident. I slowly revealed how these experiences have impacted, and continue to im-
pact, my current teaching pedagogies, my interactions in my classes with my students, and the
ideas I hold about mathematics teaching and learning, thus contributing to my identities.

My First “F”

I attended an urban middle school in south Atlanta. The population was predominately
African American, with an all Black faculty and administration. I remember a lot about that
school, including where my classes were each year I attended. I remember gang activity was big in that school, as I watched several young men get “jumped” into the gangs there. I rode the school bus and often heard provocative stories of my classmate’s older brothers and sisters weekend activities of partying, drinking and sex. There was an apartment complex at the end of the street at the school bus stop where we would often go in to stop by the “candy lady’s” house to get dill pickle chips and peach chew candies. I grew up in this neighborhood, but since my grandmother was a schoolteacher, I had not attended school with these kids before. I went to the school she taught at in another part of town from kindergarten through fifth grade, but since she retired, I had to go to my zoned school for grades six through eight. All these kids had already known each other. I only knew the kids that grew up on my street.

I remember the first day of sixth grade. I sat in my first period class with the teacher who was also my homeroom teacher, so I did not have to change classroom locations when the bell rang in the morning. It was a Literature class. I remember the teacher asking who knew what a simile and a metaphor was; I raised my hand enthusiastically. I remember she then asked about five paragraph essays; again, my hand flew up. She asked about elements of writing like sentence structures, prepositions, and conjugating verbs; yes, the same happened. I also remember being the only person responding. I was stared at in hate. I could hear the other students starting to whisper about me, tearing me apart from my glasses to my shiny black school shoes. I got threatened that day: stop acting smarter than everybody, and shut up or get beat up. I obliged...the rest of the first day of school I sat in silence. It didn’t take long for me to figure out that I was not going to belong in that first period literature class, or any of my classes for that
matter. I do not know if my mother was responsible, or maybe my first period teacher had helped, but day 2 of middle school I received a schedule change to all gifted/honors classes.

I remember being in eighth grade. I took Algebra. You didn’t cross Mrs. Buckner. We all liked her and feared her as well. She was a large African American woman, big in both stature and weight, and she had an enormous voice. She commanded attention, and I remember we all feared her just enough to stay in line and not misbehave. She had a way of knowing your very soul before you opened your mouth. She could set you straight and love you at the same time. Although she commanded attention, she NEVER got up from her desk unless she had to step away from the classroom.

I remember that the lesson on this particular day was Order of Operations. She had asked us to take out our homework and exchange it with a neighbor, which was a common teaching practice she employed. After the initial exchange, she would then ask us to exchange it again so that the persons sitting immediately next to you would not end up with your work. She began calling out answers aloud, and we commenced with checking each other’s papers. At the end of this exercise, she would call out your name, and the person with your paper said your grade aloud so that she could record the score in her grade book. When she got to my name, Stewart said, “zero!”

Wait...what? Of course there is some mistake. That was certainly not MY paper. So, I walked over to him and picked up the paper, and yes, that was my name next to the biggest “goose egg” I had ever seen, with a sad face drawn inside. I immediately began to cry, and Mrs. Buckner became upset and yelled at me, “Get yourself together, gurl and sit down!” I knew why
I was saddened, but why was she yelling at me? Didn’t she know that I never got grades like this before, and that my world revolved around being smart and doing well in school? I do not remember what my classmates did at the sight of me crying because I totally blocked them out. I never reacted like this at school, and was completely consumed by this grade. It was devastating, and I did not understand what had happened. I felt confident about my work in mathematics up to this point, and most of my friends checked their work according to mine on our class assignments. How did this happen?

When I could not pull it together, I remember Mrs. Buckner telling me to go to the board, and quickly! She commanded that I redo every single problem from that assignment so that she could see it. I was weak from crying, and embarrassed, but I got up out of that wooden desk, and walked to the board. I picked up the thick chalk, and wrote the first problem down from my paper. My teacher had taught us to show each step, so I began to work as I had been instructed. After I wrote the second line, she said, “no, wrong” and I began to cry again. She told me to erase it, and start again. I know that I stood there seemingly ever! I remember that she never comforted me through it, and I also remember distinctly missing my next class while working those problems for her at that board. I remember my hair and face being dusted with chalk, and my shirt wet with tears and snot; but most importantly, I never got an F on any mathematics assignment again.

That experience taught me more about myself than I was able to understand as a twelve year old. As I reflect back on that instance, which I have retold many times in jest, I understand two things about myself: 1) I am still afraid to fail in front of others, although I am able to man-
age the tears and snot a little better; and 2) I am passionate about good work. Alternatively, I also hold that teacher personally responsible for a study technique that I still use 20 years later.

Whenever I work mathematics problems, I have to use blank, lineless paper (in remembrance of that chalkboard). When I make mistakes, I refuse to erase (in remembrance of my coated hair and face).

**After My First “F”**

I wrote this story in my journal one day after my ninth grade students made comments about how smart they thought I was. It was a day that I had begun class a little late because I was handling a situation in the hallway between another teacher and her student. I rushed in, and said, “We won’t have time to really go over the Warm-up, so I will have to trust that you first completed it, and that you understood what you were doing. Does anybody want to see any one of the Warm-up problems done on the board? A couple of students raised their hands, and said the same numbered problem. I did the problem for them on the board, and said, “How about that? Is that better for you…do you understand now?” They cheerfully agreed, and I remained at the board, and said, “Well yesterday, we were talking about midpoint and distance, and we worked on the number line. I am assuming the next logical step is to go to the coordinate plane with these concepts. I suppose the author of your textbook introduces a couple of points, and you’re expected to find the distance and midpoint using two formulas. But then, OH YEAH, there should be a right triangle somewhere, because they always want you to come up with the formula for distance on your own using the Pythagorean Theorem. Is anybody looking in a book…I’m not, so you’ll have to tell me if I’m correct. Who’s looking?” I paused, and they were
all scrambling to find the pages I was referring to...when someone found it, they shouted,

“Yeah! Ms. Williams, you’re right! It’s all here, just like you said!” Someone else said, “Man, did you just remember that? How did you know it was here and you’re not even looking in a book? Ms. Williams is an old genius-face!” I laughed, and said, “You guys, I’ve been teaching this stuff for years! There is not much that ever changes in mathematics...even when the standards change, and even though these books are brand new, it’s all pretty much the same as when I was a student.” They laughed really hard then, because someone remarked, “Yeah, cause Ms. Williams is real old!” I joined in laughter, and then I said, “Now y’all know I am not a genius, right? I have failed plenty of times before. Even on something that you guys would think was really easy, because you all did a great job with it when we went over it. Order of Operations, remember? You all got it MUCH faster than I did. I totally bombed it! I just could NOT understand it at all when I first saw it, and it took me forever to figure it out.” Once their faces looked interested and I heard the scattered “whoa” and “what?” and “that WAS easy, PEMDAS! You didn’t know that?!?” I eagerly went into this story from my past experience with them.

**Analysis of My First “F”**

I thought it important to let my students know that even though they see me as a teacher who knows the content (which I have come to know that not all students feel that way about their teacher), they should realize that sometimes when things seem difficult at the time, they CAN master them with practice. The aspirational capital and embodied capital in this story acted in oppositional ways. Where I was able to prescribe to the confidence of being able to “raise my hand enthusiastically,” and be “confident about my work in mathematics” (embodied capital) at
an early stage in my own mathematical development, I simultaneously owned an identity of fear and embarrassment when I struggled with learning how to solve problems involving the order of operations. These multiple identities existed where I was not only able to celebrate what I knew, but also at times where I would sink into a feeling of complete failure when the work did not come as easily. The opportunity to be reflexive and name the cultural capital at work in my story allowed me to realize and sympathize with how hard it can be for my students to grasp new concepts, added to the fact that we move so quickly in our accelerated/gifted classes. Sometimes, new concepts leave many of them confused and upset, feeling that they are unable to keep up, or that they are not intelligent. I wanted them to know, “Yes, I have been there too!” By being reflexive, I wanted to give myself a human face...I realized they see me as “the teacher,” so much, and I am most usually in complete control, that in some respects that makes me the “know all, see all.” In fact, however, I am just like them. What I know, I have worked hard to know, and at times that process has not come easy to me. Mathematics is only mastered through practice, and since I have committed my life to teaching, which involves doing, I am constantly reaffirming what it is I know; therefore, I am getting better and more proficient every time I engage in it. I wanted to model that for my students, to perhaps get them to understand the importance of consistent practice and studying. I also wanted them to know that I sympathize with the fears of not knowing, and that I have been exactly where they are; I have walked in their shoes. I had never seen them so attentive as when I shared this story. Even the student that was the most often off-task listened attentively.
Unique Goes to the Board

One of my classes for the 2012-2013 school year was Accelerated/Gifted Common Core Georgia Performance Standards (CCGPS) Coordinate Algebra/Analytic Geometry A which was a freshman class held during the last period of the day. I had a student in that class, Unique, who struggled a lot, but she did so in silence. I cannot say that she reminded me of myself, because I was never afraid to speak or respond in class. I think it is because I was always pretty much on the right track and could receive validation for my work or responses with my teachers. I graded Unique’s work daily, along with all my other students, so I knew what kind of struggles she had. I found it hard to address her issues in class because the other students drove my instruction. They answered quickly, and pressed me to keep a steady pace with the material, and I did not want to create a boring atmosphere where I might lose their focus by not staying on track daily. But, I still worried about Unique, and I thought others might benefit from us addressing her mistakes as a class. I remember asking Unique to come to the board one day to work a problem that I knew she had gotten wrong on a previous assignment. At first, she declined, just by shaking her head, “no”. I then let her know that her declination was not an option, and she became upset. I could tell by the way she rolled her eyes and exhaled deeply, much like I do when I’m bothered by something, or someone. I asked again, this time with a bit more authority. She still refused, and I insisted that she would receive my help if she just made an effort to try. She finally went up to the board after several insistencies from me, and she began to work. I stopped her when she went wrong, and questioned her processes along the way. She was frustrated, and I knew she was about to give up before we made a breakthrough. I did not know,
however, how upset she actually was until she threw my Expo marker at the board and yelled, “I TOLD YOU I CAN’T DO THIS SHIT!” The students sat anxiously for my responding quip, as I have become most popular for my clever retorts when students attempt to get “fly” with me. I could hear a male voice say, “oh, pause for the turn up! Ms. Williams ‘bout to get her!” It caught me so off guard…I calmly said, “then you definitely won’t be able to do the shit I’m about to give you next.” After uproarious laughter, and a few high fives amongst the students, I got the students calm enough to finish that class period’s lesson for that day, and of course I asked to see Unique after the bell rang.

Apparently she had already phoned/texted her mother from her desk, because as I told her “we will have to contact a parent about your rude behavior,” Unique said, “my mama already on her way up here.” When I first began teaching, this would have made me very nervous. I never liked, and still loathe, unannounced parent visits especially when I thought I had done something to upset them or their children. However, with ten years under my belt, I almost dared a parent to come after me.

When Unique’s mother arrived, I remember offering her a seat at the table where we conferenced. She began speaking and never sat down. I became fixated on the empty chair for a minute, and didn’t even hear what she was saying initially. She had asked me a question, and I missed the time to respond, so in that silence she said, “Huh?! Ms. Williams!!” I again asked her to have a seat, and she said, “No, I’m fine here.” I took that as an act of aggression, and repositioned myself in my own seat…slightly raised my back with both feet planted firmly on the floor. See, where I am from, we don’t allow others to “get the jump” on us in compromising situations.
There must be a level playing field, so just in case that parent wanted to lunge at me, I could move quickly! Well, we discussed the event that happened in class that day. I made sure to tell the story exactly as it happened, citing, “then I said...then she said...then I said...then she said” until the details were covered. The mother then suggested to me that she was disappointed that I let her daughter evoke a “rise” in me. She was more upset that she had to come to “referee” an issue that could have easily been handled without her. She stated that she worked and had to leave a client in order to come meet with us. She said to me, “you’re the teacher, you have to keep your cool too!” Wait...what? Was I HER child now? Who was she talking to? I thought to myself, “ma’am, I did remain cool, what are you suggesting? I merely responded to her as she did me. I’m a person with feelings too. I was only trying to help her where she wouldn’t ask for help. What about her actions?!”. I was upset that to the mother, the response I gave weighed more than my technique to get Unique to try. My attempt to get Unique involved, and an active part of class to perhaps motivate her inquiries was being overshadowed by emotions and one bad word!

I collected myself enough to not be upset at her mother for misjudging my intentions, and Unique said, “Ms. Williams, I feel like you put me up there to embarrass me. You know I didn’t know what I was doing, and everybody was looking at me.” I thought, damn, I hurt my child by trying to help her....Could I have thought that my past experiences of being put on display would render the same outcome with Unique? Did I think that Unique and I shared a similar mathematical identity, so much that this technique that worked for me 20 years ago might help bring her out of her shell. She did not tell me she loved math; nor did she show an enthusiasm for good
grades as I did. What was I thinking? How could I have done that to her, and in the classroom in front of everybody for all that mattered? I did not feel good about myself as a teacher at that moment, and more poorly about myself as a person. I now looked bad in front of the parent AND the student. What was I doing? I thought I knew better, had more experience than that, and had been in the classroom long enough to handle that situation better. Who was I? What was I doing in the classroom that day?

**After Unique Goes to the Board**

I was very angry about what happened with Unique, and wrote about this story in my journal to essentially let go of some bad emotions: *I never like having to “get with” my students, and I especially don’t like when they don’t try!* I told her we would help her with this problem, and all she had to do was get up there, write down what we said, and get it over with! I really did not think it was a big deal! It’s JUST a math problem, not the end of your life, I mean, GOD!

