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**WHO'S IN YOUR CLASSROOM? A NARRATIVE INQUIRY OF HIGH SCHOOL
STUDENTS' EXPERIENCES WITH CARING INSTRUCTION AND MATHEMATICAL
STRUGGLES**

by

ANDREW SPIRES

Under the Direction of Dr. Caroline Sullivan

ABSTRACT

The purpose of this study is to better understand high school students' perceptions of caring instruction and mathematical struggles through a narrative inquiry. Lakewood High School (pseudonym) – a large, socioeconomically and racially diverse school in the southeastern United States – was chosen conveniently yet purposefully as the site of study. The participants were three 11th grade students who have experiences with both caring instruction and mathematical struggles. Data collection included intense and highly relational co-creation of stories by the researcher and participants through conversational interviews, researcher memory recreations, artifact analysis, and other writings introduced throughout the conversations.

This narrative inquiry allows for an alignment between the ethic of care (Noddings, 1984) and Deweyan experience (1938) that manifests itself through the lived experiences of the

researcher and the participants. This narrative inquiry will begin to fill the gap that exists between student and teacher perceptions of caring mathematics instruction.

INDEX WORDS: Caring instruction, Mathematical struggles, Narrative inquiry

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STRUGGLES

by

ANDREW SPIRES

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in

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Atlanta, GA
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DEDICATION

I dedicate this dissertation to my brothers; John Preston Spires, III and Eric Matthew Spires. As a father and a teacher, I see you both everyday in the faces of my children and students. You continue to make me a better person in death as you did in life. We continue to grow in relationship as I dream each night and as I interact with my children and my students. I better understand who you were as people and who we are as brothers more each day. Your memories are always with me.

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CHAPTER 1

INTRODUCTION

Almost one in three students in U.S. public high schools never finishes (Stetser & Stillwell, 2014). Public education in the U.S., in the absence of any other unifying institution, has been and continues to be the glue that binds U.S. society (Balfanz, 2009; National Education Association of the United States, 1918). Public education is the primary means of social mobility and community sustainment (Balfanz, 2009). Schools are the primary – if not the last – bastion of public life common throughout the U.S. (Parker, 2005). It is through the “proper democratic conditions, [that] the interaction in schools can help children enter the social consciousness of puberty and develop habits of thinking and caring necessary for public life” as enlightened democratic citizens (Parker, 2005, p. 348). Yet, as accountability reforms over the last 30 years make graduation requirements more academically rigorous, it is more difficult for students to graduate now than at any other time since compulsory high school education began in the United States in the 1920’s (Balfanz, 2009). The difficulty with increasing the academic rigor in academic courses and not in other courses such as the arts and technical courses leads to rising dropout out rates, and the negative social effects of highly marginalized youth who suffer from significantly higher rates of unemployment, poor health, and criminal behavior than their peers who complete high school (Fall & Roberts, 2012; Noddings, 2013).

The aforementioned detrimental impact of students dropping out makes factors contributing to higher levels of student success – and thus, school completion – important to study. According to a meta-analysis of 110 predictors of high school completion, the most accurate of these factors is mathematics achievement in grades 7 – 9 (Bowers, Sprott, & Taff, 2012). Thus, one place to begin to address high school completion in the U.S. is by examining

mathematical content and instruction. However, a teacher's knowledge of the content and good instructional practices is not the only attributes of quality mathematics education (Gutierrez, 2013; Rolon-Dow, 2005). Relational interactions between teachers and students are crucial to instruction. Students who have a history of poor mathematics achievement and low interest in the study of mathematics achieve more when the teacher and shown care by the teacher (Averill, 2010; Dever & Karabenik, 2011; Eccles, 2004; Martin & Dowson, 2009; Muller, 2001; Riconscente, 2014) hold them to high standards. Teachers described by students as caring had the effect of both motivating students and lowering the interest gap between higher achieving students and lower achieving students (Dever & Karabenik, 2011). That is, a mathematics teacher, who students perceive as caring, shrinks the interest and motivation gap among students who are struggling mathematically. Though there is a body of notable research showing the importance of caring mathematics instruction in developing student interest and engagement in mathematics, as well as increasing achievement, there is a call for researchers to better understand what students' perceptions of care are; especially at the high school level (Dever & Karabenik, 2011; Hayes, Ryan, & Zsellar, 1994; Muller, 2001).

Research shows caring matters. Nevertheless, the problem is less about teachers not caring and more about students not perceiving teachers as caring (Noddings, 1984, 2002, 2005; Rolon-Dow, 2005). One student who left school before graduation said, "There are a lot of reasons I did not finish high school . . . The teachers didn't really know me, and I didn't try to get to know them. I just started skipping more and more. Nobody cared anyway" (Branson et al., 2013, p. 13). Differences across cultural, social, economic, gender, and racial lines are expected in terms of perceived caring in the classroom (Averill, 2012). There is a call for research particularly in the mathematics classroom to shed light on this phenomenon of caring

(Hackenberg, 2010a). Lewis et al. (2012) stated, “Admittedly, teachers show concern in ways that we did not measure” (p. 23). The studies, showing caring instruction was important in the academic achievement of students, began with an assumption of what caring instruction was. For example, some of the studies asked students to rate pre-determined teacher qualities of care and students’ voices. These studies did not examine personal perceptions. I will discuss these studies thoroughly in the next chapter. My study differs in that the primary purpose is not to ask students to rate pre-identified attributes of care, but to hear the voices of students through interactive conversations and co-creation of meaning through narrative inquiry. By telling these stories, the students will leave us with an impression – though temporal and tied to place and social interaction – of qualities of caring mathematics instruction.

Research Question

The research question guiding this study is: What are three 11th grade students’ stories of their experiences with caring instruction and mathematical struggles? With this in mind, this research starts (and ends) with what students know and understand about caring instruction and mathematical struggles: the students’ perspectives are always privileged. I engage this work through narrative inquiry methodology as outlined by Clandinin (2013). Researchers using this method of narrative inquiry are most concerned with a story as co-constructed by the participant and the researcher; thus, “thinking narratively about a phenomenon challenges the dominant story of phenomenon as fixed and unchanging throughout an inquiry” (Clandinin, 2013, p. 38). One cannot understand students’ concepts of care in the high school mathematics classrooms without having a context of what caring or care looks like for the student inside and outside the classroom. Therefore, I cannot understand replies to the prompt “tell me about your experiences

with caring mathematics instruction” – or even discuss it in good faith – until I explore the students’ stories of self in relation to caring. The structure of the conversations will be:

Research Conversations #1 and #2: Family, friends, community, and school-related caring

relationships past schooling experiences; Caring instruction and mathematical struggles

Research Conversation #3: Member checking; Discuss narratives

Purpose

Teachers’ claims of caring often contradict the perceived care by students (Hayes, Ryan, and Zsellar, 1994; Noddings, 1984, 2002, 2005; Rolón-Dow, 2005; Wentzel, 1997). The purpose of this study is to tell the stories of three 11th-grade students’ experiences with caring instruction and mathematical struggles.

Significance of the Study

I – as a parent, teacher, student, and researcher – would be hard-pressed to find anyone who thinks caring does not matter in education. Though I value caring in the classroom, there are very real obstacles to caring for students. The significance of the study is to draw attention not just to the importance of care, but to draw attention to the myriad obstacles to caring in an effort to understand and overcome them. These obstacles come in the form of institutional, structural, logistical, emotional, and psychological barriers to students receiving the care they need to be successful in the classroom and function as enlightened, democratically engaged citizens. Though the students’ stories are contextual and linked to time, place, and interaction, the stories have the potential to enrich the educational experience of pre-service and in-service teachers.

Obstacles to Caring

I have been a high school mathematics teacher in Georgia for the past seventeen years. I have watched my class sizes increase each year. I have watched the number of mandatory standardized county and state tests increase. I watched the curriculum change five times, each time with the county and state applying a more prescriptive approach to teaching. In one case, I was encouraged not to deviate from a day-to-day pacing guide. All of these developments in my seventeen years objectify mathematics education. The crowding in my classroom and the impersonal, prescriptive nature of many mathematics classrooms are obstacles to caring (Hayes et al., 1994; Noddings, 2005). Neyland (2004) described the current educational atmosphere as one that “at best paralyzes the ethical self, and at worst erodes it” (p. 57). The challenge to see students first, then evaluate the curriculum, and teach to the young person is increasingly difficult in contemporary classrooms. Establishing an ethic of care that values the student-teacher relationship before the dispensing of a curriculum is a daily challenge. Another challenge to caring is the organization of students by age instead of by proclivity, interest, or need (Eisner, 2003; Noddings, 1984, 2013).

Current trends in mathematics education in the U.S. overemphasizing achievement tests makes the creation of creative and engaging lessons more difficult (Brown, Jones, & Bibby, 2004; Fleener, 2004). The trend results in grading practices that create students as objects of evaluation instead of subjects of care (Noddings, 1984). Compulsory education with a mandated exit exam is challenging enough, but forcing a student who has a 2nd grade mathematical knowledge base to sit through a freshman algebra class is immoral. I have experienced this situation and similar situations on many occasions.

There are several structures hindering the development of caring relationships in U.S. high school mathematics classrooms (Darling-Hammond, 2010; Noddings, 2005). I discuss seven particular structures in this section. The first two structures that create obstacles to building caring relationships between teachers and students are the impersonal environment in high schools and the de-skilling and overworking of teachers. The third obstacle is the current trend toward standardization of content and instruction. The fourth structure is the overemphasis on testing. The fifth and sixth – and most complex – are socio-political contexts of teaching and teacher beliefs. The last barrier discussed is the set of common misconceptions about what makes a highly effective teacher; especially related to mathematics instruction. These seven sections certainly overlap in ways that are difficult to separate. Nonetheless, for the sake of clarity and flow I have separated them.

Impersonal Environment. Secondary schools in the U.S. are designed to be crowded and impersonal (Darling-Hammond, 2010; Hayes, Ryan, & Zsellar, 1994; Noddings, 1984). Many high school teachers struggle with the challenge of getting to know 100-150 students each school year when they generally see them less than an hour each day. A factor in students dropping out is that they felt no one knew them or cared about them (Branson et al., 2013). Teacher-student relations are all but missing in some schools. “Close connections between students and their teachers are most markedly absent in large urban schools where mostly low-income students of color attend” (Darling-Hammond, 2010, p. 63). The high school as it is currently conceptualized, is more a factory work floor, less a collective of people growing physically, emotionally, and ethically.

De-skilling and Overworking of Teachers. Coupled with the organizational and physical obstacles to caring inherent in the typical structures in high schools throughout the U.S., there is

a growing strain on teachers. In recent years, an intensified workload has brought on the de-skilling of teachers (Apple, 1986/2013). Teachers are mandated to use outside experts to provide curricular materials. These curricular materials are often scripted and leave little time for creativity on the part of the teacher (Pinar, 1978/2013; Shoenfeld, 2004/2008). This curricular handoff from outside the classroom triggers the absence of rich dialogue necessary for depth of learning as well as the development of relationships, as was stated earlier in this chapter.

Students who attend schools in low-income areas tend to experience lessons lacking in depth of learning and relationship development (Darling-Hammond, 2010; Noddings, 1984). The result in too many mathematics classrooms is dialogue that is “limited to prescribed and pressured communications” (Hayes, Ryan, & Zsellar, 1994, p. 2). Despite the widespread belief to the contrary, mathematics instruction has the potential to generate rich conversation resulting in a warm and highly personal classroom. Mathematics should not be presented as a structure that is “hierarchical, logically consistent, and rule-based, as at present, but as ideas-based” (Neyland, 2004, p. 70). This emphasis on ideas is “essentially humanistic – as distinct from formalistic – because ideas are human inventions” (p. 70). To continue to instruct mathematics in formulaic ways that rob the learning experience of creativity and enchantment on the part of the teacher and the student is poor pedagogy. A more ethical mathematical pedagogy is difficult to implement with the current de-skilling of mathematics teachers (Neyland, 2004; Noddings, 1984).

Overemphasis on Testing. Exacerbating the highly impersonal nature of high school mathematics instruction and increased pressure to standardize content and instruction in the U.S. is the overemphasis on testing. Due to current trends in mathematics education in the U.S. focusing on outputs and achievement tests, creative, and thus more engaging, lessons are more

difficult to implement (Brown, Jones, & Bibby, 2004; Clandinin, 2013; Fleener, 2004). Central to the teaching profession are a teacher's ability to create experiences of learning that connect with students and the content (Dewey, 1938; Liston, 2004). Students are not able to make these connections when teachers cover topics as quickly and as superficially as possible in order to prepare for a test. The constant disruption of six-week, nine-week, midterm, and final exams diminish the quality of experience in the classroom. We at my school – as all public high schools throughout Georgia – administer one specific state-mandated and initiated “final” exam – the End of Course Assessment – three weeks before the end of the final day of school. As was stated almost 80 years ago by Dewey (1938) the educator must “be able to judge what attitudes are actually conducive to continued growth and what are detrimental” (p. 39). Shutting down the classroom for a week every three to six weeks for testing creates a challenge for teachers wishing to develop a sense of continuity of instruction and positive attitudes toward learning. Moreover, this reality puts undue stress on teachers making it more difficult to develop lessons that center learning as an experiential process. Not only do the current trends in testing result in teachers focusing solely on the dispensing of content instead of focusing on students as the subjects of care (Noddings, 1984), but the judgment incurred by the results of the tests compel teachers to instruct in ways they personally find disjoint and against their better professional judgment (Gutierrez, 2013; Walls, 2010). While I am aware that I should teach more engaging, exploratory, student-centered lessons, I find myself teaching using instruction that is more direct because I feel as though I am under a microscope (Au, 2007/2013). Teachers find themselves skipping time-consuming investigations that result in deep levels of learning because concepts contained within the investigation are not easily tested in a multiple-choice fashion (Popham, 2004/2008). This type of instruction leads to a hodge-podge, cobbled together set of topics (Au,

2007/2013; Walls, 2010), and reifies mathematics as a fixed structure of topics as opposed to a way of thinking (Neyland, 2004). Teachers find it hard to care about their lessons in this environment. Students also find this highly impersonal hodge-podge method of instruction absent of inspiration. The result in too many classrooms is routines filled with boredom and a lack of joy for the teacher and the student (Holt, 2002/2008; Popham, 2004/2008).

Standardization of content and instruction. In the realm of mathematics, daily expectations such as common daily lesson plans and common assessments limit mathematics teachers' professional choices in the classroom. "This is not to say that teachers are unable creatively to interpret the various rules and protocols that are imposed upon them – only that those who do so are swimming against a tide that requires standardization" (Neyland, 2004, p. 59). Thus, in this current state of standardization, caring for students in a high school mathematics classroom can sometimes entail the teacher being "creatively insubordinate" with respect to policies that are deemed harmful to students by the teachers (Gutierrez, 2013, p. 62).

In this era of state-mandated high-stakes testing, it is nearly impossible for teachers to ignore mundane content and skills-focused curricula. However, teachers undertaking culturally informed pedagogies take on the dual responsibility of external performance assessments as well as community- and student-driven learning. (Ladson-Billings, 2014, p. 83)

Teachers struggle to meet the social and emotional needs of students and "cover the content," though it can be done well without compromise (Ladson-Billings, 2014).

Common Misconceptions about Mathematics. In the current educational environment where content is dominant and testing is ever-present, teachers can find it difficult "to honor a student's integrity ... to see the student as more than a trainable product, more than a walking

mind” (Liston, 2004, p. 484). For the current environment to change, mathematics educators must shift from teaching mathematics as an object to teaching mathematics as processes and relationships (Fleener, 2004; Noddings, 1984). This will open up spaces for teachers to challenge the contradictory and detrimental beliefs about what high school mathematics classrooms should look like, how mathematics should be taught, who should have access to mathematics education, and who is able to do mathematics (Fleener, 2004; Gutierrez, 2013).

Mathematics is a social construct created over the course of thousands of years (Davis & Hersh, 1981; Ernest, 2004; Stinson & Powell, 2010). The growth of mathematics in the last 100 years has occurred at such a rapid rate, there is a name for the resulting crisis: “Ulam’s Dilemma” (Davis & Hersh, 1981, p. 21). The dilemma is such; mathematics is growing so quickly that there are not enough experts in any one branch of mathematics to judge the quality of new discoveries.

Despite this reality of mathematics as a socio-historical construct, there is still the common misconception that mathematics is fixed, Platonic, and a universal language (Davis & Hersh, 1981). One of the misconceptions stemming from the fallacy of mathematics as fixed and universal is the idea that mathematics as a content area in schools in the U.S. should be inherently difficult (Brown, Jones, & Bibby, 2004; Ernest, 2004; Hardy, 2004; Walls, 2010). In addition, the common view in American society is that a student is either good at math or not since mathematics is viewed as being inherently difficult. “The only way to overcome thinking in terms of the inclusive/exclusive is to break habits of thinking in terms of either/or or the dualism of the dialectic” (Fleener, 2004, p. 207). A student’s identity as a mathematics learner is fluid, ever changing, and highly dependent on the context and the topic. A student might be successful with one mathematical topic, and not with another, just as in any field of study.

Teacher Beliefs about Students and Learning. Mingled with the misconception about mathematics as inherently difficult is a student's concept of mathematical ability (Gutierrez, 2013). Too many teachers help to reify students' negative beliefs about their identities as learners and their abilities as mathematics students. Thus, it is important to examine teacher beliefs about mathematics, students, and learning given the inextricable link between belief and behavior (Prime & Miranda, 2006/2008). It is too easy as a teacher to use students' deficits, whether real or perceived, as an excuse to not challenge and engage them (Gutierrez, 2013; Prime & Miranda, 2006/2008). "Whether stereotypical or not, teachers' views about their students are likely to be powerful determinants of their instructional decisions and of the kinds of social climate they create in their classrooms" (Prime & Miranda, 2006/2008, p. 265). Teachers' beliefs should be in line with the reality that students' identities – whether self-imposed or assumed by the teacher – are dynamic and in flux. Students are in a state of "becoming" (Freire, 1970). They are in an ever-changing state. This dynamic, fluid identity is not only in a constant state of change, but "researchers and practitioners who espouse a sociopolitical frame of mind (in particular poststructuralists) see identity as something you do, not something you are" (Gutierrez, 2013, p. 45). This reality is counter to larger systemic issues of racism in the classroom as it relates to race and mathematical ability (Battey, 2013). A student who is perceived by him/herself and the teacher as not particularly good at mathematics could change that perception in a short time.

Characteristics of a Highly-Qualified Mathematics Teacher. Once teachers and students themselves challenge the notion of mathematical abilities as fixed and inherently difficult for most students, the community of educators must then challenge the assumptions of what makes an effective high school mathematics teacher. Teacher effectiveness is irrevocably linked to

social interactions in and out of the classroom. Effective mathematics teachers must have more than a mastery of mathematical content and a narrowly defined concept of mathematical pedagogy.

Too often, we develop categories of ‘effective mathematics teachers’ or ‘high-quality mathematics teachers’ strictly around lines of mathematics or narrow versions of pedagogy, failing to fully capture the dispositions, social interactions, and commitments to advocacy that go hand in hand with the very practices necessary for supporting marginalized students in mathematics. (Gutierrez, 2013, p. 53)

Stakeholders in schools must challenge the conception of a highly effective high school mathematics teacher. The image must involve a teacher who “shifts, changes, adapts, recycles, and recreates instructional spaces to ensure that consistently marginalized students are repositioned into a place of normativity” (Ladson-Billings, 2014, p. 76). Mathematics education is “profoundly cultural and political” (Hardy, 2004, p. 105). An effective high school mathematics teacher understands the sociocultural context in her classroom. She knows that education is highly experiential, and that learning is relational and dependent on classroom interactions.

Ethic of Care as a Resonant Theme in My Story

The obstacles for high school teachers to develop caring relationships with their students are myriad. Therefore I will ground my study in a concept of caring that resonates with me. I use Noddings’ (1984) ethic of care as a framework for studying the descriptions of how students perceive caring mathematics instruction. This ethic of care consists of four components: modeling, dialogue, practice, and confirmation (Noddings, 1984, 2002, 2005). I will discuss each of the components in the next chapter. In this section, I will only discuss them briefly.

It is important to remind the reader that the underlying argument running throughout this study is that caring is not something a teacher sprinkles into the classroom. Caring is at the core of the educational experience (Hackenberg, 2010a, 2010b; Hayes et al., 1994; Noddings, 1984, 2002, 2005). An educational experience without caring contradicts the notion of education in the truest sense of the word. “To educate,” according to Merriam-Webster’s comes from the Latin *educere* meaning “to lead forth” and from the Middle English “to rear.” Educators are in the business of raising, rearing, or bringing forth students.

Noddings’ ethic of care categorizes aspects of care. This allows me to not only see a more formalized conceptualization of what caring might (or could) look like in the mathematics classroom, but it allows for a rich scaffolding and description that speaks to my personal notions of care going into the study. These notions of care act more as a backdrop into my personal understanding of care and not as a conceptual framework.

Modeling. Noddings’ (1984) ethic of care begins with modeling. Moreover, the teacher is the primary model of care in the classroom context. Students are generally not mature enough to know how to act in ways that are caring toward classmates. Thus, the teacher can model caring and expect that through dialogue, practice, and confirmation students will become practitioners of care.

Dialogue. The second component of the ethic of care is dialogue. Through open and honest conversation in the classroom, students can feel respected and validated in their thoughts and feelings. Students feel legitimated as people engaged in a true learning venture when there is open dialogue (Freire, 1970; Noddings, 1984, 2005). The notion that understanding comes through conversation is primarily for *caring* as defined by Noddings (1984) to take place (see

definitions later in this section). This makes openness of conversation throughout the interaction in the mathematics classroom imperative.

Practice. The third component of Noddings' ethic of care is practice. A student develops a caring relationship through practicing caring. Just as practice in mathematics education is crucial to learning mathematics, caring at its core is about exhibiting and taking part in caring relationships. Caring for others is fundamental to education (Hackenberg, 2010a, 2010b; Hayes et. al, Noddings, 1984, 2002, 2005).

Confirmation. The fourth component of Noddings' ethic of care is confirmation. The personhood of one deserving respect and dignity at all times is central to the tenet of confirmation as outlined by Noddings (1984). "Confirmation lifts us toward our vision of a better self" (Noddings, 2005, p. 25). There is no formulaic approach to a teacher's confirmation of a student. There will be responses to inappropriate behavior, but through addressing behaviors in ways that position the student as her "self better than this act" (p. 25), we maintain caring relationships as the core of the interaction in the classroom.

The aforementioned four components that encapsulate how teachers and students exhibit caring in the classroom were part of my story going into this study. Education involving no caring is oxymoronic and scandalous in the sense that it deviates from the nature of education as experiential and relational (Dewey, 1938).

Definitions

Caring – For the sake of this study, I will use Noddings' definition of care; that is, to have a caring relationship all three conditions – *engrossment*, *motivational displacement*, and *recognition* – must be present. I will further discuss a rationale and comparison of scholar's usage of the term *caring* in chapter 2.

One Caring – In the context of Noddings’ (1984) concept of care, the *one-caring* is the mature one, the adult, the teacher, the mother.

Cared-for – In the context of Noddings’ (1984) concept of care, the *cared-for* is the less mature one in the caring relationship, the child, the student.

Engrossment – Noddings’ (1984) concept of engrossment means thinking about someone to gain a better understanding. It is a mental state of commitment to the other, at times “even suffering” to gain this better understanding (p. 10).

Motivational Displacement – Noddings’ (1984) concept of motivational displacement is a realization “that there is invariably this displacement of interest from my own reality to the reality of the other” (p. 14). What’s more, it is “when the other’s reality becomes the real possibility of the other” (p. 14).

Recognition – This third and controversial component completes Noddings’ (1984) definition of care. Recognition is “perception by the cared-for of an attitude of caring on the part of the one-caring” (p. 68).

Mathematical struggles – For the sake of this study, students will personally define mathematical struggles in and through their narratives.

Organization of the Study

I introduced the importance of caring mathematics instruction earlier in this chapter. Though there is much research at the middle and elementary school level about the importance of caring instruction, very little has been conducted at the high school level; especially as it relates to students’ perceptions of care. Students’ perceptions of caring mathematics instruction at the high school are important in terms of mathematical achievement, but research about student perceptions and descriptions of what this caring mathematics instruction looks like is

scant at best. I used Noddings' (1984) ethic of care because of its prevalence as the most fundamental understanding as to what caring instruction is. Every study I found on caring used Noddings ethic of care to ground the work. The studies used the ethic of care to create surveys for students to rank attributes of care, or to describe attributes of care in general. Though I lean heavily on Noddings' concepts of care, I will allow for any deviation in the course of the stories of students' experiences of caring mathematics instruction as I recognize that Noddings' notions of caring instruction resonate with me and are thus part of my story of caring. Though I imagine there will be considerable overlap between Noddings' ethic of care and the students' descriptions, there is also considerable room in the discourse for there to be de-consensus with respect to aspects of care.

The remainder of this study consists of four more chapters, a reference section, followed by appendices. Chapter 2 is the literature review where I discuss research and theory relevant to caring instruction and mathematical struggles. Chapter 3 consists of a discussion of the methodology of narrative inquiry and the data collection and analysis methods. Chapter 4 is where I share the narratives of the participants and myself. Chapter 5 is where I present a brief overview of the entire study, the resonant narratives, conclusions, recommendations for future studies, and a personal reflection as closing remarks. The references and the appendices conclude the study.

Summary

Caring in the high school mathematics classrooms is important for increased mathematics achievement. Moreover, as important as mathematics achievement is, caring instruction helps to ensure all students finish high school, stay connected to society as well as enable students to better function as citizens in a democracy. Using Noddings' (1984) ethic of care as a resonant,

personal backdrop, and narrative inquiry as both methodology and a way of knowing, three students and I will co-create stories of past caring experiences and academic struggles in mathematics, and thus better understand experiences of care in the classroom from the students' perspective. These deep, personal stories of care will re-imagine themselves in the lives of teachers and students, and thus find new life as all stories do in their being told and retold.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The purpose of this research study is to tell the stories of high school students' experiences with caring instruction and mathematical struggles through narrative inquiry. In this chapter, I describe caring instruction; especially as it relates to mathematics instruction. I discuss Noddings' (1984) ethic of care, and I explore current studies relating to caring instruction, paying special attention to caring mathematics instruction. I discuss caring and mathematics instruction, and students' experiences with mathematics. I follow up these sections on caring mathematics instruction with a brief discussion of the gaps in the current literature.