Sometimes, we need time to vent and then reflect to improve our practice, and make changes to our approach with our students. I also felt that it was necessary to write my frustrations out rather than take them out on my students. The linguistic capital, which include the multiple ways I communicated with Unique about going to the board (“I asked [her] again, this time with a bit more authority,” and “I calmly said, ‘then you definitely won’t be able to do the shit I’m about to give you next’”) showed that I could relay to her the manner in which I wanted my intentions received. When I did not get the response from her I needed, my communication changed, in some ways abruptly, to redirect her. Through analyzing the linguistic capital associated with this story, I discovered that my wanting to help her “by any means necessary” was not
a proper way to proceed. Sometimes as educators, we have to remember that our students do not hold the same ideas about learning as we do. Their life experiences have not warranted the opportunity to deal with defeat or difficulty like we would expect, or even like we would. After thinking through what happened, and listening to Unique tell me that she did not think I cared about her, and that I set her up to not only fail but to be ridiculed in front of everyone hurt me to my core. In fact, I did care, but my caring did not translate into my tactic today. I totally get it now. The way she felt about me and mathematics was what she projected on how I handled her today and this situation today. Before today, she and I had not spoken at all besides about her work, or what I expected her to do in class. We did not know each other, so why would she think I had her best interests in mind when I put her on display? She declined coming to the board for a reason, and I ignored it. She was already uncomfortable, and I made her come anyway. I was not considerate or willing to value her in the classroom. I had turned into the authoritarian with her, and she felt cornered. She did not have a choice or a voice in her learning.

This makes me think of my friend that quit teaching because she was being made to do something that she felt she absolutely couldn’t…and now, here I am reinforcing this behavior with a child. I have to fix this. I do not want to lose her completely when we have so much of the semester left. Unique has awesome potential, and I know I can get her back on track if we discuss this issue and I let her have a say in when and where her learning will take place. We will negotiate her learning and I will be respectful of her, and how she wants it to happen.
Analysis of Unique Goes to the Board

The reflexive nature of autoethnography allowed me to scrutinize my intentions for motivating Unique. The navigational and aspirational capital showed that I negotiated my own identity when it came to considering Unique’s reactions to my pedagogical choices. When I recalled, “My attempt to get Unique involved, and an active part of class to perhaps motivate her inquiries” (aspirational capital), I was initially positioned as authoritarian. When the identities associated with power and domination proved to affect Unique in a negative way, I retracted them and tried out new identities. My ability to combat a tense situation by redirecting my students after both my and Unique’s outbursts in class as when “I got the students calm enough to finish that class period’s lesson for that day…I collected myself enough to not be upset…” (navigational capital), showed that I possessed the ability to traverse through and transform from a negative space and get everyone back on track to finish class successfully. This “trying out” of identities in my classroom was necessary to maintain an atmosphere of equity in which I had to relinquish who I wanted to be in order to create a more comfortable learning environment for all of the students.

The struggle with empowerment vs. authority resonated with me as my identity was transformed through my interaction with Unique. Being empowered does not come at the expense of others, nor when you have perpetuated an authoritarian identity for them to succumb to what you want. From my experience with Unique, empowered teachers breed empowered students as successful classroom communication depends on how authority is negotiated with the students. Sharing classroom authority does not imply relinquishing complete control on the
teacher’s part. When teachers are will to share the decisionmaking in classroom practices, they may be able to improve instruction and success overall. (Marks and Louis, 1997)

**Teacher’s Pet**

*When I reached high school, I had very pleasant mathematics experiences. I learned so much, and worked so hard, and my work had immediate pay offs. I received many “Student of the Month” titles, and certificates of achievement at the end of the semesters for having the highest averages in my math courses. I was in the Magnet Program (part of the free public school system where there is a prescribed curricula for students who test-in with high interests in engineering, mathematics, and applied technology), which I had tested into, and the school I attended had been a State School of Excellence (schools with this status are recognized as having superior achievement, model schools in their district, or having shown the most improvement over a period of time). I took all accelerated classes, and ended taking Advanced Placement Calculus as my final mathematics course, which I excelled in.*

*My high school was in an urban area of Atlanta, and had a predominately black faculty. I remember two teachers at my school being White, and the Spanish teacher was Hispanic. The administration was completely African American. The area was notorious for crime, as we would see our school neighborhood on the evening news often. Sometimes when we returned to school, conversations of whose family was involved in the crimes, or who knew what person that got arrested buzzed the halls. There were many school rivals in our area. I remember sometimes fights would break out if a student transferred to us from a rival school. I also remember a ter*
rible fight that started in the school cafeteria, and ended in a shattered glass door with a blood trail up the stairs and down the hallway.

My cousin helped me to remember an instance that I had altogether forgotten, about a teacher we had together in ninth grade. We took Geometry, and my teacher was an older African American woman. She walked slightly hunched over, had a thick mustache, and she never raised her voice. I remember a lot of my friends played around in class during our ninth grade year. I even got into some trouble now and then, but only in Civics, which I absolutely hated! I never had enough to do, and when I asked the teacher for more work, she said, “You are the most ornery little girl I’ve ever met!”

My mathematics teacher, Mrs. Grant, had a lot of classroom management issues, and most of my class was unruly all of the time. My cousin said to me years ago, “I remember you and (so and so) being like the teacher’s pet in Geometry. She would move our desks around so that her back was to us, and she would teach y’all and ignore us. We used to act crazy in that lady class!” I had never realized that was happening, and I certainly did not think I, along with a few others, was getting preferential treatment in that setting. I enjoyed what I was doing, and I reveled in the fact that I had been well prepared to handle the work in that class which made it essentially easy for me to grasp. Mathematics was fun and I continued to do well despite my surroundings.

This memory made me reflect on if I ever had students that could say that I neglected them in class…or even, did I ever show favor for some students over others? While I cannot recall any specific instances of these occurrences, nor do I have the voices of my students to ring
free here, I do vividly recall many students saying to me that they hated me when they were freshman. I thought, “oh, no! You guys are some of the best students I have ever taught! You did not like me?” I wondered what they meant, and eventually asked when I felt comfortable hearing the responses. The most consistent response was, “you were mean,” or “you didn’t let us go to the bathroom,” and the ever popular, “you gave us so much work!”

Still, I wonder if I had indeed changed, or been transformed, throughout their years with me. I often keep the same students because I teach the gifted/accelerated students. They would know if something in me had changed...or be able to identify what was it about me that made them like me more after they were freshman. Who was I in front of freshman classes that somehow might have been changed as my students got older? What identity did I ascribe to with freshman that was perceived differently later on?

After Teacher’s Pet

I waited to respond to this journal entry, because this one has been the toughest to address. Many of us would like to say that we have been fair, and have cared about every student we have ever taught, or that we have tried very hard to reach every student at their level in order to teach them to value education, and work with them…but I have not always done that. I think I am now ready to be honest about who I am, and sometimes, and it is not always pretty, or fair.

I taught a class two years ago. This course was a repeater course (the students had all just failed the course the first semester, and since there were so many failures, a recovery class was created to try to get these students to pass before summer school became an option). The class was created about 4 weeks into the semester, which meant I was not only getting brand new stu-
dents after a grading period, but I was also losing students that I had bonded with. I was upset, and I had a terrible attitude about this new situation. The students were to report to me on the day that they didn’t even know their schedules had been changed, so I had to go and retrieve them from other classes and inform them of their new schedules. They were allowed to stay in their original classes that day, but be warned that they had new schedules for that next Monday. Man, when I saw some of these kids, I honestly felt like, “aww, hell…here we go!” That meant, merely on sight, I was discouraged with what would happen.

That Monday, they reported to class. Some slinked in late, they were lazy-acting (I had syllabi and calendars out for them to pick up, they passed by my stacks and did not pick up the papers, so I had to engage in unwanted conversation about picking up materials). I was just too tired of this situation before it even started. I went through my spiel about my expectations, class rules, the course and its content, and they all looked less than enthused about this new situation. Honestly, so was I. Then, entered the resource teacher, and I thought, “SHIT!” My experience with a co-teacher before had been a nightmare of which we almost “came to blows.” She had asked one of my students to leave the classroom to retrieve her cell phone from her office within the first fifteen minutes of class (which in my school is against policy), and she convinced him not to tell me why he was leaving my class. Anyway, that situation resulted in the co-teacher and my student both being locked outside of my classroom, and when the teacher got the assistant principal to assist her in getting back in, we started to scream at each other and got called into the office.
This resource teacher was late to class on the first day, so I thought this is something that will always happen. She came in and left again, and I thought, “Most certainly, yes…she doesn’t want to be in here either.” I did not have anything planned for the students that day besides a diagnostic assessment of what concepts they missed from the first semester. It was my intention to be able to pinpoint what topics I needed to cover, and not to waste time just doing the whole course again if we did not need to. Well, I am not sure if they tried or not, but they did not even attempt most of the test. Those that did were not able to do much more than maybe the first couple or problems. Many of them laid their heads down and slept, and I did not bother with them finishing the test.

The next day, I had my lesson prepared, and a Warm-up was posted on the board when they arrived. The students were not doing the work! They were up walking around, talking with each other, off task…I was livid. “Wait, hold up! I don’t know what y’all are used to, but this ain’t it! In here, you WILL sit down, you WILL do your work, you WILL NOT talk, and you DEFINITELY won’t get out your seat.” Someone asked to go to the bathroom, “NO! Sit down!” I did not even look to see who was speaking. Then I said, “Look, we are all in a situation that we really don’t like. But if this is an opportunity to get it done a second time, then y’all need to take advantage of the situation and plan to not fail again. I wouldn’t be in a repeater class and do what I did the first time I failed!” I yelled at them…and I never yell!

We had some good days, but most were bad days. Those students would pull out their cell phones during class time, and I had gotten so tired of write-ups and correcting behaviors, by that time in the semester I did not even care anymore. I taught the ones that wanted to pay atten-
tion and learn. I averaged about 8 papers per class period, and the class was full, about 30 stu-
dents. I watched a drug deal go down in the classroom, and the resource teacher and I reenacted
the situation for the assistant principal who said, “I don’t have the authority to do a body search
on any child.” I was just completely over it. I had a diabetic student who was also the class
“candy lady.” I had a student who liked to crawl around on the floor, and he often referred to
himself as “Kevin Hart.” I had a student who thought she would use my classroom as a picnic
area, and slowly take food out and place it on her desk like we were spending a Saturday at the
park under a tree next to a hammock. One day she spilled juice all over my floor and just let it
run all over before she said, “I didn’t do that.” I also had the student that liked to fight. The kids
attempted to show me on YouTube how he had fought some other boy, and I declined seeing it.
He would say, “I can beat any nigga ass in this classroom! Who want it!” I told him, “Sit your
narrow ass down boy!” He was attention seeking, but surprisingly very polite to my every re-
quest, and actually was very smart! But there were times that someone would take him up on his
offer, and he would be gone from school for ten days straight on suspensions. Lord, I was dying
slowly with these kids. I had lost all hope. I had a teacher come by to visit, and I have no idea
how I was looking but she said, “Dang, Ms. Williams…ugh, what’s going on in here girl? Is this
YOUR class?” I had a couple of gentlemen who sat in the back corner that were always engaged
in something. I had come to find out that one had run away from home to go live with the other
one. The parent came to the school to see if we had seen her son who had been missing for days.
I told her, “He has never missed a day of my class. He also has changed clothes, so he’s living
somewhere!” I also had a student that would overtly refuse to do the work. You know the type,
they will not work, but instead of suffering in silence, they have to let everybody know in their loudest voice that they “don’t give a fuck!” Yeah…this was my class.

Oh, the resource teacher? She got ghost weeks ago. We stopped seeing her altogether. It had gotten so bad that when she did show up, the kids lamented, “oh, here her ass go.” I never established a good rapport with the kids. And no, they were not all bad. The few that did the work, did well. Sometimes I taught through talking and laughter, as though it were not even going on. Although I did not rearrange their desks, I taught to the few that wanted to learn. I called on them, only, and I asked them to the board specifically. One student asked, “Why you don’t never ask me to come up there, Ms. Williams?” I responded, “Oh, you’re listening today, and not crawling on the floor like a roach?” The kids would laugh, and he said, “Oh, you funny today? You ain’t mad today?” I said, “I’m me everyday, sweetheart. Take it or leave it.”

This situation was the worse…for them and for me. By the end of the semester, I had maybe those eight kids to pass. Two had been jailed; one for drug possession, the other for rape. The kid who ran away from home befriended me for some reason. He started to do his work at the very end, which did not prove enough to get him to pass, but he knew I liked that he was trying, and I told him how I felt. The young man whom he had fled to live with had been withdrawn from our school. His mother and father had hopes of him becoming a basketball player, but found him and his younger brother behind their house smoking pot and blamed the neighborhood. Little miss picnic basket stopped coming to class long before the semester was over. She had told the other students that she would end up doing something to me if she continued to come. I do not know what that meant exactly, but that arrangement was best for both of us.
When the receiving teacher got that same class again, to repeat the class again, I knew her struggles, and I hugged her. I offered help where I could. I let her know who was good at what, and what few techniques had seemed to work. I often saw them getting put out, or security coming to pick them up throughout that next semester and felt so sorry for them. I still believe that in all my experience, I was not equipped to help them.