The emphasis on caring is at the core of the educational experience at any level of schooling. Noddings' (1984, 2002, 2005) ethic of care is prevalent as a frame in various studies involving caring instruction. Once again, I use Noddings' notions of care as a backdrop in my personal narrative. According to the model as outlined by Noddings, caring instruction consists of 1) modeling, 2) dialogue, 3) practice, and 4) confirmation. Later in this section, I will discuss each of these categories of caring in the classroom.

There is a great deal of research on caring instruction using Noddings' ethic of care as a theoretical and conceptual framework (Hackenberg, 2010a, 2010b; Hayes, Ryan, & Zsellar, 1994; Muller, 2001; Wentzel, 1997). There is also much research demonstrating that when students experience a caring teacher their motivation to work in mathematics increases (Averill, 2010; Dever & Karabenik, 2011; Eccles, 2004; Martin & Dowson, 2009; Muller, 2001; Riconscente, 2014). However, there is little research on student perceptions of caring instruction in high school mathematics classrooms. Noddings (1984, 2002, 2005) highlights the wide gulf

between students' perceptions and teachers' perceptions of caring and how it manifests itself in the classroom. There are several studies on caring instruction at elementary and middle grades (Hackenberg, 2010a, 2010b; Hayes, Ryan, & Zsellar, 1994; Muller, 2001; Noddings, 1984, 2002, 2005; Wentzel, 1997). There is a major difference between my study and others by researchers mentioned above. Other studies operate under the assumption that attributes of caring instruction are already a fully understood construct. My study makes no such assumption though it does lend credence to previously established categories of care as part of my personal narrative on caring instruction. My study aims to tell students' stories of caring mathematics instruction and academic struggles in mathematics in the hopes of resonating with teachers in a way that will diminish the gap between teacher and student understandings of caring instruction.

Caring Instruction

Caring is a complex construct and difficult to describe. This term conjures different understandings depending on the context. Some define it generically as a common usage understanding, such as Lewis et al. (2012) who described caring as "the ability to listen to, empathize with, and be moved by the plight or feelings of the other person" (p. 3). However, Noddings described caring as "the very bedrock of all successful education" (p. 27) and Hayes et al. (1994) described it as "the fundamental basic in education" (p. 3). Furthermore, Noddings (1984) argued caring is an ethic that transcends principle. Care has relationship at its core (Hackenberg, 2010a, 2010b; Noddings, 1984). Hayes et al. (1994) described the most fundamental and generally agreed upon aspects of caring to be the "trustful acceptance of the receiver of caring by the sender of caring and the necessity of action that demonstrates caring" (p. 4). Noddings (1984) elaborated on the construct of care: "Caring involves two parties: the one-caring [teacher] and the cared-for [student]" (p. 68). Noddings' conceptualization of care

involves three essential components: *engrossment*, *motivational displacement*, and *recognition*. *Engrossment* is thinking about someone to gain a better understanding. It is a mental state of commitment to the other, at times “even suffering” (p. 10). A teacher in the classroom must put forth enough effort to understand the situation of the child if caring is to take place. However, understanding the student’s situation is not enough. There must be an impetus to want to act on this understanding. *Motivational displacement* is a realization “that there is invariably this displacement of interest from my own reality to the reality of the other” (p. 14). Noddings further stated, “When the other’s reality becomes a real possibility for me, I care” (p. 14). The third component of care is *Recognition*, which requires “perception by the cared-for of an attitude of caring on the part of the one-caring” (p. 68). “Does this mean that I cannot be said to care for X if X does not recognize my caring? In the fullest sense, I think we have to accept this result” (p. 68). “Caring involves two parties: the one-caring and the cared-for. It is complete when it is fulfilled in both” (p. 68). For the sake of this study and as an attribute of my personal conception of caring, I used Noddings’ definition of care; that is, to have a caring relationship all three conditions – engrossment, motivational displacement, and recognition – must be present.

Though Noddings’ ethic of care gained notoriety throughout the 1980’s and 1990’s, there are critics of her model. One example is a critique by Patterson, Gordon, and Price (2008) who contend Noddings’ model of the mother-child assumes colorblindness even as it posits a White conception of motherhood (and caring) as the standard. The central prototype of the mother-child relationship is present throughout her texts (Noddings, 1984). The problem, as Patterson, Gordon, and Price (2008) saw it with Noddings’ ethic of care, is the example of the ideal caring relationship throughout Noddings’ argument was one of an essentialized relationship between a white mother and child. In addition, according to Patterson et al. (2008), the assumption inherent

in their argument was one that caring consists of a myriad of individually caring interactions and that the community in which these acts take place is politically neutral. This is in contrast to African-American teachers having “a deep sense of responsibility for all children entrusted to them to educate” (Patterson et al., 2008, p. 109). The classrooms of African-American teachers generally entailed a strict disciplined approach in the classroom with high academic and behavioral expectations, as well as a deep communal sense of responsibility (Patterson et al., 2008). However, more than any other one aspect of critique of Noddings’ descriptions of care is that race can be claimed and even central to the lives of the students, teachers, and the greater community (Patterson et al., 2008).

Noddings’ Ethic of Care. As stated earlier, the ethic of care consists of four components: modeling, dialogue, practice, and confirmation (Noddings, 1984, 2002, 2005).

Modeling. The ethic of care entails placing the student before the curriculum (Noddings, 1984, 2002, 2005). Modeling an ethic of care is relational at its core, and rooted in treating others with dignity. Teachers can too often turn to meanness, coercion, and sarcasm to obtain students’ compliance. Ironically, this can even happen in trying to convince students to care for each other. More important than telling students to behave a certain way, teachers can show students how to respond to one another (Noddings, 2005). Even as students may not be quite mature enough to care for others, teachers should model caring. Students must first see what caring looks like in action if we expect them to emulate such behavior. They are becoming more mature and more able to care for each other as the school year progresses, and as they mature, they become more able to care for others. Teachers, as they mold a caring environment in the classroom, should be explicit in explaining their actions, and why these actions are so important to the caring process.

Roache and Lewis (2011) discussed how teachers managed classrooms that were not coercive and instead emphasized relationships built on trust and shared responsibility. “How a teacher interprets the mathematical thinking of her students has a significant influence on the degree to which the teacher can care mathematically for the students’ ongoing interaction with them” (Hackenberg, 2010b, p. 239). Hackenberg (2010b) described the mathematically caring interaction as one that took into account the student’s mathematical ability as well as the emotional state of the student throughout the interaction. Sometimes the student needed a prodding or the student needed a break. All of which depended on the body language and the verbal expressions of the student as the teacher engaged her in a mathematical activity. This cognitive decentering on the part of the teacher not only helps establish a relationship with students, but also models the type of understanding that is necessary for students to create healthy relationships both inside and outside the classroom. Verdugo and Flores (2007) stated “there should be a focus on building community ... where adults care about and respect students, and yet hold students to high standards” (p. 186).

Patterson et al. (2008) described how many of the African American teachers took on the role as surrogate parents to students. The teachers were engrossed in the lives of the students. These teachers engaged the students in more than schoolwork while holding them to high academic standards. This type of modeling of caring and community building exemplifies what it means to model caring, and it begins with the teacher and her/his caring inside and outside the classroom.

Dialogue. With the active modeling of care demonstrated by the teacher, the teacher and students also grow in relationship through rich, open, honest dialogue. This type of dialogue presupposes a growing together of people and is supported by and helps to support an ethic of

care in the classroom. “Dialogue cannot exist, however, in the absence of a profound love for the world and for people” (Freire, 1970, p. 89). For an ethic of care to be firmly established, a genuine openness of dialogue must exist in the classroom. There must be an equalizing of the power dynamic between teacher and student, resulting in a liberation of both people in the classroom (Freire, 1970; Noddings, 1984). Teachers of students with a history of struggles in mathematics must have justification for the relevance of the mathematics topics they discuss. Openness allows students to become a part of the lesson. The expression of frustration is an action in the classroom discourse. It is relevant. It is legitimate. Teachers should create spaces where students can challenge the traditional discourse in a mathematics classroom – one in which there is direct instruction and little dialogue. This newly created space has the potential to reengage students (Brantlinger, 2014; Freire, 1970). Through dialogue, teachers and students seek to understand each other, and thus care for each other.

Cabral (2004) described an example of the fluidity of the teacher/student labels. During a student help session – an office hours type session – one “student” explains his frustration at not being able to fully grasp a mathematical analysis problem; namely, that “every interior point of a subset of \mathbb{R} is an accumulation point” (p. 148). As the student teaches, the teacher is engrossed in understanding. This engrossment was not condescending, but authentic in that the teacher wanted to understand the instruction of the student. There was no pretense of trying to figure out the mistaken reasoning of the student. There was an assumption that the student’s reasoning was complete, despite the student mentioning that he knew what the teacher wanted him to say, but that he did not fully understand why the expected response was true. This type of relationship nourishes the depth of understanding necessary for rich dialogue that seeks to understand the student both academically and emotionally. Dialogue has a democratizing effect in the

classroom (Freire, 1970; Noddings, 2005). Through deep, rich dialogue in the classroom, the roles of teacher and student are dependent on the situation. This type of engrossment as described by Noddings (1984) leads to an “authentic education not carried on by ‘A’ for ‘B’ or by ‘A’ about ‘B,’ but rather by ‘A’ with ‘B’” (Freire, 1970, p. 93). “Only through dialogue can one become aware of the perceptions, feelings, and attitudes of others and interpret their meanings and intent” (Crotty, 1998, p.75). The dialogue is the avenue through which caring is nourished and supported. The growth of caring depends on an openness of dialogue in the classroom. Adler (2002) found “initiating explicit and open dialogue with students about care may be the first step in the establishment and conversation of caring student-teacher relationships” (p. 263).

Not only does a caring environment take root as open dialogue flourishes in the classroom, but so does the depth of content learning. Teachers create a healthy community of learners in the classroom using dialogue. Shulman (2000) stated, “learning is mainly talking” (p. 133). It is through dialogue that students learn. “Learning rather than being solely individual . . . is actually *social* [emphasis by author]” (Lieberman & Pointer Mace, 2008, p. 227). The call for establishing caring relationships in schools abounds. However, specific to mathematics instruction, Neyland (2004) professed, “Mathematical ideas reside in the dialogical space between structure and creativity; between proof and refutation” (p. 70). The space between the formal mathematics and heuristic modeling is where teachers help to foster good mathematical intuition and comfort with the mathematics. A space of healthy conversation and mutual interests is ideal if students are going to establish an educational space where there is optimal potential success.

Practice. Where dialogue is the scaffolding through which teachers establish an ethic of care in the classroom, practice in caring is how the ethic of care is nourished. All disciplines involve some form of practice. Teachers have myriad opportunities during the school day for students to practice caring for one another. “If we decide that capacity to care is as much a mark of personhood as reason or rationality, then we will want to find ways to increase the capacity” (Noddings, 2005). Just as in a mathematics classroom, we value practice in doing mathematics, teachers who value caring as a foundational ethic have students practice care.

As teachers are micro-managed in ways that de-skill the teaching profession through scripted curriculum and mandated testing, the emotional nourishment and academic growth of students is at risk (Apple, 1986; Noddings, 1984, 2002, 2005). Systemic changes are inundating educators with elements of a prescribed ethical belief system in which bureaucracy trumps humanity resulting in a climate in the classroom counter to the core of the ethical belief system. When a teacher creates a classroom atmosphere where an ethic of care is foundational, the lessons of the “multiplicity of human talents and abilities” are fostered (Noddings, 1984, p. 189). Teachers teach students to appreciate caring solely for its humanizing effects.

Teachers nurture spaces where students typically engage in caring practices, and where students help each other. Teachers nurture spaces where students loan other students lunch money because one student left his lunch money on his nightstand, a space where students help each other pick up spilled notebooks, and a place where students help each other better understand the concepts under study. Modeling of care by teachers and students has a potential for the “enhancement of the ethical ideal, of the sense of relatedness, of renewed commitment to receptivity” (Noddings, 1984 p. 190). Practice in care giving comes when teachers help to provide opportunities for students to care for each other.

Confirmation. Modeling, dialogue, and practice are all necessary if teachers are to create an ethic of care in the classroom. The act of confirmation by the teacher tells the student that s/he is valued as a person first. “Confirmation lifts us toward our vision of a better self” (Noddings, 2005, p. 25). Confirmation is the teacher letting the student know she is valued, loved, and appreciated not because of her grade in the class, not because of how well behaved she is, not because of her performance on any given day, but because she is a person who is an important part of the community in the classroom. This underlying valuation and appreciation for the other allows teachers to address inappropriate behavior of students in a way that helps the student maintain respect and dignity. “It will be clear that we disapprove of this particular act, but it will also be clear to the other that we see a self that is better than this act” (Noddings, 2005, p. 25). Acts of confirmation are not formulaic. The relationship between the student and teacher must be strong enough for the difficult conversations yet still establish an overall sense of harmony in the room.

Noddings (1984) described the most difficult obstacle to attaining confirmation as the current methods of grading. When a caring teacher must grade the student, the role must drastically switch from the student as a subject of care to the one evaluating where the student becomes an object of achievement. Grading puts the relationship – which is the core of the ethic of care – in danger.