**Analysis of Teacher’s Pet**

The memory of my cousin explaining to me that Mrs. Grant chose to ignore her students in favor of teaching the rest of us is an example of how a teacher’s lack of empowerment can contribute to the strain of owning an empowered teacher identity. I can finally sympathize with Mrs. Grant, even though at the time I lived this experience with her as her student, I had no idea that this phenomena was occurring. As a student in Mrs. Grant’s class, my navigational capital (“I continued to do well despite my surroundings…”) acted in a way that came at the expense of my surroundings, and also as a result of the culture of the classroom. My ability to succeed in this environment was perhaps because Mrs. Grant (my social capital) eliminated the obstacle standing in the way of my success by helping me to ignore it. So much so, this memory was almost completely disregarded if not for my cousin reminding me. I then, as a teacher, repeated this oppression on my own students through privileging the students in my classroom that chose to respect my role as their teacher, and learn despite the classroom culture I helped to create. Admitting a lack of empowerment because of my actions is one of the hardest, but most rewarding, realities that I had to admit. The identities associated with growth through lived experienc-
es, and taking into consideration that I am not one-dimensional, doing all things right at all times, and always achieving success despite my failures, has allowed me to delve into the multidimensionality of my identity. Having access to objectified capital (Magnet program and Advanced Placement classes) was not enough to succeed because the society and culture around me did not always forge an opportunity for success ("sometimes fights would break out...I also remember a terrible fight that started in the school cafeteria...ended...with a blood trail up the stairs and down the hallway"). A combination of cultural capital contributed to my successes both as an evolving mathematician and as a mathematics educator.

Naming the cultural capital that contributed to my success was easy, as all were indicators of the positive connotations associated with Bourdieu’s (1986) theory of cultural capital. Having the ability to utilize the other tenets of cultural capital, proposed by Yosso (2005), allowed me to include a more in-depth analysis of the multidimensionality of identities that lead to success, without having to background the obstacles encountered through the experiences. The ability to be reflexive through autoethnography allowed me to use cultural capital as a framework to name the identity characteristics that marked my growth as a teacher.

My First Teaching Experience

When I was a high school student my father had made me tutor one of my sisters and it was a very bad experience. She was irritated whenever my dad made us sit together at the kitchen table, and I had to walk her through each step of her mathematics homework. My dad would walk through the kitchen, and repeatedly say, “Ain’t no need of you lookin’ like that...if ya sistuh can help ya, let her help ya. You gotta pass that class, and she knows all that stuff.” I felt proud
to help and I liked the fact that I was able to do “advanced” work. My dad made me get ac-
quainted with her teacher, and I thought that the teacher was very nice, but she did not think so. 
I talked with the teacher a lot, and my father also made me attend tutorials with the teacher so 
that I could be sure to give my sibling the help they needed when we were at home. I helped get 
my sister through that class, and that was the first teaching experience I had.

My sister was the most resistant student I have ever had. She had very clearly stated her 
dislike of mathematics, like many of my current students, and she struggled with associating re-
lated concepts. I remember having to say repeatedly, “remember, just like we did before...it’s 
the same thing, remember?” I lived with this person, we saw this material everyday, and she still 
sometimes had issues with mastery. My approach then, was to keep doing problems over and 
over...reifying that practice was the only way that we would get an understanding to occur. We 
sat hours, some nights, just doing problems together. I would do them for fun, and watch my sis-
ter do them, and I would get my big Crayola marker and grade her work as though I were a real 
teacher. I loved giving good grades on the papers, and I would write, “Excellent” or “Very 
Good” at the tops of the papers.

I realized these were common practices that had been done for me when I was the stu-
dent, and they made me feel good about the work that I was doing. I also figured I would mimic 
the practices of teachers I liked with my own student (my sister) at the time, and I realize now 
that those things have certainly stuck with me as an educator today. I love rewarding good 
work, and I make sure my students know how much I appreciate their efforts.
After My First Teaching Experience

Its funny the things you have a vivid memory of, and others you can barely recall. I know that my first year of teaching high school was difficult, but not for the reasons one might expect. My first year teaching was spent learning the ropes, but if I had to give my experience a rating, on a scale of 1 to 10, with 10 being the best, I think I would give it a 20! No, my experiences were not just that great…they were just that real. Call me a glutton for punishment, but “I wouldn’t take nothing for my journey.”

My alternative teaching certification preparation was absolutely nothing compared to the real life experiences of the classroom. There was never a day that I walked into class and said, “Ok, let me look at my script, and walk my students through this day as documented.” School, especially high school, is filled with surprises. One of the reasons I absolutely love my job is because there is never a dull moment. While some memories are not as vivid as others, and there are most days that I cannot recall at all, there are some memories of things that help me to frame what being a teacher was initially like. I do not remember the first day of school, or what I wore, or how I first addressed my students, but the whole experience lives with me today.

I do remember that I was a floating teacher (there were not enough classrooms in my school to accommodate the amount of staff, so when other teachers in my department planned, I held my classes in their classrooms). I liked that set-up because on most days, I was not in the classroom by myself. I always felt like I had support, even if the teacher that was planning was paying no attention to what we were doing. I also remember teaching 6 classes per day, rather than the 3 that I now teach being on block schedule. I liked the old schedule because I got a
chance to teach my kids all year long, and the class time went by so fast that the days just seemed to fly by. There was no time to get bored, and I felt like I could get my kids to do so much in a small amount of time.

I remember as a new teacher, coming right out of college, I was 21 years old, and there was a twenty-year-old student on my roll! The class was geometry, and I was extremely surprised that his birth year was so close to mine. I remember the faculty was larger than it is now, and I remember a lot of faces, even if I have forgotten their names. They were extremely helpful, and I could ask anybody in the building for assistance and receive it with a welcomed smile.

I remember certain teaching moments, like when I got my students to learn how to factor quadratic polynomials. I also remember having a student that wore a tracking device on her ankle because she was a run-a-way. I remember having the star of the basketball team in my classroom, and he would sleep often when his sport was in season. We left him alone for the most part, but on one of the days he slept, my principal came in to observe me! He mentioned in my evaluation that I did not prompt the student that slept, and gave me an “NI” (needs improvement) for classroom management. I promised the principal I would be more efficient about correcting those behaviors, and upon my second evaluation, my principal came in and ended up falling asleep himself. I had my students quietly stand up, write him an evaluation of “NI”, and we stacked them on his desk. We all made loud noise to jar him awake, and when he read what we had written him as an evaluation, he laughed so hard! I had the best first year teaching!

There were times, though, that I was challenged. Some of my parents first concern was that I was new and young, and had never taught before. I remember not having many grades
posted in the online grade book because I floated all day into other people’s classrooms and did not have time to record the grades in the system; however, I carried a grade book that I kept up-to-date. I also remember having a student in one of my classes threaten to come to my house and harm me. He was an angry young man, and he would get really close to me and whisper awful things. One day, he managed to get to class before anyone else, and when he entered, he turned the lights off in the classroom. I was not afraid (and I honestly do not know why, because as I am recalling this story, I am shivering at the thought of what bad things could have happened in that classroom if I could not defend myself). I remember that talk my principal and I had when he hired me, and how he asked if I could handle myself in the classroom, and I asserted, “Yes!” despite my not having previous experience. I still felt like there was nothing I could not handle.

I remember a student hitting my car in the school parking lot my first year teaching. I had just pulled into the parking lot and was positioned in the bus lane. There were buses behind me, and this white car in front of me had stopped suddenly. I noticed the reverse lights come on, and I thought, certainly this person is not about to back up on me, there is nowhere to go. Still, the driver backed right into me, and upon hitting me, all the doors of the car flew open, and young boys started running in all directions. In my head, I could not process what had happened. I was not hurt, but I was extremely angry! I remember seeing the young driver approach me, and I focused on his mouth, which I had read his lips saying, “I didn’t even hit you that hard.” I jumped out of my car and tackled the boy to the ground. There I was, pounding him with my fists, and on the curb were my principal and his two assistant principals…laughing hysterically.
and making their way over to me. I remember being pulled from the ground on top of this student, and my principal said, “Goddamn, I got to worry about the kids, not you!”

Still, my first year was just the greatest. I had the support of my administration and colleagues, and the students were receptive to the teaching, I knew the material very well to make large strides in the classroom, and I got good results! Everything was not perfect, but it worked, and well. Things made more sense back then, now that I think about it. We were not guessing about what we were teaching. The curriculum was clear, and the standards were solid. The expectations of the students were sound, and the administration worked well with the staff. I felt supported…I felt comfortable…I felt needed…I felt…like a teacher who made a difference.

**Analysis of My First Teaching Experience**

The incredible impact of familial capital (“my father had made me tutor one of my siblings…”) fed my teacher identity, and as a result, forged other cultural capital into fruition. For example, as a result of my father’s insistencies, “I felt proud to help…I helped get my sister through that class…my approach then, was to keep doing problems over and over [so that] she would get an understanding” (aspirational capital); “I liked the fact that I was able to do advanced work…they made me feel good about the work I was doing…I love rewarding good work, and I make sure my students know how much I appreciate their efforts” (embodied capital); “I …walk them through each step of their mathematics…I talked with the teacher a lot…I remember having to say repeatedly, ‘remember, just like we did before, it’s the same thing, remember’” (linguistic capital). Through what my father fostered, this was the first time I had ever recognized a teacher identity within me. I helped others understand mathematics, which I enjoyed do-
ing. I gave praise and encouragement by rewarding good work ("I would write ‘Excellent’ or ‘Very Good’ at the tops of papers..."), and I collaborated with others to have an understanding of how to teach better ("my dad made me get acquainted with my sister’s teacher"). I was reaffirming that what I was doing was making a difference. The speech, or linguistic capital, present in these memories allowed me to realize that I possessed a kind of “teacher talk.” I had developed a pedagogical style and approach to learning that could be adapted to the way that I currently approach my own students. When I developed and displayed my teacher identity, and talked like a teacher talks, and behaved like a teacher behaves, I lived my teacher identity. I wanted my students to do well, so I treated my students the same way my father made me treat my sister. My father aided in the transformation of “sibling identity” to “teacher identity” because he recognized the mathematics inside of me and pushed me to embrace it as an educator. Later on in life when I achieved the credentials to be called a teacher, institutionalized capital (teacher certification, college degrees), and my principal (social capital) gave me the chance to certify my teacher identity in the classroom at school. I finally felt empowered when everything worked together (support from administration, students receptive to teaching, large strides made within the classroom that got good results, curriculum was clear, standards were solid, expectations were sound). All of the cultural capital worked together to contribute to the whole teacher identity.

This story has fashioned further analysis of my identity as a teacher that are difficult to ascertain. Am I a teacher because I say I am? Am I a teacher because I can behave in ways a teacher behaves? Am I a teacher when I am certified by the institution as a teacher? The con-
stant changing of roles in the classroom suggest that I possess multiple identities, sometimes simultaneously. I may utilize different identities, all while preserving my teacher “self,” but these identities coexist with the plethora of other identities I possess as a teacher.

**He Tried It!**

*This first teaching experience has made me reflect on a situation I had with a former student. This young man, according to his parents, loved mathematics. However, I noticed that his grades never reflected that. In fact, the parents thought that I was the issue, and that I must be doing something to make him hate mathematics. Our meeting about this was potentially “heated”...The parents had accused me of doing and saying things that their son had come home and told them, but they never thought they needed to address any of them before. However, we were all assembled in the principal’s office for one of these “alleged” instances:*

*It happened coincidentally after I passed out letters for advanced placement (AP) classes, and this student did not receive one. I was told to do this by the counselor, who had based the notion of AP interests for this particular non-mathematics class on the scores of the student’s Criterion-Referenced Competency Test (CRCT) in social studies. The student reported to his parents that he overheard me saying that my students were dumb and stupid. The father came to address this issue with me, and the administration.*

*Before the meeting, the assistant principal shared with me an email that the mother had written about the incident. She stated that her son is not a liar, and that ever since he had my class, he hated mathematics. “It has to be something she’s doing,” it read. She stated that aligning with his recent story, this accusation must be true, and that when we met in her absence, she*
did not want me to run down everything he had not done in class, she merely wanted an apology, and for me to not target her son in the future because he was brave enough to report me.

I was so angry. I began to shake, and I felt my eyes starting to tear up. I could not believe the bold-faced lie that I was about to be forced to address in front of my principal, this parent, and this student. The parent NEVER attempted to talk to me before now. So, not only was this accusation blind-siding me, but this was also a situation where I had to address my accusers face-to-face!! I was not allowed to voice my side of the story or respond to the email the mother sent a day ahead, and I was being asked to defend myself without fairness. I walked into the office, greeted everyone with a smile, and sat down.

WAIT….I KNOW THIS MAN! I HAVE seen him before!! Here’s what happened:

It was one Friday, afterschool. The bell had rang to dismiss the students and I had just sat down to eat my lunch because earlier that day, a fight broke out in the commons and one of our school resource officers was knocked down. Since I had that period planning, I drove her to the occupational medicine facility to be checked out, and I had just got back from dealing with all that drama...Here then enters a parent, who finds me in another person’s classroom, who had no appointment, whose issue was about a graded assignment for his son. This man did not bring his son, nor did he bring the paper to this visit. I only gave him half of my attention because I was so tired from the day’s activity. I begged him, “Please sir, Will you make an appointment with me to discuss this issue later? I have just sat down to have my lunch, and I just got back into the building. I’m really not prepared to speak to you, but if you’d just...” he interrupted, “go ahead
and have your lunch, I didn’t mean to interrupt, but I will not keep you long.” UGH, I thought...But, ok.

He continued telling me that he thought the paper was graded unfairly. The paper had been given a 60/F, and he explained that every answer on the paper was correct. I felt like I couldn’t defend what I couldn’t see, so I asked him to retrieve the paper. He said, “That’s not important. (The son) told me you give 120 points for every assignment, so why did he get half credit?” I said, “It may have been because he didn’t show any work.” The father then questioned, “That wasn’t part of the directions on this assignment. It just said solve.” I said, “I can refer you to my syllabus, which I often quote with my students on how to prepare work properly. Showing work is bold and italicized in the syllabus, it is an important part of learning, and helps me to gauge their efforts when grading their assignments. A paper with answers only might indicate that he could have gotten the answers from anywhere. He has to show his work.” The father still challenged my grading decision, and told me the work I had given didn’t require any work to be shown. The problems were one-step equations, he said. Even he could look at it and know the answer. I responded, “I can’t grade what I can’t see. If I trusted that all my students knew what they were doing all the time, I wouldn’t have to grade any papers at all. The grade stands, and we can both let your son know the importance of submitting work properly.” The father left, thanking me for my time, but says coyly, “You won this round.” I did not understand that fully until now...I guess this was Round 2 (DING!)

I listened to the story being retold, and waited patiently until it was my turn to speak. The father then led the discussion saying much of what was in the mother’s email. It almost
seemed as if they had rehearsed their tactic at home. When my principal gave me the floor, I stated strongly, “There are many things that people COULD say about me. I am a lot of things…but a liar is not one of them. I did not say that, and I need to address (the student).” I then asked, “Where were you when I supposedly said this?” He responded, “Well, I didn’t hear you say it. (So and so) told me you said it.” I said, “So it is hear-say?” I did not wait for a response from the student when I began speaking again, “So, when I supposedly said you were dumb and stupid, what did you say to me? Because clearly you have never hesitated to say to me what was on your mind in the past...” He did not respond. He put his hands together as if he were praying, and placed them over his eyes and nose. I said, “...So why don’t we share with dad and (administrator) what kind of interaction you and I have had when it comes to communication. They both might find this beneficial, and it might put this meeting in perspective.”

He finally responded, “I think I’m too advanced for this class. And when you teach, you show all these different ways to do the same thing, and I get so bored! I think I’m smarter than everybody because everybody always asks me for the answers. I get this stuff! Then when you ask me to show you on the board, it’s pointless! I can tell you the answer from my desk, and when you say show it, the way I show it is wrong. I don’t have to sit there and listen to all those things you say to know what I’m doing, I get it the first time and I’m ready to move on.” In full “Matlock” mode I said, “So, what about your grade? If you know everything, why do you have an F?” The father turned his chair toward his son, and the administrator gasped, and said, “From the way you have articulated yourself today, I would not expect any bad report about grades. I trust that you ARE a great student...I am eager to hear what is going on.” I returned, “OH, he’s
brilliant. He could be an awesome math student, but he knows what the problem is...tell them!”

The student stated that he very rarely turned in assignments, he skipped a few homework assignments, and he hates my Reading Quizzes. He confessed that class had become difficult, and he hated not knowing what he thought he did. He said before, mathematics was easy, and I made them read which he never had to do. He said I taught them something new everyday, and moved on to the next thing in the same day. He said I never gave them a worksheet, or let them have a free day. He said all my tests had word problems, and I never just gave them the answers to questions they asked. He said I always answered a question with a question, and he said, “why can’t you just tell us instead of making us go find it for ourselves?! “So, you never heard me say what you told your parents I said, and now that we know this is the type of thing you’ve got going on in class, what do you have to say...we are all here now,” I said.

We sat there while the student vented his frustrations. The father’s emotions were clearly focused on his son, rather than me, and we ended that meeting by agreeing that he would put forth more effort, and be an active part of my class. I did not mention the lie anymore...I thought it in poor taste at that time, and no longer an issue. The student ended up crying, and the father comforted his son. The father’s last words to me were, “we would like you to keep us posted from here on out. Don’t let this prevent us from communicating because I think we both want the same thing for (his son).” I understood that his statement was not only a request for help, but also an erasure of the line in the sand. And I was ok.
After He Tried It!

I imagine that every teacher has had at least one parent conference that has gone terribly wrong. I speak with my colleagues sometimes about “crazy parents” and as a department chairperson, I have had to intercede on the behalf of my teachers in some conferences that have been quite eventful, to say the least. I think about my own interactions with parents that have come to visit me, and some of these interactions have been pleasant while others have been a nightmare. Sometimes, I have been threatened over the phone, and sometimes parents show up unannounced and try to catch me off guard. My interactions with parents have driven the way I view my future interactions, and honestly, parent contacts are what I have grown to like the least as a mathematics educator.

One instance involved a young man and his mother about a project. I had met with the father of this student before, and he was receptive of what I told him was going on with the student. The young man could do the work, but had a tendency to be lazy. He slept at times, and on the days that he missed instruction, he did poorly. When he was attentive, he did very well. He participated in class by going to the board, and raising his hand to respond orally, and generally, he was not in danger of failing as long as he stayed engaged. His father proved a pleasant experience, but oh, here comes mom.

She was rude from the beginning, and was going to tell me how my class should be run. She did not listen, and always spoke to me like a servant. I remember her visit was a result of the young man not turning in his project on time. She was insistent upon me taking it late, to which I had already addressed in the project rubric, and I forbade accepting late projects with no
exceptions. I could tell that he had not brought the project to school, because a few other students who did not turn the project in on time actually skipped my class (perhaps to finish), and brought me the project before the end of the day. I was used to that behavior...they would often wait until the last minute and spend the school day throwing something together to hand in. This child played it cool the whole day. When his mother showed up to my room the next day, after-school, with project in hand, I explained to her: This project is late. You did not phone me, or contact with me with any hardships of him completing the work. I did not receive a phone call with an emergency regarding it not being turned in on time. Even now, you are attempting to give me a project with no excuse. I will not accept it. This mother told me, “You WILL take this project!” I scoffed, and said again, “No ma’am, I will not.” She walked over to my desk, and began rifling through the projects that were lying there in a neat stack, and attempted to put his with the rest of them. I said, “Get your hands off my things!” She said, “You’re going to take this project honey, ain’t nobody scared of you!” I then picked up the phone and called the front office to have security paged to come to my classroom. The mother then snickered and said, “Oh, you scared now! I’m not gonna touch you, honey.” I told her, “Ma’am, security is being called to protect YOU from me.”

Before security arrived, the mother had taken her arm and completely raked my desk of all the projects. They had all fallen to the floor, and she was escorted out of the building, with an order to not return. She was not allowed back in the building thereafter...and as for the project, it remained on the floor while the others were picked up and graded. The young man never acted out, or showed that he was prompted by her response that day. He did not witness his mother’s
wrath, of which I was so happy. He passed my class, and despite that zero on his project, he remained polite, worked hard, and finished the semester strong. I saw her years after that experience stocking shelves at a Walmart in the neighborhood close to the school. She did not seem to remember me, but I thought twice about demolishing one of her recently stocked shelves. I did not do it…but I sure wanted to.

**Analysis of He Tried It**

This story brings the first noted instance of resistant capital, of which I had to combat discrimination in some way, shape, or form in order to challenge the existing situations. In the event of the student that lied to his parents, “I was not allowed to voice my side of the story or respond to the email the mother sent a day ahead, and I was being asked to defend myself without fairness,” as well as in the event of the irate parent who violated the policies of my classroom, my trust, and my space, I was not given the courtesy as a teacher to be respected. This lack of reciprocity warranted oppression by members of my culture, whom I thought were equal stakeholders in the education of our mutual students. My social capital (“the assistant principal shared with me an email that the mother had written about the incident”) helped to guard me in the anticipation of one of the uncomfortable encounters. I was able to prepare for this meeting, and use navigational capital (“I walked into the office, greeted everyone with a smile, and sat down...The father left, thanking me”) to resolve an otherwise tense situation. My care for these students was evident through my aspirational capital. For the young man who was not honest with his parents, I used this capital to create a window of opportunity for him to correct his report to his father, and to let him know that I still cared about him, and how he did in my class:
“Oh, he’s brilliant. He could be an awesome math student, but he knows what the problem is…tell them.”

**Mi primera profesora blanca**

*My junior year of high school was the first time that I had ever had a White teacher.*

High school was the first time there were ever any White teachers on the faculty at the school I attended (besides one PE teacher in elementary school that stayed only one year) and I managed to have both as instructors of my classes. I had Spanish from Mrs. Rotors. She was a lot of fun. She was older, but she didn’t look it, although she had very long gray hair. She was really engaging, and we did lots of projects in her class. I remember we spoke Spanish fluently in her class, she encouraged that, and she didn’t mind laughing with us when we said something in “Spanglish” for things that we couldn’t translate well enough to verbalize. She was also the Yearbook sponsor, which I worked on both junior and senior year. In that respect, she really loved us! Her yearbook staff were her “babies”…she told us…and we could go by her classroom and get snacks like “Lemon Oh’s” and play Boggle tournaments with her any time of day!

Mrs. Rotors was also the person who sold me on the university I ended up attending. She was an alumnus, and encouraged me to go on the college tour. If it weren’t for her, I would have never known of the college, and I would have never applied or even thought I qualified for admission. She spoke to me daily about how she loved it so much, and she thought I was just perfect for the school. She and I talked at length about it, and she told me where she lived while being a student there. She couldn’t wait for me to go when I told her I was accepted. She even threw a little party for all of her yearbook staff seniors that were college bound. She was just the
absolute best teacher I ever had...and I didn’t mind that she and I were different, because to me, we weren’t.

For mathematics, I had Dr. Barry. He was older, and he was very smart. He taught like a college professor in our AP Calculus class. He stood at the front of the class the entire time, and lectured from an overhead projector. At the end of his lecture his hands and shirt were covered in overhead marker ink. He seemed flustered easily, and my classmates would sometimes do and say things to get him off track. We delighted in those moments that someone might yell out, “Dr. Barry, I saw you at the club last night with your date! She was fine!” He would turn “beet red” and we would all laugh while he struggled to get us back on task. He was a brilliant mathematician, though, and I remember that I learned so much from him. He fostered my interests in mathematics, but I never had given any thought to teaching at all.

“An atmospheric scientist, working for NASA,” was my answer to anyone who asked me what I wanted to be when I grew up. Sounding almost rehearsed, that was my answer for many, many years, especially during my senior year which I remember having to say it a lot! I knew I wanted to intern at a local news station with the meteorologist that I saw on the six o’clock news for the summer leading up to my freshman year at in college, and I had already looked into it. I was very excited, and wanted to study weather patterns, barometric pressure, and perhaps track severe weather for the National Weather Service.

I finished high school third in my class. The top 3% of my class were 5 students...4 girls, 1 boy. We received our class rankings in the principal’s conference room, which I had never seen before, but I heard they had student evidentiary hearings in there for people that got into
trouble. That rank allowed me to be Salutatorian, third highest GPA, which was a 4.108. I spoke at commencement and played a clarinet solo (Celine Dion’s My Heart Will Go On from the movie Titanic).

After Mi primera profesora blanca

High school had proven to be a wonderful experience, but not one that truly prepared me for the next step. I constantly think of this when in the classroom with my own students. I feel like being in the top percent of my class gave a jaded view of how I ranked nationally. It neglected what other students were doing at other high schools in my community, in the state, and around the world. Nobody stressed to me that after high school I would be competing globally. I was always praised for the triumphs I received in the classrooms within the walls of my high school; which was in an urban neighborhood, with dilapidated conditions, second-rate textbooks, barely any technology.

When I teach my students, I constantly reinforce that what we do in our class is only a fraction of what is going on in the world. I remind my kids, time and time again, that there are other high school students in other parts of our district, doing more, getting exposed to more, trying harder, working harder, and competing for the same positions they are. I always say, so you got an A, now what? Are you better for it? How hard did you work to accomplish it? I always challenge the students who are grade driven, which happens to be most of my gifted/accelerated students. They crave validation. I want them to understand that sometimes the struggle is the mark of progress. I tell them stories of my struggle to put into perspective that even people they look up to, that they think are faultless, and who they admire for being “smart” sometimes fall
short of the expectations. However, I want them to acknowledge that I never stop learning. I love those moments when my students show me new ways of approaching mathematics problems, and do things that I never think of. They feel proud too! I never hesitate to tell them when I don’t know the answers to questions they have asked, as well.

I remember my first year teaching AP Calculus, I had come across a problem about position, velocity and acceleration. Of course I could cover the series of derivatives that modeled the answers for the motion of the particle in question, but the problem required that we model the motion and explain what the particle was doing. I called on a colleague who taught physical science and physics to help me complete that lesson. I encouraged them to always seek help, and that the course was to be a learning experience for all of us together. They appreciated those moments, and they allowed me to share with them my past fears and failures and how I learned to overcome deficits to make sure that I could be responsible for my own success.

**Analysis of Mi primera profesora blanca**

The social capital (Mrs. Rotors and Dr. Barry) present in this story seemed to be the most influential in my future as a mathematics educator. The support I received from Dr. Barry helped to validate my identity of mathematician, scholar and teacher. Mrs. Rotors helped position me academically and was the person responsible for my undergraduate experiences at the college I attended. She gave me an opportunity that I never knew existed by introducing me to colleges outside of the southeastern region of the United States; also of ones that were not historically Black colleges and universities (HBCUs), or ones that I could attend on band scholarship (which were all the kinds of schools that my high school friends seemed to be interested in). Not
only were the experiences with my White teachers different, and the way I interacted with them a new situation for me to navigate, for the first time my learning was validated by “others” in a positive way. This was something that I was not used to. They both had very different approaches to learning, and did not share any similar cultural experiences as mine outside of our dealings within the classroom. However, they convinced me by their efforts that I made a positive impression on them both. “I learned so much from [Dr. Barry]…he fostered my interests in advanced mathematics” (embodied capital); “Mrs. Rotors really loved us…she told us…and we could go by her classroom anytime…” (social capital). I finished senior year with objectified and institutionalized capital, of which Dr. Barry and Mrs. Rotors had participated in validating my efforts in their classes (“Yearbook; AP Calculus; Salutatorian with the third highest GPA…I spoke at commencement and played a clarinet solo…”).