Noddings (1984) contended that once a teacher begins to enact the attributes of the ethic of care, many of the mainstays of modern education become obsolete. Teachers – and teacher education programs – no longer have to focus on discipline and classroom management. Students then stop being objects of manipulation and coercion and begin to become subjects of care. So much of the contention teachers and students experience on a daily basis depends on

how we as educators interact with our students and the relationships we build. That is, how teachers show students we care for them.

As teachers confirm and care for students in the classroom on a personal basis, the potential for increased learning only grows. Teachers' notions of personal confirmation, identity, and ability can tangle in ways that make the neglect of emphasizing caring for students a moral act of omission (Noddings, 1984, 2005).

Ethic of Care in Research

There are several studies that use Noddings' (1984, 2002, 2005) ethic of care as a conceptual framework. In this section, I will discuss the key points in each of the studies, as well as summarize and discuss how my study is similar, yet fills gaps in the research on high school students' experiences with caring instruction and mathematical struggles.

Wentzel (1997) examined 248 sixth and eighth graders to better understand how students' perceptions of teacher care motivated their academic achievement. The study operated under the assumption that caring attributes could be framed using a modified version of Noddings' four components ethic of care. Wentzel's framework consisted of 1) teacher modeling, 2) democratic dialogue, and 3) encouraging and challenging expectations in the classroom. The methods in this study consisted of surveys implemented during the school day where students ranked attributes of care. Of four categories – modeling, democratic communication styles, expectations for behavior, and nurturance – the strongest descriptors students used to describe teacher care (in order from most strong to least strong) were modeling of care by the teacher, democratic interactions in the classroom between students and teacher, individualized teacher expectations based on the student, and feelings of being nurtured by the students.

Another study that used ethic of care (Noddings, 1984,2002, 2005) was a study conducted by Hayes et al. (1994) that examined behaviors through which caring was exemplified according to the perceptions of 208 sixth grade students. The students, as in Wentzel's (1997) study, took the survey during the school day. The five most common descriptions of caring behaviors by the teacher fell under the following categories: 1) responded to the student individually, 2) helped students with academic work, 3) encouraged success and gave positive feedback, 4) provided good subject content and lessons, and 5) exhibited humor. The study called for research at the high school level that could potentially differentiate between the middle and high school students due the vast degree to which students mature between the end of middle school and the beginning of high school.

Where Wentzel (1997) and Hayes et al. (1994) categorized attributes of care, Muller (2001) examined similar attributes of caring in the student-teacher relationship to see if there is a correlation between caring attributes as described by the students and academic achievement. The participants were 24,599 eighth-grade students who were participants in the National Education Longitudinal Study (NELS) of 1988-1992. These participants took a battery of achievement tests in the core subject areas and reading. Researchers followed up with each of the participants in 10th and 12th grades and teachers gave a profile of each student. The students in each were administered another battery of achievement tests in 10th grade and 12th grade. Muller called attention to Noddings' definition of care as implying (necessitating) reciprocity. That is, as discussed previously in this section, caring is not complete unless teachers put forth an effort to understand the student (*engrossment* and *motivational displacement*) as well as the student must recognize and reciprocate with caring (*recognition*) towards the teacher (Noddings, 1984). Muller (2001) found that students showed increased effort in the classroom when there

was a perception of care for the student by the teacher, especially where “at-risk” students are involved. Muller (2001) defined “at risk” in her study as the teacher found the student “at risk of dropping out of high school” (p. 252). In addition, the study showed there is a direct positive relationship between student effort and mathematics achievement.

Hackenberg (2010a, 2010b) studied caring mathematics relationships between teachers and four 6th grade middle school students. She blended a construct of caring relationships (Noddings, 1984) with that of Ryan and Frederick’s (1997) construct of *subjective vitality* to explore her interactions with the four students as she worked with them one-on-one. She and the student would work problems going back-and-forth where she would give feedback, the student would work, then ask questions, then take the feedback from the teacher, then work some more. Hackenberg (2010b) defined a caring mathematical relationship to be “a quality of interaction between a student and a teacher that conjoins affective and cognitive realms of process of aiming for mathematical learning” (p. 237). Employing this grounded study, Hackenberg (2010a, 2010b) found that the teacher-student relationship grew as there were challenges met through interaction. Participants in the study worked individually on a problem. Hackenberg checked up on the students and paid attention to the work levels and emotional state of the students. The struggle invigorated some students, and shutdown others. Hackenberg, through growing in relationship and rich dialogue – engrossment, motivational displacement – began to understand the students and how they were feeling as they worked through the problems. A comment that encouraged one student would cause another student to disengage from the problem. Hackenberg (2010a, 2010b) found that the recognition of care necessary in Noddings (1984) definition of care was key to the mathematically caring relationship.

Each of these studies used Noddings' (1984) notions of care and her ethic of care as an assumption within the study. The researchers either operated under these assumptions of care in framing the language of interaction or used the ethic of care as a framework in developing the survey questions. In this study, the narratives of caring mathematics instruction do not necessarily operate within or beside a framework. I think of Noddings' ethic of care as the most substantial conceptualization of care I have been able to discover especially in the realm of educational research. Thus, its relevance to this study is that it resonates with my experiences of caring in the classroom. Although I use Noddings' ethic of care to help the reader better understand research on caring instruction, ultimately the stories of caring instruction and mathematical struggles told by the students is the purpose of this study. Noddings (1984) recognizes that her ethic of care is unprincipled in that it is essentially relational at its core; and thus not a theory-centered construct, but a relational-construct.

Wherever there is principle, there is implied its exception and, too often, principles function to separate us from each other. We may become dangerously self-righteous when we perceive ourselves as holding a precious principle not held by the other. The other may then be devalued and treated 'differently'. Our ethic of care will not permit this to happen. (Noddings, 1984, p. 5)

Thus, the stories of students' experiences with caring instruction will ultimately deviate from my understanding. This deviation upholds the integrity of my understanding of the ethic of care as well as the integrity of the narrative inquiry approach to understanding experiences.

Caring and Mathematics Instruction

As was previously argued in chapter one, mathematics instruction in many ways determines social access. There is no more powerful an educational indicator of social access

and social mobility than the acquisition of mathematical knowledge (Schoenfeld, 2004/2008). Mathematics achievement in middle school and high school is the most important determinant of school completion (Bowers, Sprott, & Taff, 2012). The assumption that mathematics education is a politically neutral and universally accessible content area undermines the reality that mathematics is a gatekeeper subject in high school:

Attaining equitable access to mathematical achievement has been a persistent challenge for many education communities. Students can find learning mathematics challenging, and caring, trusting relationships between participants in education focused on enhancing learning offer a sound pathway towards maximizing motivation and achievement.

(Averill, 2012, p. 123)

Students must be able to feel as though there is room in their personal identities for mathematics, and they must see themselves as part of the mathematical world (Gutstein, 2012; Moses & Cobb, 2002; Stinson, 2004). Issues of equity and student access are currently gaining attention in mathematics education circles (Gutierrez, 2013). As mathematics teachers, access to mathematics education requires a shift from the objects of learning themselves to the processes and relationships of change contained within the learning of mathematics (Fleener, 2004; Noddings, 1984). It is not enough in the 21st Century for students to learn 200-year-old algorithms, but there is currently a push for using mathematics to critically examine the world and even transform the world into a more just place. Teaching with an emphasis on social justice allows mathematics teachers to address the current patterns of inequity in mathematics education that shuts out students of color and students of low socioeconomic status in the U.S. at disproportionate rates (Darling-Hammond, 2010; Gutierrez, 2013; Gutstein, 2012). Explicitly teaching for social justice opens up spaces for teachers to challenge the contradictory and

detrimental beliefs about who should have access to mathematics education, who is able to do mathematics, and how mathematics should be taught (Fleener, 2004). As Hardy (2004) stated so succinctly, “I have argued that it is important that mathematics education researchers become aware of why the process of learning school mathematics has the effect it does on groups of our children” (p. 115). Regardless of the answer, mathematics education acts as gatekeeper for far too many young adults in the United States trying to transition into the realm of adulthood, and we as mathematics teachers should work to empower students through our mathematics instruction (Stinson, 2004).

Given the aforementioned importance of mathematics education due to its social status as a gatekeeping privilege, how does caring relate to mathematics education and who are the students most in need of this care? Throughout the remainder of this chapter, the following questions will guide my thinking. 1) How does the concept of caring apply to the mathematics classroom, and 2) what are students’ experiences of care in mathematics classrooms?

Concept of Caring in the Mathematics Classroom. Students who perceive their teachers as caring put forth more academic effort (Fast et al., 2010; Hackenberg, 2010a, 2010b; Wentzel, 1997; Wolters, 2004). Academic effort is a factor strongly related to academic achievement (Muller, 2001; Wentzel, 1997). Muller (2001) stated, “At-risk [of dropping out] students do put forth more effort when teachers care about students” (p. 252). The teachers’ ability to connect with students in authentic ways – especially in the mathematics classroom – is key to developing a warm classroom climate. “Caring happens when children sense that adults in their lives think they are important and when they understand that they will be accepted and respected, regardless of any particular talents they have” (Elias et al., 1997, p. 6). The image of the student as a

person and whole-being and not just student as learner and taker of assessments is at the core of Noddings' (1984, 2002, 2005) ethic of care. Ernest (1998) called on mathematicians:

What is now needed, I wish to claim, is an ethics of mathematics, one that acknowledges the social responsibility of mathematics and how it is implicated in the great issues of freedom, justice, trust, and fellowship. It is not that this needs follows *logically* from social constructivism: It follows *morally*. (p. 275)

Once again, it is no longer enough for students to learn discrete concepts without a sense of how they are applied – even if cursory – to the world in transformative ways. In the 21st Century, students have the ability to learn skills in various ways using digital technology. This frees the teacher to engage the student in ways that are critical and transformative (Noddings, 2013). This also frees the teacher to create a collaborative and critical environment in the classroom where an ethic of care (Noddings, 1984) is firmly established. This image of the classroom is in stark contrast to the reality for most students in mathematics classrooms. The danger is a moral disconnect for students as they navigate the cold and austere landscape that is a reality in many mathematics classrooms. Ernest (2004) described the prototypical experience for most students in mathematics courses: “The situation invites a paradox ... mathematics is very clear and reasonable, yet when the reasoning is not understood it becomes the most irrational and authoritarian of subjects” (p. 27). Mathematics educators, by taking on a more socioconstructivist manner of understanding of mathematics – educationally and philosophically – can generate a greater sense of dialogic construction of mathematics in the classroom (Ernest, 1998). The historical development of mathematics is one deeply rooted in dialogue. Mathematicians – just as in any field of study – argued with one another. However,

unfortunately very few students learn mathematics in a way that would suggest that mathematics, just as any field of study, developed throughout history in dialogue.

Although mathematics is claimed to be at root conversational, it is also the discipline, more than any other, which hides its dialogical nature under its monological appearance, and has hidden the traces of multiple voices and of human authorship behind a rhetoric of objectivity and impersonality. (Ernest, 2004, p. 27)

Treating mathematics education as a more dialogic exercise in sense making as opposed to a monologic exercise in note-taking production allows for a personal touch. This gives the teacher a potential to tap into the dialogic component of Noddings' (1984) ethic of care as described in previous sections. This also allows the teacher to trouble the notion of mathematics as monologic and fixed. Too often, the assumption is that mathematics is Platonic. That is, that it fell from the heavens in perfect form. This idea of mathematics as being pure and immutable could not be further from the conception most mathematicians have of mathematics (Davis & Hersh, 1981; Ernest, 2004). The dialogic nature of mathematical development disrupts the notion of a mathematics classroom as being cold and monologic, and reimages mathematics classrooms as warm, interactive spaces of academic and moral growth.

Students' Experiences with Mathematical Struggles. Throughout the crafting of my research question, I struggled greatly with how to describe the students under study. How do I characterize students who struggle in mathematics, especially at the high school level? In essence, I want to study students who self-identify as having struggled in mathematics classes in the past. I do not want to limit with labels the students in my study by calling them "at-risk," "low achieving", or "students with learning disabilities", though students who fit this description tend to have a history of academic struggles in mathematics (Barbieri & Booth, 2016; Butler,

Beckingham, & Lauscher, 2005; Garderen, Scheuermann, Jackson, & Hampton, 2009; Johannessen, 2004).

During the recruitment process, by simply asking “have you experienced struggles in a mathematics classroom in grades 7 – 9?” I was able to focus in on the experience, and not the label as an identity marker. By not labeling the students in the study as students with a history of academic struggles in mathematics, I avoided the risk of reifying an identity many of the students with said history have. That is, I am attempting to avoid rendering a student as having a fixed identity of not being a “math person.” I want to avoid a false and unnecessary duality. Many times as educators, we use a label to describe a student, and we inadvertently define the student as though they are not in the process of becoming. Instead, the label presents the student’s identity as unchangeable (Hardy, 2004).