The struggles associated with knowing my identities through the social capital present in this story has uncovered a more severe need to determine what it means to me to be privileged by “others.” Specifically, what does the privilege my White teachers bestowed on me do to my Black experience? Until I reflected on my experiences, I never knew the impact this question had on who I am. I am appreciative of the help I was given, and I have certainly attained reward by their influence. In some ways, their assistance has helped to shape who I am, and have directly influenced how I have been able to ascribe to identities through this autoethnography. In sum, I needed the interaction of social capital in different ways to help create identities that continue to contribute to who, and what, I am. Moreover, the way I see my social capital, all raced, gendered, and classed inclusively, as it relates to the intersections of my identities has been influen-
tial to how I see myself as an African American, female educator. My multiple selves would not exist without my experiences with multiple others.

Ivory Towers

When I entered the elite, private university in the fall of 1998, my assigned advisor was an art teacher and sculptor. He instructed that since I had already known what I wanted to do, I should take Physics and Atmospheric Science my first semester. I foolishly thought that was a great idea! I definitely did not want to keep NASA waiting by wasting a lot of time, so, along with psychology, philosophy, English/writing and calculus, I registered for physics and Atmospheric Science. I carried a total of 18 hours my first semester and attended class daily, and on time.

On the first day of class in Atmospheric Science, the professor asked us all why the sky was blue. He took responses in a systematic pattern around the room, which was on the highest floor in the mathematics and sciences building on the corner-edge of campus. Once I noticed that he was coming straight for me for a response, I panicked. I tried listening to the previous responses to see if I could devise something intellectually sound, even though I had no clue as to what was I was going to say. I did not want to repeat someone else’s answer, and since he continued to ask, whatever people had already said must not have been the answer he was looking for. There were some very interesting things being said, and as I listened, I started to question whether I even measured up intellectually with my present counterparts. I remember one young man said, “The sky is blue because of small particles of water floating around in the air and in the atmosphere. The sun refracts light off of these particles. Since the human eye sees patterns
of light in spectrums, we process this refraction by seeing multiple colors at once. The dominant color of the refraction in our eye is blue, which is why it appears this way in daylight. Of course, if we consider the clusters of clouds and their density, the spectrum is dulled to a grayish color.”

I was terrified. After some other responses, the professor, who resembled a younger Colonel Sanders from the side of a Kentucky Fried Chicken bucket, looked straight at me and said, “What are your thoughts on this phenomenon?” I replied, “The sky is blue because God made it that way.” Inside I was proud. I could hear my father, a Baptist church deacon at the time reaffirming this notion, and my mother, a daughter of a minister shouting “amen” in my corner, but the looks on all of the faces in the lecture hall were stabbing. Not only did I become livid of my response, but also at that moment I realized that I was the only African American student in that class (and probably the only person that gave God the credit he deserved).

I felt like the jig was up, and that they would definitely know that it was a mistake to have accepted me into the university. So, to combat my fear and anger of not knowing what the other students did, I did not drop the course. I returned to class everyday, sat in the front row, and slept soundly. I never attempted to go to any of the assigned labs in the observatory, as it was away from campus, and the professor suggested that we negotiate rides with peers to get there. I mean, who would want to give a lift to the Black girl who said God was the reason for everything beautiful in our world? I felt their disdain, whether real or made up, and I isolated myself. I asked the professor what missing these labs would do to my grade, and he went over the syllabus with me. We determined that if I aced every other aspect of the course, I could still finish with a
C average. Well, I did just that. I graciously accepted that C in Atmospheric Science, because Physics was going terribly.

I remember receiving my first physics test and wondering, “am I in the right room today?” Everything looked foreign. I knew I had not missed any classes and yet, the questions on that test read as though I was being asked to split an atom....literally! I failed Physics entirely. Every grade back was an F. I begged my dad to let me come home, and he refuted my every plea. Nothing worth having comes easily, he would say. And sometimes, strong C’s are better than easy A’s any day. Your mother and I are proud of you for even being there, no matter what. Keep trying, keep studying, stay focused. It’ll pay off. I studied extremely hard, harder even than I did in high school when I made straight A’s all the time, and I seemed to get C’s and barely B’s often. I persisted, and I got through that semester without being on academic probation. Strangely enough, my grade point average at the end of the two-semester freshman year was the highest of my entire time at the university.

After Ivory Towers

I remember hitting the ground running when I started college. I did not know what “pace yourself,” meant, and I was used to taking six classes in high school every semester anyway, so why not get a full schedule? I was really excited and confident about my preparation, until the first day of class. I sat and listened to the professors go through their syllabi, and I noticed there were only two tests in most courses, or one major project. There was no homework, or no daily work, so how would the professor know how I was doing? I was so unprepared! I remember getting the reading list for my English/Literature class and hearing the other students say, “Good
thing I’ve already read these texts before, this will be a breeze.” I did not find one familiar book on the list at all!

Despite this reality check, I felt most comfortable in my Calculus class. Dr. Barry had really prepared me well and I used that as self-motivation to excel in mathematics. I looked forward to going to that class, and it never dawned upon me that I should have set out to make that my major instead of Physics, which I loathed! As I reflect, I blame my advisor…but then, he only advised me according to what information I had given him. He really did not know me enough to help me make that kind of decision, and I feel like I wasted a whole semester getting acquainted with the college curriculum.

Since my school was based in the liberal arts, there was no way of getting around a full-bodied learning experience. Some of the courses I selected were some that were one from a list of many options, and my selections were truly not always the best. I think that if I were more socially connected, I could have had a better experience. I also wish that I had been more outgoing during my freshman year. I remember going to class, and coming back to my room to study. I never joined any campus groups, or belonged to any academic organizations. These are the things that Mrs. Rotors had told me she loved. I just didn’t find my place in those things.

I danced on the dance line for the marching band. I loved to dance, and I got a monetary stipend at the end of each season. I went on to pledge a sorority, and that was truly one of the highlights of being an undergraduate. Still, I think I missed my academic niche. I remember reading things that other African American students were doing on campus, and I wondered, “Now, how do I get involved with that?” My social networks were different, and I eventually got
bogged down with finishing my degree on time. There wasn’t much time to socialize when I had to recoup the credits from failing Physics and Differential Equations.

As I am reflecting, I am wondering if I were not granted access to many of the organizations that might have afforded me greater opportunities by being, at the time, a science major. I now know that my failures caused me to miss out on chances to advance academically. Maybe had I entered doing mathematics, my experiences, as documented here, might be reported differently. If I knew I was going to teach, and entered the school for teaching, I wonder what stories I might tell…

**Analysis of Ivory Towers**

My previous efforts afforded me acceptance to an elite, private university (objectified capital), but the lack of effective social capital (freshman advisor) proved to be a hardship that my other cultural capital worked to remedy. Despite my being poorly advised, I had hopes of doing the most with the time that I had, so I took “psychology, philosophy, English/writing, calculus, Spanish, physics and atmospheric science” (aspirational capital) over the first two terms, concurrently. “I foolishly thought that was a great idea…I did not drop [any] courses…I persisted, and I got through [those] semesters without being placed on academic probation” (aspirational/navigational capital).

Even though my inability to be well connected socially caused me a hardship, my aspirational capital kept me from giving up. By refusing to perform at my potential in the Atmospheric class, I put myself in an isolated position where the benefits of social capital were not available. When motivating my own students, I use this experience as a platform to stress the importance of
establishing resources and forging relationships that contribute to academic success. I benefitted more from supportive spaces than relying on my own devices. I reclaimed empowerment as a teacher by relaying this lesson to my students, and by making sure that they can utilize me, as well as others, for full support in their academic development.

The experience at my university brings forth inquiry into whether everybody has cultural capital. Do all people possess the kind of cultural capital that facilitates success? Is the cultural capital people possess positive? Is it always helpful in the way he/she needs it to be, when they need it? This line of questioning begs more research. I do believe all people possess some kind of cultural capital, but deploy it in different ways through different experiences. As I continue to understand more about my own experiences, this study implies the need for more research of the cultural capital present in people with similar backgrounds and tastes, and who share the same cultural experiences.

The Little Engine That Could

At this same time, I took freshman psychology, and had similar tensions. I have written vividly about my experiences in this particular course in my work, “My Intimacy with Pedagogy of the Oppressed,” (Williams, 2010), where I recalled my first racially oppressive professor:

During undergraduate work, there was a course that was required of all freshmen for completion of any degree program. The class was very large and met in an auditorium-styled seating lecture hall. Psychology 101 was considered one of the basics, and it was unavoidable. There was only one professor that taught this course
first semester, a tenured member of the faculty, with a reputation for being really tough. On the first day of class, he began his lecture with a look at how the world really is. He pontificated about which race of people in the class were genetically inclined to do the best, and which ones would struggle, bordering failure. He pointed out who was more inclined to lead fruitful lives, and how many of us would not be at the university by the end of the semester. We heard of how some of our cultures forbade us to excel in certain aspects of life, and who those persons were that would ultimately be successful in whatever they endeavored, adding ever so often quotes and citations from literature which supported these notions. After grunts and sighs grew in the lecture hall, he maintained, “this is not my opinion, these are the facts.” He then began to read an American childhood classic book aloud, The Little Engine that Could, stressing to the class that the small engine was pressing on to deliver toys to the good little boys and girls. He then turned the text around to show the class that the children illustrated in reference were white, blonde-haired and blue-eyed. Many of the minority students left at this point, but I stayed. Fear of leaving and being perceived as oppositional kept me seated. In a setting of strangers, before any coursework commenced, I had thought, “Why was I left out of the
story?” Most importantly, though, I thought, “I am definitely going to fail this class.”

I went to every class, and studied especially hard. After the first exam, I made an appointment with the professor to discuss my grade. I was extremely nervous as I approached the closed door and knocked. His voice commanded that I enter, and I pushed open the door to find him outside on a small terrace, smoking a cigar. Before I uttered a word, he said, “Let me guess. You’re here about your exam.” My voice cracked, “yes,” as he motioned me to enter. He began with explaining how the first exam always identifies the students who are ill-prepared, and alluded to his first day of class lecture. I nodded in agreement, and then pulled the test from my black, mesh JanSport book bag to reveal a large, red “A” at the top. Looking stunned, he asked, “Well, what are you here for?” I replied, “I’m here to ask that you consider revising your lecture for the first day of class.”

After The Little Engine That Could

As I reflect on the lecture given that first day of class, having been on campus at the university for only a few days, I remember how utterly fearful I was at that very moment. Prior to taking the Psychology course I had excelled in an environment that deemed me “at risk,” and “underprivileged.” A product of an urban, lower-classed, minority upbringing, being schooled in centers where there were poor resources, dilapidated conditions, and second-rate educational opportunities, I had succeeded to become a part of an “elite” class of students at a nationally ranked university. Here I was, at an institution of higher learning that statistically reported a total of less than 3% minority students (non-White), being taught in a massive lecture hall on the first day of
class that my existence was doomed due to the very nature and forces of oppression. Not only having my utter existence compared to one’s interpretation of a children’s story book, but also having that professor ground his theory in supposed fact, reaffirming himself in the notion that certain minorities were fashioned to “run faster, jump higher, and be physically stronger.”

Unfortunately, after his response in my private meeting with him regarding the first test, as he constantly questioned my upbringing and what my parents had done for a living, I quickly knew that he had not intended to “transform the world,” (Freire, 2000, p. 88) but only to inflict his oppressive nature and assert his authority. The result was a sordid dehumanization; something that made me, and the other minority students, feel less than deserving to be amongst the Others. What I now understand of my feelings in that moment is unsettling because what this psychologist had successfully done was manipulate the minds of the students in a way that created a question of our own identities.

As I develop my own personal theory on certain issues of inequity in my mathematics classroom, I am constantly reminded of how I was made to feel in that Psychology class. At the most critical time in my academic development, having been met with the task of transitioning not only academically into a foreign world, but also being surrounded by others who looked and sounded different from me, I needed a sense of solidarity. My professor had obviously enacted the role of the oppressor, and refused us the necessary dialogue to create an effective learning environment. In response to the mutters of disagreement, he continuously used his own authoritarian, oppressive pedagogy and proved that he indeed “confused [his] authority of knowledge with
his...own professional authority, which ...he [had] set in opposition to the freedom of [his] stu-
dents” (p. 73).

Like the others, I would not stand up and walk away from this deliberate, classist oppres-
sion. The intersectionality of my race, gender, or economic status would not perpetuate "that cer-
tain groups in any society are privileged over others, constituting an oppression that is most force-
ful when subordinates accept their social status as natural, necessary or inevitable" (Crotty, 1998, 
p. 158). The apparent lack of subjected, oppressive cohesiveness was present in our shared cause, 
but I would not allow the professor to appropriate my freedom of creating dialogue with him 
about it. In the moment I stepped into his office, I not only possessed the liberating feeling of hav-
ing proved that his theory was wrong about me, but I also felt that despite his obvious acceptance 
of those presupposed notions, I had engaged him in the act of education! Even if he did not agree 
with my own personal, suggested pedagogical practice for his course in the future, I am inclined 
to believe that in that instance, I provided a lasting and life-changing perspective for my oppres-
sor.