Though there is no way to generalize what it means to struggle mathematically, there are groups of students who have been historically “subordinated individuals and communities” (Gutierrez, 2013, 39). There is a matter of equity when it comes to groups of students not having access to high quality mathematics instruction. Though the everyday use of “equitable” means to be *just* or *fair*, I will employ the definition used by Gutierrez, which not only describes the notion of equity, but it defines it in a way that lets us know when it has been achieved. Gutierrez (2007) described the notion of equity with respect to mathematics education as the inability “to predict students’ mathematics achievement and participation based solely upon characteristics of race, class, ethnicity, gender, beliefs, and proficiency in the dominant language” (p. 41). Currently, students who attend schools that serve historically minoritized groups or socioeconomically depressed students are more likely to receive mathematics education from a teacher who is not certified or who has less experience (Darling-Hammonds, 2010). This has

terrible social implications given “in the United States, race, class, and educational opportunity are so fully entangled” (Darling-Hammond, 2010, p. 101). These schools tend to adopt curricular materials that are more programmatic and scripted leading to “more homogenized, less dialogic and thus impoverished discourse in schools” (Lysaker, 2012, p. 16). Inexperienced, unqualified teachers tend to employ this formulaic approach to teaching, resulting in the perpetuation of the “current cultural norms that marginalize whole populations of less privileged learners” (p. 16). More than school buildings and lack of books and computers, teacher quality is the “most inequitably distributed school resource” in the United States (Darling-Hammond, 2010, p. 40). A teacher with at least three years of experience, education (both in field and in education) from a competitive institution, high licensure test scores, as well as National Board Certified credentials has a stronger effect than any one single “out-of-the-school” factor (Darling-Hammond, 2010).

Just as teacher certification is an issue in schools where the majority of students are low-income or students of color, so are teacher dispositions that lead to greater student achievement. Many educators are not fully prepared to meet the needs of students, especially students who are ethnically different from themselves (Gay, 2002; Prime & Miranda, 2006/2008). Too often instructional strategies lack teacher imagination and high expectations, and are steeped in a seemingly “benign neglect” (Prime & Miranda, 2006/2008). “Whether stereotypical or not, teachers’ views about their students are likely to be powerful determinants of their instructional decisions and of the kinds of social climate they create in their classrooms” (Prime & Miranda, 2006/2008, p. 265).

When studying the well-being of students, and emphasizing the importance of care, there is no way a teacher can be politically neutral. “The purpose of education, from a societal

perspective, is to maintain the status quo, whatever that might be” (Gutstein, 2012, p. 70). This statement challenged me. It found me reflecting on my practice, and on this study. I was reluctant from the beginning of the study to engage urban education issues of equity and social justice. I did not want to be a proverbial carpetbagger, discussing students of color in exploitative, deficit ways for the sake of my research. As Gutierrez (2013) stated, “Many mathematics education researchers are complicit in the practice of constructing brown and black bodies in a deficit and overly simplistic manner” (p. 45). I wanted to avoid the essentialization of students in ways – though well meaning – inadvertently and “unknowingly rely upon distilled versions of culture or background” (p. 51). With respect to fixing culture and race, essentialization: “Unfortunately, the most lasting frameworks of asset pedagogies ... have too often been enacted by teachers and researchers in static ways that focus solely on the important ways racial and ethnic difference was enacted in the past without attending to the dynamic enactments of our equally important present or future” (Paris & Alim, 2014, pp. 91-92). However, not to discuss the inherent political nature of mathematics education is to perpetuate the status quo in mathematics education, which is one of inequity.

Gutierrez (2013) asked “in what way(s) are mathematics education researchers and educators complicit in the institutional practices that perpetuate inequities and unnecessarily constrict the identities that learners and teachers are able to enact around mathematics?” (p. 61). Once we as teachers are convinced of the deeply political nature of mathematics education, there is still the pressure to teach the content in a seemingly politically neutral nature. Though “we are at a moment in history when it is both very easy and very hard to attend to identity and power issues in society ... focusing on issues of identity and power do not easily translate into large-scale policy recommendations or prescriptions for practices in the classroom” (Gutierrez, p. 37).

There are models of how we might use sociopolitical discourse in the mathematics classroom (Gutstein, 2012), but despite these models, there is still much resistance from students, parents, and administrators. As mathematics teachers, we must justify deviating from traditional mathematics classrooms that are assumed to be politically neutral and stripped of any sociohistorical context. “Resistance to the sociopolitical turn is hegemony” (Gutierrez, 2013, p. 57). Would teaching mathematics that includes sociohistorical and sociopolitical attributes be watering down the curriculum? Would I be teaching the students less? Would the students be ready for the standardized test? How would I justify this “new” form of teaching mathematics to colleagues, administrators, and parents who do not consider these topics and conversations mathematics? These are all questions with which mathematics teachers must concern themselves. Despite the counter made by Gutierrez (2013), “we are fooling ourselves if we believe that schooling is the main vehicle by which people learn (mathematics)” (p. 60), there is still a genuine fear teachers have of not being in complete control of the content being discussed and practiced in the classroom. What if high school mathematics teachers replaced the fear they have of their students not faring well on a standardized test due to teacher effectiveness measures with the fear of not being able to meet the needs of our students? “The field of mathematics education must also be prepared to support educators to position themselves in their work (e.g., tying their fate to the fate of their students) thereby broadening their goals to include student actualization” (Gutierrez, 2013, p. 61). Teachers can be both concerned with the becoming of students as moral beings and concerned with how well they do on an exit exam.

Gaps in the Literature

Several studies explicitly call for more qualitative methods of inquiry into questions of student perceptions of caring in the classroom (Lewis et al., 2012; Wentzel, 1997). Many of the

studies began with an assumed understanding of caring. Lewis et al. (2012) asked, “Is it possible to capture quality of interpersonal relations using items on a survey?” and followed up with, “Admittedly, teachers show concern in ways that we did not measure” (p. 23). Other studies called for qualitative methods of inquiry into student perceptions of care tacitly through the discussion of implications for future research (Hackenberg, 2010a; Hayes et al., 1994; Muller, 2001). Though the more implicit calls tended to call for the need to understand structures that lend themselves to teacher caring, I hope to glean these types of attributes from the stories of the students in this study. Muller (2001) stated future research should try “to understand the kinds of structures that might foster and support important social capital in the teacher-student relationship” (p. 254). How can we as educators create spaces in the classroom where students feel cared for?

Along with calls for studies with a more qualitative nature to understand student perceptions of care, there was also a call for studies at the high school level aimed at better understanding student perceptions of care (Hayes et al., 1994).

Conclusion

The importance of caring has been established both academically and ethically. Caring is at the core of any educational endeavor (Hackenberg, 2010a; Hayes et al., 1994; Noddings, 1984, 2002, 2005). The literature is clear about the importance of caring throughout schooling as well as its importance in mathematical instruction. The gap in the educational research – not just between students’ and teachers’ understandings of what it means to be caring – is the high school student’s voice as it relates to what it means to be cared for. Noddings (1984) stated over 30 years ago:

Consider a situation familiar to educators. Students in a given high school say that they want their teachers to care for them, but ‘nobody cares.’ Their teachers make a convincing case that they *do* care (in the virtue sense); they work hard and want their students to succeed. (xxii)

According to Noddings’ (1984) definition of care, caring is not complete unless the student recognizes the care initiated by the teacher. If teachers are to build caring relationships with students, they must have a better gauge as to how students perceive their instruction as it relates to care. Where the purpose of this study is to listen to high school students’ stories of caring instruction and mathematical struggles, it is important that teachers understand students’ perceptions of care to build better relationships with students in the classroom.

CHAPTER 3

METHODOLOGY

Introduction

Students with a history of academic struggles in mathematics benefit both academically and socially from having a caring mathematics teacher (Dever & Karabenik, 2011; Muller, 2001). Students show greater gains in mathematical achievement and become more caring themselves in a mathematics classroom when the teacher establishes an ethic of care (Noddings, 1984). The purpose of this study is to tell the stories of three 11th-grade students' experiences with caring instruction and mathematical struggles. The research question that guided this study is: What are three high school students' stories of caring instruction and mathematical struggles?

In this chapter, I will discuss (1) research design, (2) justification for narrative inquiry, (3) research site, (4) participant selection, (5) data collection, (6) data analysis, (7) quality of the study, (8) study limitations, and (9) a summary.

Research Design

In this study, I engaged in a narrative inquiry with high school students who have experiences with caring instruction and mathematical struggles. In this study, student voices are heard. The epistemological assumption in this study is that *truth* is socially constructed through interactions with others. "When we narrate something, even in telling our very own story, it is (again in the normal course of events) the voice of our culture – its many voices, in fact – that is heard in what we say" (Crotty, 1998, p. 64). There is no extracting the meaning of the experiences of students with caring mathematics instruction from the social context. The voices of students were steeped in culture and context as the stories were constructed via narrative inquiry. The nature of knowledge through the lens of social constructionism is one of

construction, not of discovery. “Rather than starting with a theory (as in postpositivism), inquirers generate or inductively develop a theory or pattern of meaning” (Creswell, 2013, p. 25). I co-created stories through my conversations with participants. Dewey’s (1938) theory on education as experience situates the relational and experiential components of the study. Clandinin’s (2013) model of narrative inquiry lives into this relational and experiential space and aligns with Noddings’ (1984) notion of care in that it recognizes the students voices (the third component of Noddings’ notion of care) while also confirming the students as people first (the fourth component of Noddings’ ethic of care).

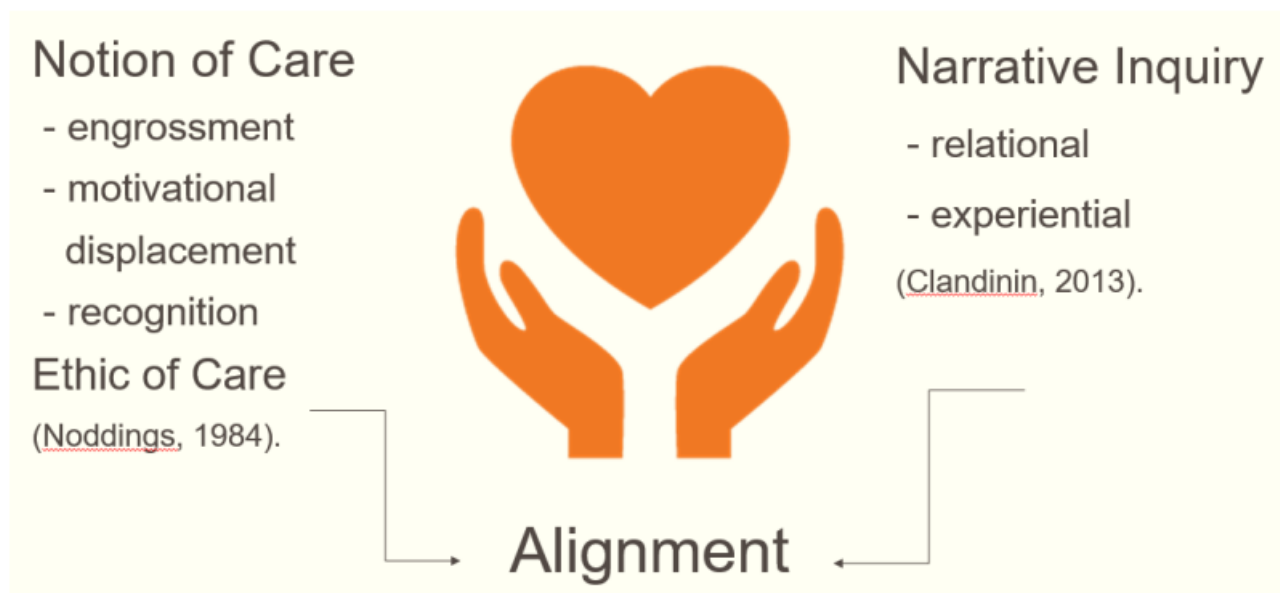


Figure 1. Alignment between Clandinin’s (2013) Narrative Inquiry and Noddings’ (1984) Theory of care.

Theoretical Framework: Deweyan Experience. The purpose of this study is to better understand student perceptions of care through the use of stories. These stories are understood and transformational in the educational space as they model what it means to be in community. These stories value yet transcend the individual. Hohr (2013) stated, “While the ongoing political discourse advocates knowledge as the property and commodity of the individual consumer ... Dewey underlines the importance of the cultural and societal aspects of education” (p. 26). At the risk of oversimplification and bastardization of the concept of experience as it relates to education, Dewey (1938) used the term experience in at least two ways. One consists of the everyday use of the term; a happening, a momentary situation. The more complex usage of the term, however, is one that is similar to our use of the term culture (Crotty, 1998; Seaman & Nelsen, 2011). This usage is one of cumulative lived experiences that are contingent on place, time, and social context (Clandinin, 2013). I will discuss these three attributes as the primary components of Deweyan experience in the next section as these three attributes are the foundation for narrative inquiry (Clandinin, 2013). This more complex definition of experience, especially as it relates to education, is one of “a communicative, historic, and cultural phenomenon rather than an individual or mental one” (Hohr, 2013, pp. 25-26). Throughout this study, experience is one of cumulative lived experiences, and the goal of narrative inquiry is the intersection of experiences of participants and researchers.

Dewey (1938) argued his conceptualization of experience in terms of duality; mature/immature, progressive/traditional education, coercion/freedom, inner/outer forces, etc. The discernment of what makes an experience conducive to education is measured along a continuum through the individual’s growth; physically, intellectually, and morally. Along this continuum “every experience affects for better or worse the attitudes which help decide the

quality of further experiences, by setting up certain preference and aversion, and making it easier or harder to act for this or that end” (Dewey, 1938, p. 37). Experiences are situated in time, place, and social interaction. These three attributes of experience are irrevocably intertwined.

Research Methodology: Narrative Inquiry. Narrative inquiry is the study of experiences of a phenomenon as told through stories. “Narrative inquiry is an approach to the study of human lives conceived as a way of honoring lived experiences as a source of important knowledge and understanding” (Clandinin, 2013, p. 17). Narrative inquiry – to be fully disentangled from the more generic term narrative or narrative study – is concerned with experience and is grounded in Dewey’s concept of educational experience (Clandinin, 2013). Narrative inquiry exhorts “experience as a storied phenomenon” (Clandinin, Murphy, Huber, & Orr, 2009, p. 82). Dewey’s understanding and usage of the terms *culture* and *experience* were synonymous (Crotty, 1998, Seaman & Nelson, 2011). Deweyan pragmatism is concerned with understanding of experiences, but also with transformative experiences. Experiences are not enough, but these experiences should improve the chances of positive experiences into the future. A teacher might use coercion and oppressive instructional strategies – threatening negative consequences – to improve quiz results for a given topic, but the ethical cost might be great.

It is not enough to insist upon the necessity of experience, nor even of activity in experience. Everything depends upon the quality of the experience. The quality of any experience has two aspects. There is an immediate aspect of agreeableness or disagreeableness, and there is its influence upon later experiences. (Dewey, 1938, p. 27)

Ontologically speaking, narrative inquiry is “continually working with and from, a transactional or relational” space (Clandinin, 2013, p. 16). The underlying assumption in the narrative inquiry

approach is not one in which stories are simply documented faithfully. The inherent relational centrality of narrative inquiry is that the researcher is committed to the process of storying and restorying with the participant. This space of co-creation between the participant and the researcher allows for a complex co-creation of a story situated in time, space, and culture. The sharing of space and time with the participant and the researcher allows for the bridging of stories of care between teacher and student. Narrative inquiry is transformative for the researcher, the participants, and the reader.

Along with transformation through the narrative inquiry experience, the aspect of teacher voice alone has potential to make the stories more resonant with pre-service teachers and in-service teachers. Preservice teachers are more likely to live into the stories because I – a veteran high school mathematics teacher – am sharing the stories. In addition, a shared experience in the classroom is more likely to resonate with inservice teachers. The fact that I, the researcher, am a 17-year-veteran high school mathematics teacher lends credence to the stories as important for high school mathematics teachers to hear.

Narrative inquiry allows for seemingly divergent aspects of the story. There is no “the” story. Narrative inquiry allows for depth and complexity, which is the relational reality for teachers and students in the classroom. This study gives voice to a marginalized group – high school students who have struggled in mathematics – in a way that seeks to challenge the status quo in high school mathematics classrooms (Chase, 2005).

A goal in this study is for teachers to shrink the gulf between student and teacher perceptions of caring mathematics instruction. The transformation of the image of the mathematics classroom as a space of ethical growth and academic growth is at the heart of this study. The use of narrative inquiry as outlined by Clandinin (2013) assumes these three

attributes necessary in Noddings' (1984) definition of care – *engrossment*, *motivational displacement*, and *recognition*. Recall, the three attributes of care: *engrossment* and *motivational displacement* are exemplified by the teacher, but *recognition* must be on the part of the student. *Engrossment* is thinking about someone to gain a better understanding. It is a mental state of commitment to the other, at times “even suffering” (p. 10). *Motivational displacement* is a realization “that there is invariably this displacement of interest from my own reality to the reality of the other” (p. 14). *Recognition* is “perception by the cared-for of an attitude of caring on the part of the one-caring” (p. 68). These attributes are present throughout the study. “Narrative inquiry is about attending to lives, the living of those lives in process and in the making” (Clandinin, 2013, p. 141). The relational approach to narrative inquiry in this study aligns with Noddings' (1984) definition of care as discussed previously in chapter two.

Along with the narrative inquiry approach to experiential understanding being grounded in the relational elements of ethic of care (Noddings, 1984), the narrative view, according to Clandinin (2013), involves three phenomenological components of time, social interactions, and place. Narrative researchers collectively call these three components *narrative inquiry commonplaces*. The three components are *temporality*, *sociality*, and *place*. Temporality is the focus on the past, present, and future embedded within our stories. Narrative inquirers engage in stories situated in time. The stories participants and researchers tell are about the past, and thus, the lens is temporal. They are constantly in flux. As the participants and the researcher experience caring relationships inside and outside of the classroom, the stories morph. The stories are dependent on the particular time in which they are told. The temporality of the experiences exemplifies the reality of students and teachers growing ethically in relation with each other. Sociality is the culture, language, and institutions in which the narrative inquiry is

situated. The relationship developed during the narrative inquiry between the participant and the researcher is a part of the sociality commonplace (Clandinin, 2013). The social space occupied by the participant and researcher is in tension due to different roles and generational differences between teachers and students. The narrative inquiry entails sharing of stories and both exploring the social tension and the potential space of understanding. Place is the concrete physical locale in which the stories take place. Narrative inquiries are incomplete without an understanding of place. Similarly, narrative inquiries without the two commonplaces of temporality and sociality are incomplete.

As stated earlier, the participants and I co-created stories through the telling of our own stories of caring relationships and experiences in school. Four key terms emerge in the life of a narrative inquiry study: *living*, *telling*, *retelling*, and *reliving* (Clandinin, 2013). “We understand that people *live* out stories and *tell* stories of their living” (Clandinin, 2013, p. 34). As we “come alongside” participants, narrative inquirers converse and live into the lived and told stories. This is *retelling*. *Reliving* is a more difficult concept to explain fully. While narrative inquirers come alongside participants, we do not simply retell stories as recorded through conversation in research reports. Narrative inquirers work within the stories’ co-created meaning through the retelling of stories; and thus, through this relational process the narrative inquirer and the participant co-compose the story. This is *reliving* the story from the view of the narrative inquirer. The co-composition of the stories between participants (students) and the researcher (teacher) has the potential to live into the classrooms of high school mathematics teachers who read the stories.

Justification for Narrative Inquiry

As I examined how high school students with a history of mathematical struggles describe caring instruction especially as it relates to mathematics, I found myself struggling with the question “So what?” In the age of over-simplification, stories are often considered mere anecdotes, not research. I addressed this concern directly and from the outset using three ways of justification for narrative inquiry as: 1) a personal justification, 2) a practical justification, and 3) a social justification (Clandinin, 2013).

Personal Justification. All research is autobiographical. I am not able to write without telling my story. I am a high school mathematics teacher. I found and continue to find refuge and meaning in school. Both of my brothers died at a young age. Both of my brothers dropped out of high school. They both found high school to be a place that was distant and cold: a place that for them was an obstacle to beginning life, a place of stagnation that impeded their growth as individuals, not a space of liberation and connection where they could thrive. My older brother, like my younger brother, received his GED, and then joined the U.S. Army. My older brother worked with computers and needed one course to finish his bachelor’s degree; college algebra. He tried multiple times but never made it through the course. Both of my brothers made comments before they passed away about how they would have finished high school had they had teachers like me. Both of my brothers made comments stating how they wished they had experienced teachers to which they could relate. They wished they had teachers who knew their struggles and aspirations. They wished they had teachers who would take the time to get to know them as more than data points on a spreadsheet.

It was important for me as the narrative inquirer to attend “carefully to how I understand myself in relation to stories of school, and to the stories of who I was as a child in classrooms in

schools” (Clandinin, 2013, p. 36) as well as who my brothers were with respect to school. These stories are told and retold in my mind. For the longest time, as a student then as a teacher I thought students who had similar struggles with school were simply lazy or unmotivated. I thought these students simply made bad decisions. My arrogant assumptions as a student and myopic assumptions as a teacher got in the way of my hearing the students’ stories. Experience has forced me to understand the reality of my brothers’ situations, as with any student, is much more complicated than that. As I lived alongside my participants and co-created meaning as to what caring mathematics instruction looks like, these stories of my lived experience were an essential part of the *reliving* that is central to narrative inquiry. I explore more of my personal experiences in chapter four.

Practical Justification. I began my career as a high school mathematics teacher on a provisional basis. Though my bachelor’s degree is in mathematics, I had no background in teaching and I did not become fully certified as a teacher in the state of Georgia until I had already taught high school mathematics for two years. I had not completed a practicum, nor had I taken part in a student teaching experience. My advising professor built my first two years of teaching into my master’s program as my formal student teaching experience. My student teaching experience consisted of three thirty-minute observations by administrators at my high school and one administrative personnel from the university. Due to these experiences, I was not adequately prepared to be a high school mathematics teacher in my first two years of teaching.

Stories that speak to the importance of caring mathematics instruction that resonate and speak to both preservice and inservice teachers cannot be overstated. Narrative inquiry in the field of education is steeped in Deweyan views on experience and has the potential to address the concerns most preservice teachers face in their future classrooms as well as helping preservice

teachers fight the obstacles that impede the development of caring relationships between student and teacher (Brown, Jones, & Bibby, 2004; Clandinin, 2013). This study has the potential to address the gap in understanding of the nature of care in classrooms between teachers and students by helping teachers experience schooling through the eyes of students. Too often teachers write off students who struggle academically as lazy, non-math people, unwilling to work, lacking grit, or myriad other labels. Once again, the stories challenge the status quo as to the reason for such high numbers of students who struggle with mathematics (Chase, 2005).

Social Justification. Administrators and teachers in the buildings where I have taught have spouted the mantra of “education is relationships” throughout my 17 years as a high school mathematics teacher. In retrospect, I understood this marginally at best during my first two years in the classroom. This understanding slowly grew deeper and more real throughout my next ten years in the classroom. Then, like much of our experiential growth as people, like that of a caterpillar becoming a butterfly, it is slow in coming, but when it comes, it is large and illustrious. The last eight years of my career as a mathematics teacher I have tried to personify this understanding of the importance of student-teacher relationships. The phrase “education is relationships” is now a central truth and reality to who I am as an educator. Along with personal experiences in the classroom, articles and books on education helped me come to the realization of the importance of building relationships with students that extended beyond the content of the course. “We need to think more about who could benefit from, and who needs to hear, our research narratives. Marginalized people in the communities we study? Power brokers and gatekeepers in the communities we study?” (Chase, 2005, pp. 670-671). Chase (2005) spoke to the heart of this study. Too often mathematics teachers act as gatekeepers for students completing high school. Students who struggle in mathematics are in danger of not finishing

school and are thus marginalized in not only being at risk of not graduating high school, but not being in a privileged group of people who “can do” math (Moses & Cobb, 2002). Students’ academic interest and engagement depend on the degree to which students perceive the teachers as caring (Averill, 2010; Eccles, 2004; Dever & Karabenik, 2011; Martin & Dowson, 2009; Muller, 2001; Riconscente, 2014). Thus, for mathematics teachers to help get struggling students back on track academically – and I would argue socially – teachers must engage in explicit relational growth – caring – in the classroom. I aim for the incorporation of an ethic of care (Noddings, 1984) to have a transformative on the student participants in the study. Students who are struggling in high school mathematics are at great risk academically, socially, personally, and economically. Thus, they are worthy of having their stories told.

The issues facing these marginalized groups are of paramount importance to study, issues such as oppression, domination, suppression, alienation, and hegemony. As these issues are studied and exposed, the researchers provide a voice for these participants, raising their consciousness and improving their lives. (Creswell, 2013, p. 26)

Moreover, preservice and inservice teachers hearing and attempting to understand the reality of struggling students have potential for transforming the relational atmosphere in mathematics classrooms. As I stated earlier in this section, the narrative inquirer seeks to engage with the participant in ways that assume *engrossment*, *motivational displacement*, and *recognition*; all three of which are essential to caring in the classroom (Noddings, 1984).

Context of Research Site

All three participants in this study are students at Lakewood High School (pseudonym), an urban/suburban high school in the Southeast. The student demographics during the 2013-2014 school year of Lakewood High School according to a publicly posted Accountability

Report are: total student enrollment is approximately 3000; Asian, 20%; Black/African American, 25%; Hispanic or Latino, 15%; Multiracial, 5%; White, 35%; Special Education, 10%; ESOL, 5%; Free/Reduced Lunch, 40%. The graduation rate during the 2013-2014 school year was 89%. The average SAT score for Lakewood was 1560, which was approximately 50 points above the national average. Average daily attendance was 96% during the 2013-2014 school year.

If this study is going to resonate with teachers across the U.S., the participants in this study must be students that teachers can imagine in their classes. This site is suitable as a research context given that it is racially, culturally, socioeconomically diverse and a true neighborhood public school where the only requirement for enrollment is to live in the district. The site is a convenience sample. I have access to the school daily as a teacher at Lakewood. This allows me to meet with at least one participant each week and build relationships through conversation.

Participant Selection

I used a criterion-based selection strategy to choose my participants to be involved in the research (Roulston, 2010). In my study, it was important that each of the participants have stories to tell of the phenomenon under study (Creswell, 2013). To recruit students for the study, I personally went to five junior teachers' homeroom classes and made announcements about the study. I spoke to roughly 120 students. I briefly described the study and announced that participants must be able to answer "YES" to all three of the following questions:

- 1) Are you interested in sharing stories with me, the researcher, about academic struggles in mathematics and caring mathematics instruction?