Analysis of The Little Engine That Could

Despite the oppressive nature of the Psychology professor, I possessed aspirational capital 
(“I went to class, and studied especially hard”), institutionalized capital (“a large, red ‘A’ at the 
top [of my test]”), navigational capital (“Fear of leaving and being perceived as oppositional kept me seated”), objectified capital (Pedagogy of the Oppressed/My Intimacy with Pedagogy of the 
Oppressed), and resistant capital (“I’m here to ask that you consider revising your lecture for the 
first day of class”). My lack of social capital speaks volumes to the result of this story and how it
differs from previous documented instances of cultural capital. The way the professor approached the students in my class revealed that the manner by which teachers address their students has strong and lasting impressions on them. By allowing my own students to question and investigate their experiences in my classroom, I can empower them, thereby empowering me as well. Teaching for social justice is most important when meeting the needs of all learners, and knowing your students is very important. I am transformed from the existing structures of oppression by being reflexive about my teaching practices through autoethnography. Being able to name the cultural capital at play contributes to a positive and empowered teacher identity because I have the knowledge base to analyze my transformation from feeling oppressed to being once again empowered.

No…Wire…Hangers

I have similar recollections of isolated incidents in a mathematics class I took one semester. This course was taught by a graduate assistant (GA) because the associate professor was away in Germany serving on a board of scholars defining some ancient algorithm. The GA seemed to have an affinity to recognize me daily. It is my guess that although I was the only African American female in the class, he did not want me to feel isolated. I remember he spoke to me with a smile, asked how I was doing, if he could be of any assistance, and that I could always call him if I needed help. He then remarked on my handwriting and how detailed my notes were for class. He admired that I was the only person he had ever seen take notes on graph paper, whose handwriting was in all caps. He inspected my papers... ”You’ve captured everything! And so neat!” He suggested that I go by the student resource office and consider
selling my notes for class for extra income. He kept suggesting, “You could really clean up by doing that. Get extra money to help with your regular expenses. These are great.”

My roommate freshman year must have thought I needed some financial help, too. She was the daughter of a hospital owner, and her mother was the head resident nurse. My roommate was one of few people I knew attending college and paying tuition out-of-pocket. She was a beautiful girl, a Barbizon model, and had blonde hair and blue eyes. She had been my second white friend ever; my first being a girl that I had never met face-to-face at the time, who lived in Milwaukee, Wisconsin. She was the pen pal that I had continued to write from seventh grade from a program called “The Great Mail Race.” My roommate had more noble intentions, she was very nice and offered me everything she had. I remember when we moved in, we sorted out who had what for the room so that we wouldn’t double-up on appliances. She had come so far that she didn’t have anything essentially, so whatever she needed her parents bought near the school. I had brought my television and microwave. I had a desktop computer and, of course, my clothes. She felt bad that I had everything, so her parents bought carpet for our room, and bed risers (wooden lifts that created space underneath our beds for extra storage). I remember when I began putting my clothes away in my closet, she remarked, “Are those wire hangers?” I said, “yeah, why?” She sort of scoffed and smirked a little, but dropped the subject quickly.

I could tell that she was a little uncomfortable of my presence and struggled to bond with me at first. I remember one day coming in from class and finding her blasting music from her Napster playlist. She quickly turned her music down, and begged my pardon, saying, “I can turn this off, I’ve got Tupac too.” Feeling a little underwhelmed, I told her, “I’m not a Tupac
fan...however I love Linkin Park” (the only White band I knew, don’t ask me to name any of their songs though, but it served it’s purpose in dispelling the myth for her).

She was a vegetarian, and I remember one day I came in and she had company. Her boyfriend at the time was visiting, and when I opened the door she was excited to introduce us. He was from Utah, and wore a burgundy cap and jeans. I said, “hey,” and sat on my bed. I had brought my lunch back to the room to eat. I had gotten a chili-burger from the student center (beef hamburger patty and chili on the bun). My roommate started to repulse and her boyfriend laughed. He said, “Hell yeah, Candace! That’s what I’m talking about. She doesn’t know good eating when she sees it.” He came over and sat with me on my bed, which in my culture is way too personal. I did not make any stink about it, and welcomed his presence. We talked and laughed, and all became acquainted quite well.

I walked over to my closet to hang up my jacket, and when I slid open the door, her boyfriend said, “Hell. NO!” I jumped back and said, “WHAT?!” He said, “Wire hangers?! Seriously? You’ve got to do something about that shit…look at this!” He pulled a pair of jeans from my closet that I had hanging up, and the weight of the jeans made the hanger sag in the middle...actually, I had noticed, all of my pants made my wire hangers sag. I had a few shirts hanging that had slid half way off the hangers as well. Was that what she meant when we moved in? The next day, I returned to my room, pulled my books from my bag, and sat them at my desk. I walked over to the closet, slid it open, and there were all of my clothes, hung with brand new wooden hangers. That was the first time I had felt poor. Economically disadvantaged by wire hangers. Maybe I should sell those Calculus notes after all.
After No…Wire…Hangers

Despite these few instances, I felt like my presence there was intentional. If not for some divine work through God, to help me to become the woman I am today, facing an occasional struggle with combating inferiority, or intersectionality, or being made to work hard and smart toward my goals despite the obstacles, having to combat feelings of being economically disadvantaged, or having experiences that helped to shape who I was, and yet becoming, and how rewarding those experiences were. I enjoyed my college years.

Fast forward, two F’s later (Physics, and Differential Equations), I had studied two languages, learned how to program music into computer animation, composed an original lyric with a guy for his songwriting class, and studied film. After four years of having the time of my life, I, the only African American female in 2002 to receive a Bachelor of Arts degree in Mathematics, graduated from college. I wasn’t in the top percentages of the class. I was not a banner guard (top students in each college got a chance to carry the banner for their respective schools within the university). I did not wear any defining regalia, except a Kente print stole (representing the Black Student Association), and a stole for my sorority. I did not have any medals, cords, or collars. I wasn’t first…but I also wasn’t last! My dad would joke, “You didn’t make it magna cum laude, or summa cum laude…you made it thank-you-laude!”

Analysis of No…Wire…Hangers

Before the exchange with my college roommate, my cultural experiences had never presented me feeling inadequate, poor, or “less than” my peers. When I was enveloped in this new culture, where things that were normal to me were now noticeably unacceptable, I felt weak and
embarrassed. I combated these feelings by embracing my social capital (my roommate and her boyfriend), even though they had been the source of some discrimination and oppression, and I created a working relationship with them. In fact, I had grown to really care for them both, and continued to want the best for them when we were no longer living together. The navigational capital I enacted (“I’m not a Tupac fan, however I love Linkin Park”) served as a form of “code-switching” where I was able to also portray resistant capital in that moment. My objectified capital (“I had brought my television and microwave…I had a desktop computer…”) made me feel less financially poor in relation to her because at least I could share a common student culture relationship with her (we had things in our room that other students had to make living in a dorm room more comfortable; of which most I had brought myself).

My linguistic capital (“…my handwriting and how detailed my notes were for class…he admired that I was the only person he had seen take notes on graph paper and write in all caps”) that the graduate assistant admired helped me to feel less inadequate in class. Even if his intentions were those of pity, I could celebrate the idea that made me stand out (and perhaps not just by being female, and African American). The ability to to take a bad situation and turn it into something good speaks to the resilient identity I possessed. Although there are no marked instances of resistant capital in this story, the actions I took to make my situation better showed my ability to transform a potentially poor relationship into a cultural enmeshment of sensitivity to the understanding of others.
A Time of Transition

Coming back home was exciting until my father sat me down at the kitchen table my second week there and explained that once I turned 22 years old (in about three months), I would be dropped from the family’s insurance policy. He iterated that I was not being hurried to leave, but that I needed to put myself in a position to where I could “grow.” I later found out that was a nice way of saying, “You can’t stay here, your mama has plans of converting your room into a closet.” So, I was on the fast track to find a job, and a place of my own. I looked at my degree, and started to ask myself what I could do with that. I had not put any real thought into it since I had applied for a position with Teach for America. I was denied, and did not have a plan B. I asked one of my siblings what they thought I should do, and was told, “Well, when you were little, and you first wore those glasses, we always said you looked like a schoolteacher.” My grandmother was a 30+ year retired educator, and my Godfather, a former high school mathematics and science teacher, as well. I thought, well, it couldn’t hurt. My search started late July, and I looked into schools that were hiring in the metro-Atlanta areas.

I knew I did not want to teach elementary school because I have a really big phobia of small children. I started alphabetically with high schools in the area, and went down the list, making phone calls to individual school sites. The only two schools hiring at the time were in one area that I knew was one of the top paid counties in the surrounding area. I had set up meetings at both schools to talk to the principals for a Monday morning, and thought, well, either they can take me or not. By Friday of that same week, I had grown accustomed to sleeping late, going all day in my pajamas, and watching television. I received a call around noon from a
principal who asked, “How soon can you get here?” I said, “Give me thirty minutes.” I scurried to shower and change into a suit, pulled my hair up into a bun, and rushed out to the school site to meet my future boss.

When he first laid eyes on me, he said, “How old are you? You look like a baby. Can you control a classroom of students?” Of course I replied yes, although I did not have any teaching background, had never taught students in a classroom setting, or even considered it before my dad’s insurance speech, and the only person I had seriously tutored, besides forcibly my sibling, was a guy in college on the football team whom I wanted to date. Once he looked over my qualifications, I was hired on the spot. He asked that I come in the following week for pre-planning, and the rest is twelve-year history.

After A Time of Transition

When I told my parents that I had been hired to teach high school mathematics, they were very excited. My mother cried, and my father gave me a Bible verse on how teachers were ordained by God. He told me that I had a calling on my life as a teacher, and I could see how happy he was of me. I took a serious look at the next journey of my life. Now that I had accepted my calling, what would I do to prepare? I never taught school before! I did not know the first thing about lesson plans, classroom management, how to engage my students, or anything! With all this swarming around in my head, I thought, I have got to get some help!

There were two things that I had always claimed to know, unequivocally; mathematics and dance. I had done those two things all my life, and had been rewarded for an exceptional job in both. It was a fact that I knew the content, and I did not question whether I could teach it. I
knew I could do this! I had come from essentially nothing, and made it to receiving a degree. A little black girl, from the city, who had never been further than the southeast region of the world, went to college and was the only African American to receive a mathematics degree the year I graduated. I was the only African American female in my mathematics classes. I sat in study halls, and took classes and learned mathematics that others were sorely afraid to even endeavor.

I took a final exam for nine hours, just to prove to my professor that I would not give up trying to factor a $15^{th}$ degree polynomial. I failed Differential Equations, and took it again the next semester to prove to the professor I had that I will not fail. I got an A, and thought, “nothing is impossible!” I had walked across that stage, and stared upset in the face when Teach For America said I was not qualified to teach in an urban school district for them. NO, I would do it for myself! I will be a mathematics educator, and I will show anybody who doubts that I can, and I will! I was so motivated by this profession that I had not even claimed until I was hired. I was suddenly empowered by the possibility of the work that I would be doing. I knew I wouldn’t waste any time jumping in with both feet, and I don’t think it was by accident that things unfolded the way they did. I was merely meant to teach, and I will continue to enjoy my students for as long as they will have me.

**Analysis of A Time of Transition**

My cultural capital is a favorable contribution to my professional identity. I have found through investigating my identity that the precursors to mathematics education were already embedded in me long before I made the decision to work as a classroom teacher. My familial capital (“My grandmother was a 30+ year retired educator, and my Godfather, a former high school
mathematics and science teacher, as well”), institutionalized capital (bachelor degree in mathematics), and aspirational capital (“I had set up meetings at both schools to talk to principals for a Monday morning, and thought, ‘well, either they can take me or not’”) only served to reify the fact that my career choice was a good one. The social capital available in the hiring process (the principal of my school at the time) helped me to embrace the idea of teaching (“Can you control a classroom of students?”…I replied “Yes!”), and he continued to be a source of support throughout his tenure.

**Back to School…Again**

*I received my teaching certification while on the job through the Georgia Teacher Alternative Preparation Program (GaTAPP). I exempted the Praxis I test by having good SAT scores, and passed the Praxis II in two attempts. After certification, I started another certification program for teaching gifted students, and undertook advanced placement workshops to be qualified to teach both AP Statistics and AP Calculus AB. I took 5 years before enrolling in graduate school, which brought me to Georgia State University. A close friend of mine was finishing her last semester of a Master’s Program as I began my first in the College of Education for secondary mathematics. I never would have made it without her.*

*I remember how fearful I was about school again. It had been so long since I was a student, and all the feelings I had when I started undergraduate studies came back. I recall sitting in the library in tears trying to write a SAS program for statistics. It was the kind of program you run, and if you were successful, you got nice friendly green prompts, and graphs popped up in the left side of the screen. I never took a programming class, and the manual for SAS read*
like that manual of the undead in that movie “Beetlejuice.” When I ran mine, every command I had typed turned red, and nothing popped up at all!

I thought, “I must be really crazy!” However, with a friend’s help, a spirit of resilience, and remembering how important it was to me to do well, fear quickly became confidence, and I got excited about learning. I met and established friendships, and those friends became my scholar sisters, some of whom share this research experience with me. We have learned together, we write together, we meet at the local pub for drinks to relax and vent, and this journey has been one of enlightenment.

I never felt like I could do school for fun. It was always an expectation in my home, to me personally, and what I thought I was supposed to do. Good grades were expected, a good job and future was expected, and I did not want to get into trouble with my folks or cause any embarrassment to my family for doing anything otherwise. There is always more to learn, despite being finished with one lesson of life. You should always transition into the next chapter, using your previous knowledge, to allow yourself to grow and learn ever more than before. I am enjoying my graduate studies, and most importantly, my research interests. I have been given a platform to declare my successes and celebrate my failures as learning experiences and use them in a scholarly way. I will continue to learn and gain knowledge from my experiences, some great, some terrible, but all worthwhile. My family motivates me to continue in the pursuits of scholarship, and I am constantly reminded of this, when I read, write, and study.
After Back to School…Again

Here I am at the conclusion of a doctorate program. I never knew my life would take this turn, and I would become so enmeshed in my profession. As surprised as I was to accept teaching as my calling, I was equally as shocked that I would take on an advanced graduate degree…and write a study about my development in mathematics education. Still, I am so fortunate that I have had these experiences, and moreover, the platform to share these stories to potentially impact the research done in the field. My graduate studies have been so rewarding. To work alongside some of the most influential scholars in mathematics education and education policy, and to have the opportunity to study under them and learn from them what I might have never questioned of my pedagogical practice has been truly a blessing.