2) Would you describe yourself as having struggled in mathematics at any time in grades 7 – 10?

3) Would you describe your relationship with a teacher in your past as being a “caring” relationship?

I gave all students in the room a copy of the three questions, a student assent form, and a parental permission form. If the student answered “YES” to all three questions, they were instructed to return the forms completed and in the provided envelope to the front office at Lakewood High School. After five school days, four students returned the forms. I then contacted these four students to set up our first conversational interview. Qualitative research studies that employ narrative inquiry tend to have one or two participants (Clandinin, 2013; Creswell, 2014). Due to the short timeframe in which I had to conduct the conversations, and as a precaution against the reality that a student might not be able to continue with the study once it begins, I decided to invite all four students to participate. One of the four students who returned the packet decided before our first conversation not to be a part of the study. The study involved three participants.

Data Collection

The narrative inquiry approach involves a multi-phase approach (Clandinin, 2013). The phases in Table 1 consist of both the data collection and the data analysis components. Thus, I will discuss some of the components in this section, and some in the next section. These categories are fluid and both data collection and analysis take place simultaneously throughout the study. However, for the sake of the development of the sections in this chapter, I labeled each of the phases in Table 1 as either *collection* or *analysis*.

Table 1

List of Data Collection and Data Analysis Tools

- Researcher narrative beginnings (collection)
- Initial researcher/participant conversation; Conversation 1 (collection)
- Field text transcription of conversation (collection)
- Establishment of narrative threads (analysis)
- Subsequent researcher/participant conversation; Conversation 2 (collection)
- Construction of annals/chronologies (analysis)
- Researcher drafting of interim research texts (analysis)
- Researcher/participant redrafting of narrative accounts; Conversation 3 (analysis)
- Identification of resonant narrative threads (analysis)

The list of data collection and analysis tools are highly iterative. Figure 1 and Figure 2 show the relationship between and among the different collection and analytic tools.

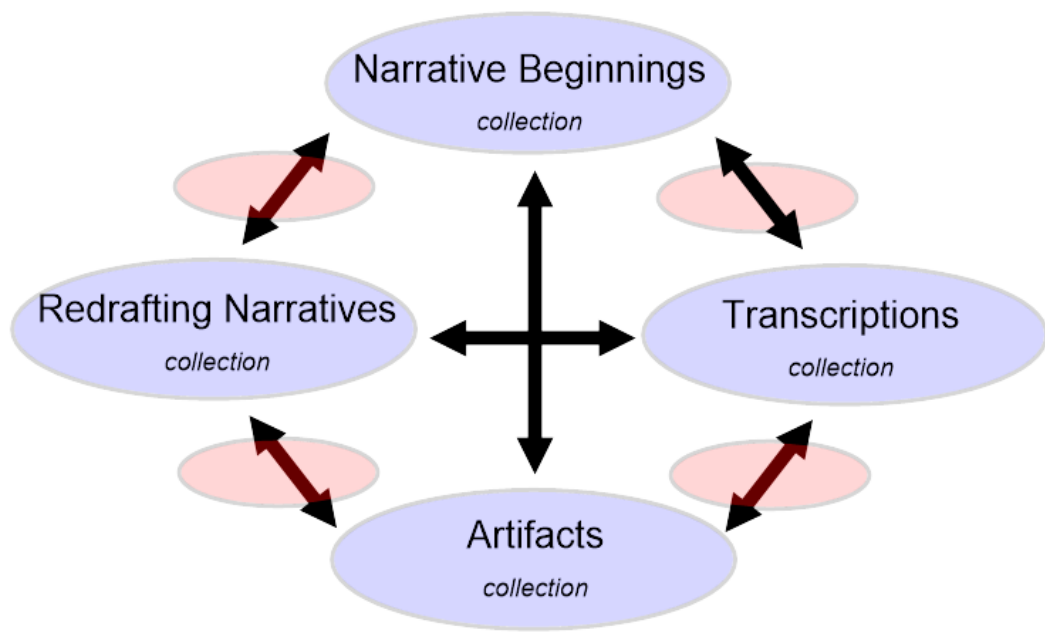


Figure 2. The purple ovals along with the arrows show the iterative relationship between the collection tools. The red ovals embedded in the arrows represent the analysis tools shown in Figure 2, also representing the simultaneous nature of data collection and data analysis.

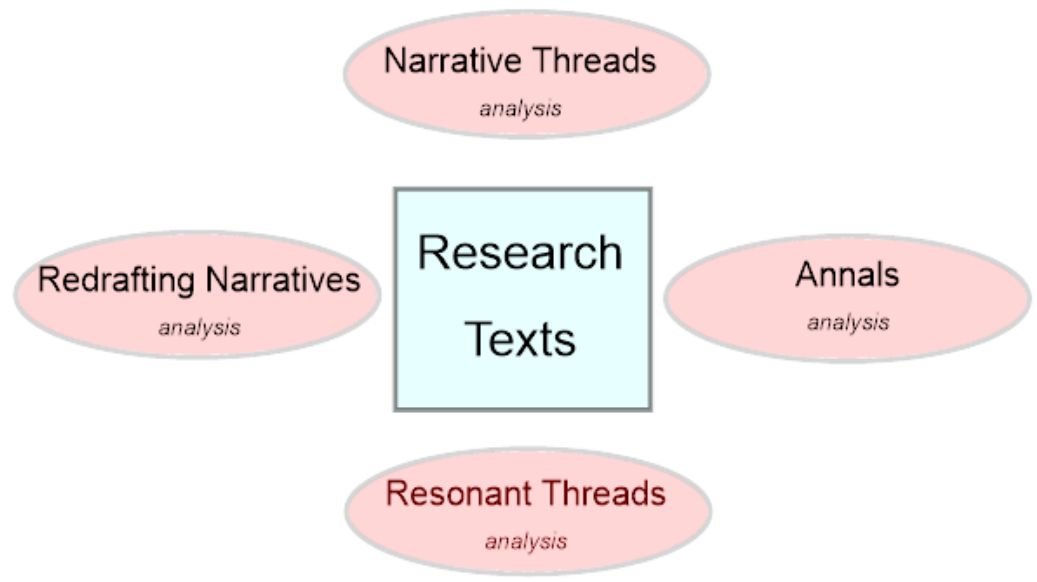


Figure 3. Analysis Tools and the resulting research texts at the center.

Researcher Narrative Beginnings. The written retelling of lived experiences are known as *memory reconstructions*. Narrative inquirers generally refer to research questions as research puzzles. I am not necessarily going to answer the questions in my study as much as I will piece together stories of my life and my participants' lives that are then constructed and re-constructed, just as pieces of a puzzle are re-constructed. My personal accounts of my lived experiences were stories that helped to motivate and inspire the study. Through memory reconstructions, I continued to unpack and shape the “research puzzles and identify key narrative concepts and terms” (Clandinin, 2013, p. 89). Though the narrative researcher generally begins with autobiographical sketches that motivate the nature of the study, the autobiographical investigation into the study takes place at the beginning, intermittently, as well as toward the close of a narrative inquiry study (Clandinin, 2013). Once again, the phases of the study mapped out earlier in this section are just that, phases that overlap and continue to intersect with each other to better understand and share stories of the students' experiences of caring mathematics instruction.

Though the initial autobiographical sketches roughly outlined earlier did not all necessarily end up in the final research texts of this study, the accounts guided the emphasis of my study. I also used these accounts to guide the conversations with the participants. Between each conversation with a participant, I constructed other autobiographical sketches that motivated the ongoing conversations with participants. These intermittent autobiographical sketches also acted as points of tension that I explored in the analysis of the narratives of both the participants and myself. My narrative beginnings include stories of caring throughout my schooling experiences grades K-12, my accounts as a teacher of seventeen years in three different public schools in Georgia, and the accounts of my relationships with my brothers.

Participant and Researcher Conversations. As I continued to write my autobiographical sketches telling stories of my schooling, relationship with my brothers, relationships with teachers, and other experiences with caring, I was ready to enter the next phase of the research study; participant and research conversations.

[N]arrative interviewing involves a paradox. On the one hand, a researcher needs to be well prepared to ask good questions that will invite the other's particular story; on the other hand, the very idea of a particular story is that it cannot be known, predicted, or prepared for in advance. (Chase, 2005, p. 662)

I conducted unstructured, open-ended research conversations. I recorded and transcribed the conversations. The guiding questions for the study – also found in chapter 1 – are:

- 1) How's it going? Tell me about yourself?
- 2) Describe a typical day in your life.
- 3) Thinking back to elementary school, what was a typical day like in elementary school? Middle school? High school? What are/were your math classes like? Describe a typical math class?
- 4) How do you know when someone cares about you? How do you know a teacher cares about you? Describe some of your caring relationships in general.
- 5) Who are people who you would say you have caring relationships with? What do these relationships look like? What are some of your experiences with these people?
- 6) What does a caring mathematics classroom look like/feel like for you? When is a classroom NOT a caring one?

The initial conversation involved stories of the participants' experiences including experiences of school and with caring in general. I also shared my personal stories. Allowing the conversation

to be informal helped me to establish rapport with the participants as well as facilitate ease of conversation. Narrative inquirers commonly begin with conversational stories as opposed to a typical interview that sounds more dialogic in nature (Clandinin, 2013). “Conversations create a space for the stories of both participants and researchers to be composed and heard” (Clandinin, 2013, p. 45). Beginning the conversation with stories set the participant as the leader of the research. “We go where they [the participants] take us” (Clandinin, 2013, p. 45).

Transcription of Conversations. I conducted three 1-2 hour conversations with each of the participants. Soon after each of the conversations, I transcribed the conversations. Not only did I analyze the transcripts multiple times after I transcribed the audio recordings, but I analyzed the transcripts as I conducted the transcriptions. I discuss the particular analysis tools in the next section, but it is important to reiterate that the phases of collection and analysis are frequently occurring simultaneously. The transcription is both a collection of data in that I am simply converting the words from audio to script, but it is also an analysis tool. I was thinking of the next conversation as I listened and transcribed each conversation.

Letters, Journal Entries, and Other Artifacts. The primary sources of data in my study are my personal narrative beginnings and the conversations I had with the participants. I began the first conversation with a call for artifacts. The first and primary artifact was a journal. I gave each participant a composition book after the first conversation and asked that they jot down anything that came to mind between now and the next session. The jottings included short phrases that reminded the participant of stories or experiences from the past, or the participant wrote actual stories that they did not feel comfortable discussing in person. I asked the participants at the close of the first conversation to bring other artifacts such as photographs, letters, pieces of art, and any other artifacts to our next conversation. I also personally studied

letters and emails from my brothers, and even a poem from high school. Intermittently throughout the meetings with the students as we shared stories of struggles and caring in school, we shared artifacts such as photographs, letters, and journal entries. These sorts of artifacts told stories (Clandinin, 2013). Moreover, just as the informal beginnings of the conversation helped build rapport and comfort, sharing artifacts allowed the participants to co-lead the conversation.

Data Analysis

The analysis of the data began even before the first encounter with participants. I analyzed my own stories – narrative beginnings – before the formal conversations begin. Similarly, between the conversations I analyzed the conversational transcripts looking for two analytic tools in narrative inquiry research: narrative threads and moments of tension. As I composed interim texts, I further analyzed the texts to promote deeper, richer conversations. I constructed annals after the second conversation as a way of organizing the chronology of the stories the participants shared.

Establishment of Narrative Threads. After I transcribed each conversation, I looked for patterns within the narratives. These patterns are *narrative threads* (Clandinin, 2013). Over the course of the conversation, I paid particular attention to “plotlines that threaded or wove over time and place through an individual’s narrative account” (Clandinin, 2013, p. 132). As the conversations commenced, the participants told stories of caring throughout their lives as well as stories of schooling, both caring experiences and non-caring experiences. The impetus of my study was to listen for narratives of caring and struggle in the mathematics classroom prompted by my own stories as well as the students’ selected stories.

While the participants and I selected moments – narrative threads – that speak to the questions I am researching, I focused attention on *moments of tension*. Though the notion of a

moment of tension has a negative context when used in common usage, these moments in the realm of narrative inquiry create a space of growth and learning. For example, when a student's story is in tension with my experiences as a teacher, I can further engage the conversation. These moments of tension within the study are not simply bumps to be smoothed out as is the assumption in most healthy relationships, but these are spaces where teachers can grow in understanding through the students' experiences. My purpose in shining a light on moments of tension is to show the importance in the context of the study. The students' stories, though not generally understood by myself as a teacher, speak to the experiences of the student.

As stated earlier, though the purpose of shedding light on moments of tension is not always to smooth out the rough edges, there are instances where the moment needs tension for the researcher and the participant to understand each other. If there are two narratives that seem to be incoherent, I will engage the participant further in conversation in the hopes of reconciling the two stories. The more difficult stories are sometimes hard for participants to share. The emphasis on analyzing the threads of tension resulted in not only coherence, but also major pieces of the story that had potential to fill large pieces of the research puzzle. Another example from the study, which will be further explained in chapter 4 is when Storm, one of my participants, said several times people who were always there for her, yet she stated during her struggles with depression and suicidal ideations she felt she had no one. This was a moment of tension for me, and through further reflection, I was able to not only better understand Storm's state of mind, but also better understand my older brother's struggles.