The experiences that I have had in graduate school reify the fact that in order to be a good educator, you can never stop learning. I said in my teaching philosophy, about six years ago: The most important belief about education that I know to be true is the way a teacher behaves in the classroom is a direct reflection of beliefs they hold about the learner, about education, and about society. What I do appreciate though, is that I am in a position as an educator, and a researcher, to be reflective and reflexive about my practice in order to continue to develop more ways to construct my thoughts and actions, and perhaps get a firmer grasp on my future in mathematics education. There are many approaches to teaching and learning, and we should arm ourselves with as much knowledge about our profession in order to be useful to our students.

I think this philosophy still rings true today. Being able to discover some of these ideas at Georgia State has proved to be the most rewarding and transferable experience that I have had
professionally. The instances of cultural capital that saw me through this journey are evident throughout this culmination of how I have evolved into the person I am today. I am reminded daily of the importance of embracing an identity that I am pleased with in order to empower my students, and for them to empower me in a cyclical way. My successes are theirs, and it is my recognition of the cultural capital that informs my multiple identities that speak to these successes continuously.

Analysis of Back to School…Again

My aspirational capital (“a spirit of resilience, and remembering how important it was to me to do well”) aided in my continued motivation to maintain a positive attitude about my profession. My embodied capital (“I got excited about learning…I am enjoying graduate studies, and most importantly, my research interests…I will continue to learn and gain knowledge from my experiences, some great, some terrible, but all worthwhile”) has taught me to embrace learning and allow it to transform me. Familial capital (“I never felt like I could do school for fun, but it was always an expectation in my home, to me personally, and what I thought I was supposed to do…Good grades were expected, a good job and future was expected, and I did not want to get into trouble with my [parents] or cause any embarrassment to my family for doing anything otherwise…My family motivates me to continue in the pursuits of scholarship”) keeps me motivated to succeed beyond expectations. Institutionalized capital (“I received my teaching certification”) reminds me that I have a strong charge to keep, and I am ethically bounded to the students in my classes to do a good job. Social capital (“A close friend of mine…I never would have made it without her…with a friend’s help…I met and established friendships, and those friend became
my scholar sisters, some of whom I share this research experience with…WE have learned together, we write together, we meet at the local pub for drinks to relax and vent…” keeps me focused on why this journey is so important, and how special I am to have people close to me who understand the demands and struggles of teaching as a profession.

6 DISCUSSION

When I first embarked on this journey of finding what it is that binds me to teaching as a profession, I was in an identity moratorium. I felt like I was not empowered, documenting major changes in the structure of my school, and other administrative constraints that affected my position in mathematics education. I felt like I had no control over these structures, but I made a decree that I would investigate what factors existed within finding a voice in how I construct myself as a mathematics educator. I theorized that knowing myself might uncover more specific ways that I might combat this feeling of powerlessness. My own questions regarding who I was years ago, along with who I am constantly becoming, towards reclaiming an empowered mathematics educator status, fueled my journey to truly come to know myself. Through this study, I have found out more about myself than I even knew existed. My identities originated in my daily work as a mathematics teacher where my past experiences in mathematics and my future goals in terms of mathematics teaching and learning influence who I am, constantly (Hodges and Cady, 2006).

My personal stories were born out of wanting to know more about myself as a mathematics educator in hopes that this discernment would affect my teaching practice. My work allowed me to explore and understand how my storytelling aided in the process of constructing my profes-
sional identities. I have appreciated what autoethnography has allowed me to do with critical re-
flexivity. I am proud of myself for engaging and sustaining autoethnography in a way that has
allowed me to undertake the difficult and vulnerable journey of self-discovery. Sharing my sto-
ries, and being transparent, was most difficult but by bearing myself, I have been able to address
and ameliorate some of the anxieties associated with the duties of being an educator.

My identities were associated to understanding myself when I articulated to myself and to
others my perceptions of myself (Holland, et al., 1998). I kept this in mind while drafting my
personal stories, and used this as a gauge of where my identities exist. My stories revealed that
my teacher identities exist in and are developed through my professional practice. They are not
static, stable or coherent, they change over time, and they exist as both representations and as
ways of acting. My teacher identities emanate from multiple lived experiences, and are shaped by
my interactions and professional practices. When my roles changed, by identities changed. This
chapter presents a comprehensive summary of the study and the findings drawn from the data pre-
 sented in Chapter 5. I include an overview of the research problem, the research questions, and
the research methodology. At the conclusion of this chapter, I provide a discussion of the find-
ings as they relate to my theoretical framework and the literature I have reviewed, and also impli-
cations and recommendations for future researchers.

Summary of the Study

Overview of the Problem

According to Sachs (2001) “it is in the best interests of government for teaching not to be
seen as a profession as it gives greater opportunity for regulative control of the profession” (p.
Thus, it is advantageous for teachers to be passive “conduits for the curricular decisions of textbook writers and disciplinary professionals” instead of active educators that “have the requisite skills to create or critique that knowledge” (Girod & Pardales, 2001, p. 8). Sachs describes this positioning as an effort to deskill educators, making them low-priced puppets instead of highly skilled professionals (p. 149). If this is the case, teachers do not have to “do research to find out what good teaching is when the government is telling [them] what it is” (Brown, Jones, & Bibby, 2004, p. 175). The authority invests in professional development to demonstrate the practices of the good teacher knowing that “if teachers endeavor to be ‘good teachers’ following the curriculum, and if schools improve themselves, then the [governing authority] absolves itself from blame for those who still fail within the system” (Cotton, 2004, p. 227).

Is this who I am? Is my profession so disparaged that I am condemned to blindly follow the protocols of those who do not hold my best interests at heart? What will I do to invoke change, and how will I emancipate myself and reaffirm the status of empowered educator that I once held when I began teaching? Who am I? Instead of accepting the stigma proposed by government, I will not cooperate within the systemic disorder, but be called upon to collaborate with them. In order to be effective, I must transcend the identity of educated person from being a teacher practitioner to one of being an empowered educator. These ideas have led to this critical examination of my multiple identities: who I am presently as an African American, female, mathematics educator. The interplay of these shifting identities contributed to an identity moratorium; what/which part of me propels my continuance and success in such a marginalized field
of work? How do I situate myself? How do I continue to strive for success by being an asset to my students, school, district, and the field of mathematics education?

The purpose of this study, consequently, was to examine teacher identity in the mathematics classroom from a personal point-of-view, and document how I, as an alternatively prepared, competent mathematics teacher, saw myself and how I used a combination of educational resources, skills, intellect, and practice to gain classroom success.

Research Questions

The research questions that guided this study are:

1. How do I, a female African American mathematics educator, use autoethnography as a reflexive process to investigate cultural capital?

2. How does this reflexive process contribute to my evolving identities?

Review of the Methodology

“Through an interrogation of [my] identit[ies] and the locations and interactions pivotal in the formation of identity” (Starr, 2010, p. 1), I utilized autoethnography as a methodology to facilitate an awareness of who I am and my position as a mathematics educator, and on a broader scope, to also aid in discovering what will “make me better equipped to help students” (Starr, 2010, p. 1). Since the “exploration of identity was not a straightforward process, [I used autoethnography as] an opportunity to effectively acknowledge the pragmatic demands of teaching and of everyday life to take stock of experiences and how they shaped who [I] am and what [I] do” (Starr, 2010, p. 4). Banks (2001) and Starr (2010) helped me to address my research ques-
tions by affirming that “in order to traverse existing [intersectionalities] and their associations, the identity of the educator warrants, perhaps even demands, analytical exploration. For teachers to be effective in a climate of layered and complex diversity, they must become reflexive educators” (as cited in Starr, 2010, p. 1).

I was the subject of this research study. I examined some of my lived mathematical experiences both as a student and as an educator. I then analyzed the stories for the cultural capital evident in them. I interpreted and resolved the existing, and sometime conflicting, identities through which I relayed in a first-person narrative form of storytelling.

I reflected on who I am by evoking memories of my past. Some memories of my classroom teaching practices and experiences then surfaced. Sometimes, classroom experiences evoked memories of my past. This cyclical process of life-as-lived, life-as-experienced, and life-as-told was recorded in a journal. I used recall along with external data, like literature and conversations that informed my own reflexivity, to document the past experiences through first-person narrative by way of storytelling. My perspectives of the lived-experiences were analyzed for which types of cultural capital were present using colored, felt-tipped pens in the journal.

I used two theoretical frameworks to analyze the data: cultural capital and intersectionality. Critical reflection, and using the cultural capital codes, enabled me to scrutinize the identities that existed at times when I was in an identity moratorium. While (re)telling the stories, many identities were (re)interpreted, and thus were transformed, or had their meanings changed within their social and cultural contexts.
Summary of the Findings

The research question that guided this study was: How do I, a female African American mathematics educator, use autoethnography as a reflexive process to investigate cultural capital? My findings indicate that there are multiple ways that autoethnography, as a method of reflexivity, informed the way cultural capital was brought forth in my research. First, the storytelling methods of personal narratives proved an essential way of navigating autoethnography in this study by allowing me to be reflexive by narrating my experiences. I was able to provide narratives that presented rich and deep personal accounts of significant events that I believed help to shape who I am, and am yet becoming, within the field of mathematics education. The stories I provided were descriptive, rather than explanatory. Autoethnography allowed me to investigate the nature of my experiences, not to justify why things occurred. Autoethnography was also the means by which I engaged with the teaching culture that cultivated an authentic voice for sharing my experiences (Starr, 2010). Autoethnography was a process of cyclical reflexivity that allowed me to bridge the interconnectedness of my personal and professional selves. Autoethnography as a reflexive process gave insight into classroom encounters that might have otherwise gone unnoticed. The reflexive nature of autoethnography allowed me to scrutinize my intentions for motivating my students. Investigating cultural capital by using a combination of theories proposed by Bourdieu (1986) and Yosso (2005) helped the reflexive process on the self through the autoethnographic method. I was able to code the stories using the nine types of cultural capital: aspirational, embodied, familial, institutionalized, linguistic, navigational, objectified, resistant, and social.
The subsequent research question asked: How does this reflexive process contribute to my evolving identities? To answer this question, I followed Frank’s (2002) lines of inquiry and used them in analyzing the stories I told. With his suggestion, my stories detailed the pedagogical practices that aided in my claiming an identity. The stories I told implicated others in the culture of teaching and learning, and illuminated instances where my identities were sometimes acting in disparate ways. My stories presented me with a human face, where my struggles and misjudgments were transparent. Where I made mistakes, I named them, and allowed myself to be transformed through them being revealed. The process of telling and analyzing the stories while simultaneously calling other memories forward to be scrutinized, allowed for dialogical processes to exist with my identities being both the topic and the content of the stories.

Conclusions

My study has revealed that careful examination of one’s own identity is transformative and transcendent. “By examining one’s own identity…teachers…dedicate significant time and energy to understanding their own identities, how they intersect, and how dynamics of privilege and oppression work through and on those identifications” (Holland, et al, 2012, p. 196). At first, for me, this relationship was difficult to articulate because of the amount of critical engagement and reflection involved. Also, because this work was autoethnographic, the inputs of others who may be directly affected were not considered in this study.

The opportunity to be reflexive and name the cultural capital at work in my study allowed me to relate and sympathize with my students. I was transformed from the existing structures of authority and oppression by being reflexive about my teaching practices through autoethnogra-
I have learned through this study that identities are indeed shifting and ever evolving, and exist concurrently with each other.

In my experience with this body of work, I used a combination of multiple identities to interpret the social world, while some identities were deployed in a way that subsumes their foregrounding of one dominant, core identity. While I possess multiple identities at all times, of which I cannot live apart from, in analyzing these identities I could not ever ascribe to just one. I found that while there were more dynamic identities linked together, by naming them, there became a hierarchy of which identity prevailed over others. However, the “naming” (Freire, 1970) of my multiple identities in this way contributed to their deconstructions into more underlying identities. This process proved to be paramount to understanding the self.

My identities were always influenced by wider social and cultural contexts and structures operating at multiple levels within social and cultural constructs. As I understand more and more of mathematics education, the teacher in me responds to the situations from my past where I was the student. As I continue to learn about myself, my identity becomes one of a student who still inquires of what more I can learn about my transformations. Embodying a teacher and a student simultaneously makes my story of “mathematics educator development” very unique. As I told some of the stories of how I arrived at my current position, how I’ve questioned who I am and who I am becoming in mathematics education, the multi-vocality of teacher/student resonate loudly. I understand now that this enmeshment makes reflection, and being reflexive, worthwhile as many of my past experiences can be interpreted and reinterpreted using both identities. Like Mizzi (2010), through telling my stories, I discovered many narrative voices, or multiple-
selves, that informed my complete identity within the context of my storytelling. These voices could not be ignored because they uncovered considerations and anxieties that illuminated the differing, and sometimes competing, aspects of my identity that help to shape who I am.

The construction of my storytelling was not directed. I did not have a prescribed method of what themes to center my writing around (Hernandez, 2010). When constructing my stories, I did not hide from telling my stories in their entirety. The act of engaging in the writing of the stories proved to be more emotional than I thought. There were many stories that I did not want to tell because I did not want to risk looking unfavorable in them; however, I did not subject my stories to being bound up in contextual justification and narrate why things happened. I explicitly introduced those stories that I knew made me uncomfortable by citing, “I’m uncomfortable,” and I left them open for interpretation by the reader.

**Discussion**

I initially argued that there are a number of distinctive educational practices that shape the processes of teaching and learning. These processes, I said, are embedded in a person’s knowledge, skill set, or connections that enable them to communicate, interact, and succeed; their cultural capital. Upon investigating cultural capital, I found that there were three main types: embodied, institutionalized and objectified. With further research, it was found that these three were the traditional forms, and that studies had been done to include people of color, to which these traditional forms had neglected. These included: aspirational, familial, linguistic, navigational, resistant and social capitals.
Autoethnography as a methodology allowed me to investigate and evaluate myself, and my personal experiences, in order to explain my cultural experiences. I proposed to evoke certain facets of my academic, personal, and researcher life, and narrate them to understand and reflect on who I am as a teacher and to use what I learned to better understand my teaching practices. Through these reflections, I hoped to reveal who I am, and am becoming, through an analysis of how I am, or might be, transformed by being interactively introspective. This reflexive process involved observing and examining behaviors in the classroom and school that illuminated the cultural capital that existed during different experiences. I hoped that these factors might inform my teacher identities.

Knowing how to name the cultural capital I possess was a liberating epiphany that came as I reflected on my past experiences using autoethnography. Overall, I found that the cohesive nature of Bourdieu’s (1986) conceptualization of cultural capital (embodied, objectified, and institutionalized) presented pictures of positive identities in the stories I told that had all three types present. For example, in “Teacher’s Pet,” my ability to appreciate a good, embodied capital, through the recollection, “I had very pleasant mathematics experiences. I learned so much, and worked so hard; I enjoyed what I was doing, and I reveled in the fact that I had been well prepared to handle the work in that class which made it essentially easy for me to grasp. Mathematics was fun;” my possession of the good itself, objectified capital, in “I was in the Magnet Program, which I had tested into; Advanced Placement Calculus;” and the rewards associated with these goods, institutionalized capital, in “I received many “Student of the Month” titles, and certificates of achievement at the end of the semesters for having the highest averages in my
math courses;” are all indicators of the positive identity connotations associated with the traditional tenets of cultural capital. Bourdieu (1986) proposed that having all three types of cultural capital present meant that a person was more socially adjusted than persons who do not possess them at all, or who possess them in part. This phenomenon occurred again in “Mi primeros profesores blancos,” and “Back to School…Again” where each of the traditional types of cultural capital positioned me as privileged amongst others in my culture. Unfortunately, the traditional tenets of cultural capital did not fully capture my ability to acquire some aspect of lived experience where the appreciation of it afforded me reward and praise. There were more stories of struggle, misinterpretation, hard work, and learning to cope with hardships.

In Bourdieu’s cultural capital, there is no accommodation for the failures that I encountered while developing mathematically. In an ideal situation, the cultural capital that is evident in the stories of accomplishment projected positive images of my identity, but my whole self did not live within these confines. My study reaffirms the need for an expansive view of cultural capital to include the characteristics of identity that aid in identifying the factors associated with poor identity images, and the social factors that contribute to transforming them into ones that allowed me to measure the successes that were born from the struggles that I encountered. The multitudes of identities that coexisted contribute more to understanding the person I am.

When I analyzed my stories for cultural capital, I discovered that multiple identities coexisted simultaneously. The social factors affecting my experiences determined which identity prevailed, and sometimes the reactions of persons I interacted with caused me to negotiate and renegotiate foregrounded identities. The results indicated that I am directly affected by the cul-
tural capital that I employ to navigate educational spaces. That is, my multiple identities are reliant on the cultural capital that is present in negotiating school structures.

**Implications**

There are sweeping implications derived from my study, and I wish to comment on a few that were emergent. First, the need for teachers to be reflexive, or inwardly introspective, is vital to their growth in the profession. I have predicated this study on the fact that “the self [is] a re/source” for making positive changes in academic work, and that identity changes need to be documented, for “knowing more about ourselves as teachers and teacher educators changes us, provokes growth, jolts us out of complacency – …” (Lincoln & Denzin, 1994, p. 578, as cited in Pithouse, Mitchell, & Weber, 2009, p. 48). Teacher effectiveness resonates with the idea that we, as educators, should not default to what has become comfortable within our pedagogical approaches. Critical reflection, and consistent reflexivity, initiates a personal renewal, activating new meanings of self through which new understandings of our profession emerge. Being reflexive impacts the teaching profession in a way that not only disrupts what has become comfortable practices for veteran teachers, but also allows them to invent different ways to approach teaching from a renewed point of view. Thus, teachers are compelled to see each day as a way to build stronger pedagogical approaches and views of teaching that foster positive changes in teacher identities.

My study also implies the need for teachers to communicate themselves to their students, and allow them access to their teacher identities. “Who [author’s emphasis] a teacher is matters. As a person she is defined by her character and by what she does to demonstrate her commit-
ments to serve students” (Leavitt, 2010, p. 10). I had a conference with a parent who suggested I should tell the students about my personal story, like what I have done here; they would come to know me, and as a result, I would facilitate an atmosphere of trust and care. At the beginning of the semester, I most commonly ask students to tell me about themselves, and their mathematics experiences, but I very rarely offered mine. When the students write, they indicate much about their identities with being mathematics students. I usually frame my learning approaches and pedagogies from their responses. If educators reciprocated this practice to allow students to know and understand what the teacher has experienced and what they value, the learning experiences from the student’s perspectives might be improved. To capture this, this study would need to be extended to include the voice of the student. In this way, we might capture a complete picture of the reciprocal dynamic of shared identity in the mathematics classroom. From that rich discourse, we might find out how identities are negotiated between both teacher and student.

Identity and teachable-moment-curriculum is implied in my study as well. Teachable-moment-curriculum is grounded in learning through experience. When the students in my class questioned my past failures in mathematics, it created a space for me to draw them in and position myself alongside them, rather than just being seen as the classroom authority. Through teachable-moment-curriculum,

We reconstruct teacher and learner images as transformative identities to allow young and old alike to explore new, emerging meanings. We do this not to ensure or perpetuate pre-existing knowledge and power, but rather to empower us to be who we are in the process of becoming. Teachable moments, from this perspective, represent new emerging ways for teachers and students to learn from each other by temporarily ignoring institutional
identities in order to become participating members in an interdependent teaching and learning community. (Hyun and Marshall, 2003, p. 125-126)

Teachable-moment-curriculum implementation can be transformative and impact teacher effectiveness in any classroom.

The therapeutic nature of being honest about unsuccessful pedagogical practices and the decision-making processes associated with mathematics education was prevalent in my study. Identifying where I went wrong, and being able to take ownership of those mistakes contributed to the discovery of who I am. The identities associated with being critically reflective have been mentioned before, and having an understanding of these dynamics at play contribute to knowing more about how to improve one’s own teaching practice. Albeit a difficult process, self-reflexivity using autoethnography as a methodology promotes the evocative nature of interactions with culture, and helps to bring out what one might feel about the work they do, and how one might feel about others who interact with them in the larger society. Opportunities to scrutinize and critique those interactions are important to educator growth, and further implicate the transformative nature of autoethnography.

Also, alternative teacher programs, like the one I participated in to receive my teacher certification, left much to be desired in learning the roles of being a teacher. I attended classes about teaching practices, I learned how to do a teacher’s job, but I never learned who I was as a teacher until I experienced teaching. Research has allowed me to discover my identity as a teacher; thus, I am better able to articulate my personal beliefs about teaching and learning. I have never had a platform to declare these identities, and name them, until I became a teacher
researcher. Therefore, this study implies that every teacher, who is interested in discovering who they are in the classroom, engage in research necessary to reveal what it means to be a teacher, which includes one’s personal beliefs and recollections of their experiences with teachers and teaching, how they see themselves, and how they might be transformed through this discovery.

Concisely, the impact of this autoethnography to the teaching field has been profound in ways that are immediately seen by the sharing of teaching experiences with those that ascribe to a common culture of teaching. This is one that involves the identities, knowledge, and sets of beliefs that impact their teaching pedagogies, and influence the ways they interact with students and themselves. The impetus for creating discussions about teacher identity amongst colleagues, across disciplines, has been an unanticipated reward of this study given that the more these stories are shared, the more other teachers are compelled to share their own stories. This gives rise to the unique experiences and authentic voices of teachers being heard; some that have otherwise been ignored in the research regarding teacher identity.

When teachers communicate their identities through reflecting on their experiences, they are able to cope with their own experiences by knowing the experiences of others. Also, they might use a conglomerate of positive teacher identities to build and expand identities of their own. Since the reflexive process can be very emotional, teachers might use these emotions to target their own concerns with the profession and then they might start to ameliorate some of the nuances of poor morale in the workplace. This type of community-based support might impact teacher attrition, and help new teachers feel more supported. These conversations with others reify how important being openly reflexive is when we share out our experiences and create con-
versations about how it is we cope with everyday issues associated with teaching. It also creates a safe and judgment-free place for being honest about the highs and lows of the teaching profession. If teachers know that there is a community of understanding, or a coherent cultural capital of teaching that we might all contribute to, then they might endeavor to not only stay in the profession longer, but to also advance in the profession as professional scholars by adding to the field in ways that are transformative and impactful in the realm of research.

Every teacher’s individual experiences are unique, and may serve as a means to impact others in the field. Getting teachers to talk about the profession in order to improve their pedagogy is a necessary part of enacting changes in teacher education. When teachers are reflexive, they help transform the profession. Autoethnography has been a markedly rewarding means for initiating this transformation by allowing the experiences of one to impact and speak life into the culture of teaching as a whole.
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APPENDICES
APPENDIX A

AUTOBIOGRAPHICAL TIMELINE CHRONICLING THE PAST

1980  Born as youngest of three daughters

1982  Entered a preparatory, private-Christian school in Atlanta, GA

1985  Entered public primary school, southeast Atlanta

1991  Finished primary school, entered middle school, southeast Atlanta

1994  Finished middle school, tested into magnet high school for engineering and applied technology – phase 1 - southwest Atlanta

1998  Graduated top 3% in high school class and entered private, elite university to study physics and atmospheric science

2000  Changed major to Mathematics after failing Physics

2001  Pledged and granted membership into Delta Sigma Theta Sorority, Inc., one of world’s most prestigious female African American organizations for community service, scholarship, and sisterhood

2002  Completed BA in Mathematics; only African American female with mathematics degree in my class; entered the teaching profession in secondary mathematics which I still do presently

2005  Earned full teacher certification after completing alternative certification program (GaTAPP) and passing the Praxis II
2007  Entered GA State University M.Ed. program for Mathematics Education
2008  Earned M.Ed. in Secondary Mathematics Education
2009  Began Ph.D. program at GA State University for Middle-Secondary Education and Instructional Technology with specialty in Teaching and Learning for Mathematics
2010  Gave birth to daughter
2012  Upgraded teacher certification to T-6 for Education specialist

Middle School Algebra 1: Order of Operations
College Psychology (you don’t belong here, I think)
Calculus note-taking (anti-elitism)
Teach for America reject (failing physics and changing majors)
Parental nightmares in high school (I take myself very seriously)
CYA – carry your agenda (why the bar is set so high)
APPENDIX B

GEORGIA STATE UNIVERSITY IRB APPROVAL LETTER

INSTITUTIONAL REVIEW BOARD

Mail: P.O. Box 3999 Atlanta, Georgia 30302-3999
Phone: 404/413-3500 Fax: 404/413-3504

April 29, 2014

In Person:
Dahlberg Hall 30 Courtland St, Suite 217

Principal Investigator: Christine Darling Thomas, PhD

Key Personnel: Thomas, Christine Darling, PhD; Williams, Candace

Study Department: GSU - Middle & Secondary Education

Study Title: Navigating a moratorium of identities: An autoethnographic analysis of cultural capital in a mathematics classroom

Funding Agency: Review Type: Expedited 6, 7 IRB Number: H13488 Reference Number: 308636

Approval Date: 04/29/2014 Expiration Date: 04/28/2015

The Georgia State University Institutional Review Board (IRB) reviewed and approved the above referenced study in accordance with 45
CFR 46.111. The IRB has reviewed and approved the study and any informed consent forms, recruitment materials, and other research materials that are marked as approved in the application. The approval period is listed above. Research that has been approved by the IRB may be subject to further appropriate review and approval or disapproval by officials of the Institution.

Federal regulations require researchers to follow specific procedures in a timely manner. For the protection of all concerned, the IRB calls your attention to the following obligations that you have as Principal Investigator of this study.

1. For any changes to the study (except to protect the safety of participants), an Amendment Application must be submitted to the IRB. The Amendment Application must be reviewed and approved before any changes can take place.

2. Any unanticipated/adverse events or problems occurring as a result of participation in this study must be reported immediately to the IRB using the Unanticipated/Adverse Event Form.

3. Principal investigators are responsible for ensuring that informed consent is properly documented in accordance with 45 CFR 46.116.

   • The Informed Consent Form (ICF) used must be the one reviewed and approved by the IRB with the approval dates stamped on each page.

4. For any research that is conducted beyond the approval period, a Renewal Application must be submitted at least 30 days prior to the expiration date. The Renewal Application must be approved by the IRB before the expiration date else automatic termination of
this study will occur. If the study expires, all research activities associated with the study must cease and a new application must be approved before any work can continue.

5. When the study is completed, a Study Closure Report must be submitted to the IRB.

All of the above referenced forms are available online at http://protocol.gsu.edu. Please do not hesitate to contact the Office of Research Integrity (404-413-3500) if you have any questions or concerns.

Sincerely, Andrew I. Cohen, IRB Vice-Chair

Federal Wide Assurance Number: 00000129