Construction of Annals/Chronologies. After I analyzed the transcripts of the conversations for moments of tension and narrative threads, I sketched the annals – a rough timeline documenting places and experiences of importance for each participant. Narrative inquirers

create annals to make connections within and among stories of their participants and themselves. The annals that I created are a part of the redrafting process described in the next section.

Once again, the analysis process is iterative. I used the annals to help me add to and adjust the narrative threads of interest and highlight new moments of tension and shed light on known moments of tension. The annals were a guide to the third (final) conversation with each of the participants. They helped us discuss the junctures in each participant's life as outlined in the interim text. This also aided my writing as I filled the gaps in the chronology and elaborated on the stories where the participant struggled academically with mathematics or experienced caring instruction.

Drafting Interim Research Texts. As I began the phase of narrating by composing interim research texts using the field texts I worked “to create research texts that allow audiences to engage in resonant remembering as they lay their experiences alongside the inquiry experiences, to wonder alongside participants and researchers who were part of the inquiry” (Clandinin, 2013, p. 51). Although there are various ways to select texts to foreground and include in the final research texts, coding texts analytically could have undone the ultimate goal of the narrative inquirer; that is to re-tell and re-live the stories (Clandinin, 2013). As a researcher, I am ethically bound to re-tell stories in ways that are consistent with the shared experiences of the participants. Including the member checking was a part of the crystallization that took place between the initial autobiographical sketches, the conversations, the annals, followed by the co-selection of narrative threads. These acted collectively to zero in on the stories that tell about caring instruction in mathematics classrooms.

As narrative inquirers, we need to hold open and to make visible the ways that participants, and we, struggle for that coherence, sometimes successfully, sometimes not.

We must, in the composing, co-composing, and negotiation of interim and final research texts, make visible the multiplicity, as well as the narrative coherence and lack of narrative coherence, of our lives, the lives of participants, and the lives we co-compose in the midst of our narrative inquiries. (Clandinin, 2013, p. 49)

As I undertook the task of composing research texts from the transcripts, I focused special attention to temporality, sociality, and place. As described earlier, these are the primary attributes of the narrative inquiry process. I engaged the multiplicity of stories of each of the participants, and I created coherence where there was no coherence. Thus, I spoke to the complexity of stories and storytelling.

Throughout this highly iterative process of composing interim texts, reading the field texts, re-reading the field texts, I frequently looked back at the initial personal, practical, and social justifications that motivated the study. As a narrative inquirer, and as a practicing educator, I attended to the shifting pedagogical theories and practices due to the co-created stories in the study. Narrative inquiry is an approach that is supposed to be highly transformative for both the participants and the researcher. One aim of the study is to transform both my theory of pedagogy and my practices in the classroom in ways that lead to deeper caring relationships and improved academic achievement. I also hope these stories are transformative for teachers who read the stories in similar ways.

Redrafting of Narrative Accounts. The narrative inquiry process assumes a co-construction of stories. After two conversational interviews with each of the participants, I drafted the interim research texts using the transcripts and annals; I met with each of the three participants to redraft the narrative accounts. I gave each participant a hardcopy of the draft of their respective section in chapter four. After 7 – 10 days, we met and discussed the draft. This

was important in the co-construction of the stories to continue in the co-creation process and continue to give voice to the participants. There is danger in the narrative process to “create silence that does not allow the participant to speak, to be heard” (Clandinin, 2013, p. 131).

This portion of the study was delicate. Discussing the visceral nature of some of the stories has a potential to reify negative identities that have developed for the participants. These can be sensitive topics to read and discuss. As I conducted this delicate portion of my study, I was cognizant of the ethical considerations in reading these accounts. There is power in the written and spoken word. Through the spoken word, teachers breathe identities of students into existence and solidify them (Johnston, 2004). As I read these accounts, I ran the risk of inadvertently reifying negative identities about the participants. Like Clandinin (2013) in her stories of participants, I hoped to be “mindful as I write this chapter about how relational ethics live at the heart of narrative inquiry and of how the ways we represent participants’ stories in narrative accounts can interrupt stories that sustain them” (p. 131). I tried to maintain this type of mindfulness throughout the redrafting process. I intentionally kept the person at the center of the story, not the struggling student. The mindful nature of narrative inquiry aligns with the confirmation component of ethic of care I hope to help teachers better emulate in the classroom. As a narrative inquirer, the participant is valued as a person who has a story, not valued as a struggling student who will help me publish a paper, just as I do not see my students as people I fill with knowledge so I receive a paycheck. The relation-building interactions are what I value most in my classroom, and these same interactions are what I valued most throughout the narrative inquiry.

Identification of Resonant Narrative Threads. The analysis process of narrative inquiry is iterative and phase oriented, not a step-by-step process (Clandinin, 2013). However, if there is a

final step in the process, it is establishing resonant threads between the participants. At the risk of overgeneralizing the experiences of the students in the participants, I laid their narratives side by side looking for resonance. The resonant narrative threads are not themes necessarily, but a comparing and contrasting. When I did this, I was able to relive the stories of my participants and my brothers. I lived into their stories and, ultimately a new story was created that informed and transformed my life and practice as a teacher. I will explore four resonant threads in Chapter 5. These resonant narrative threads are: 1) academic stress, anxiety, and depression, 2) attributes of a caring teacher and classroom environment, 3) in loco parentis: teachers, the other adults, and 4) mathematical struggles that began in and persisted throughout high school.

Quality of Study

The central issue for qualitative researchers is that of trustworthiness. As a qualitative researcher, I am concerned with the lived realities of others; namely students who struggle in mathematics, and how their lived realities relate to my lived reality as a teacher and scholar. From the narrative perspective, trustworthiness manifests itself through thick accounts that are considered by the reader to be lifelike (Geertz, 1983; Mishler, 1990). Ultimately, the reader will “determine the trustworthiness of this research endeavor” (Craig, 2013). My concern as a qualitative researcher is how students and teachers can better understand each other and build caring relationships in the classroom. Through “rich, thick descriptions,” teachers will be able to live into the stories in ways that resonate and translate into the classrooms with the teachers’ students in the teachers’ contexts (Creswell, 2013, p. 252). Denzin (1989) proposed that when the rich, thick descriptions align with the stated perspective of the researcher, the study is trustworthy. This is the challenge of my study. Once again, throughout every iteration of the

data collection and data analysis process I made sure that the personal, practical, and social justifications of the study were central to each decision.

Limitations

Though there is potential for the narratives in this study to resonate with teachers in ways that translate into improved interactions with students in the classroom, there is a risk that teachers will take the stories of students who struggle in mathematics and overgeneralize these students.

Final research texts do not have final answers, because narrative inquirers do not come with questions. These texts are meant to engage audiences to rethink and reimagine the ways in which they practice and the ways in which they relate to others. (Clandinin, 2013, p. 51)

The goal of this study is to get a glimpse into how teachers can better understand their students, grow in caring relationships with students, and shrink the gulf between students' perceptions and teachers' perceptions of caring relationships. The goal is not to have a program to implement, but to help teachers better understand how students perceive caring mathematics instruction so that teachers can better connect with students and create spaces where both academic and ethical growth can occur.

Summary and Conclusion

Though there is research on caring mathematics instruction in the middle grades, I was able to find no research focusing on student perceptions of caring mathematics instruction at the high school level. The purpose of my study is to give opportunities for students to share their experiences with caring instruction and mathematical struggles. By co-creating these narratives of caring instruction and mathematical struggles, I composed narratives that will potentially

resonate with preservice and inservice teachers. The goal is for teachers to connect with students in ways that help to minimize the gulf between student and teacher perceptions of care in the classroom.

In the next chapter, I share the narratives of my three participants and myself as co-constructed stories of caring instruction and mathematical struggles.

CHAPTER 4

RESULTS

As I arranged a time and space to meet with each of my participants, I spent a considerable amount of time thinking about where I feel open to discuss topics that can leave me feeling vulnerable. In the end, each of the participants chose a location and time. One of the places was a “Starbucks”. When Isbjorn chose this location, I offered it up as a good place with another participant – Storm – when she told me to pick the place. DJ Panda mentioned a Smoothie King, which I will discuss in the next section as not being an ideal space to have a conversation, especially when this conversation needs to be transcribed. Staying true to narrative analysis, there is no story outside of time, space, and social interaction (Clandinin, 2013). The stories that ultimately resulted in the following sections were scattered and dependent on time, place, reflection, and conversation. As I spent time with each of the participants, I grew to care for them. I found myself telling them to come see me for help in their math classes, which two of them still periodically find themselves struggling. But more consequential to the purpose of this study, as I engaged the participants in conversation, as I listened intently about their stories, I found myself growing closer to my brothers, my parents, my wife and children, and my students who I see each day in the classroom. The interdependence of care became essential to the stories that the participants and I co-created. My hope for the reader is as you engage the stories, that you too will be transformed and drawn closer to those you see every day.

DJ Panda

Resonant Quote. With respect to what makes a teacher caring:

Yeah, this is hard ... because you meet so many differently people over the years and there are so many different kinds of caring. When I meet a teacher that cares it means

they don't have to treat you like family, but they treat you like you're somebody even if you think you're nobody. (DJ Panda, personal communication, November 5, 2016)

Personal Background. I first met DJ Panda at a Smoothie King. It was a bright crisp fall day. We were in the middle of spirit week at the high school. The day we met was Hawaiian shirt day. I remember being a bit anxious for my first interaction with DJ Panda and her parents to be me in my overly bright shirt. We made plans to meet at 5:00 pm. I arrived about 15 minutes early. The shop was small with four or five computers against the wall with a shallow desk for each. I sat at the only small table in the joint; a circular table with two chairs situated around it. Grinders, mixers, and blenders blasted the air, and I thought to myself as I awaited her arrival that recording the conversations in this environment is going to be difficult. The table I sat at was against the front window. DJ Panda walked in talking to her mother and sister about what they might want to drink. I remember thinking "this might be her." She then walked up and introduced herself. She smiled, and the conversation began.

The first conversation we had was about how DJ Panda and her sister like to play tricks on their mom. As the sisters laughed about some of the tricks they had played on their mom, the mom looked at me smiling, holding in laughter herself, and said "do you see what I have to put up with" in a statement of endearment (personal communication, October 12, 2016).

DJ Panda is African American. She is about 5 feet tall with a ton of energy. She has braces across her upper and lower teeth. She talks with her whole body, waving her hands forward then backward, side-to-side. She has animated facial expressions as she both speaks and listens, nodding and opening her eyes to express approval or surprise. DJ Panda is always smiling, always joking. I see her in the hallways from time to time. My classroom is near a corner. She will sometimes poke around the corner so that I see her, smile while waving wildly,

just to disappear. I will hear “Mr. SPIRES!” I turn, and there she is smiling and walking hurriedly to make it to her next class.

DJ Panda is determined to play multiple musical instruments well. Of all of the instruments DJ Panda already plays, she most wants to master drums and piano better (personal communication, October 12, 2016). She plays the tuba in the marching band, and she is learning to play the guitar and the ukulele.

DJ Panda went to school with the same cluster of kids K – 7th, but then she attended a private school for 8th grade. She was homeschooled and took online courses her 9th grade year. She then transitioned to Lakewood for her 10th grade year and currently attends Lakewood in her 11th grade year.

Schooling: The Daily Struggle and Stress. One of the first conversations DJ Panda and I had was about a typical day in her current junior year. She lit up as we discussed her first period music technology class and her sixth period band class. Though she looks forward to these classes each day, she experienced an extensive amount of strain to succeed academically since entering Lakewood her 10th grade year that continues into her junior year. The stress that was not present for her in elementary school began to appear in middle school. She could only remember one instance of stress in middle school. She experienced this during her 8th grade science class. She remembered struggling with quizzes and tests in this class, and thus she remembers dread coming over her as this class approached each day. As early as middle school, DJ Panda became aware of the stark distinction between tests and quizzes as compared to other assignments. These assessments began to give her apprehension towards school, especially in her math classes when she entered high school. DJ Panda spoke affectionately about her

schooling, but as she began attending Lakewood her 10th grade year, the degree to which she was stressed grew along with the number of tests.

Waiting for the bus to start each day added to the daily strain that DJ Panda experienced performing on daily assessments when she began high school. She described the bus driver as mean and though the students are nice, there is tension on the bus (personal communication, October 12, 2016). The bus schedule was erratic. “She [the bus driver] used to come at 6:40, then it was 6:35, then 6:30. A couple of times she’s come at 6:27” (DJ Panda, personal communication, October 12, 2016). Students who ride the bus at Lakewood – as in all high schools throughout the county – must sit on the bus outside in the school parking lot until 6:55 am, when the bus drivers dismiss the students. This can amount to 15-20 minutes of sitting and waiting each morning.

After getting up early, waiting on the bus, sitting on a tense bus ride where students are tired and irritable, the drivers release the students from the busses at the same time. Students bottleneck as if a herd at a gate at the entrance of the building. I affectionately call this the zombie walk. Tired students lurch through the administrative wing of the school, march up a large flight of stairs, and through an outer courtyard and into the cafeteria. I am caught often in this migration of students after making copies or checking my mailbox. It is a quiet, sad parade. Very few students engage in conversation. Despite this stressful start to the day, DJ Panda begins the school day with her music technology class. She expressed the greatness of heralding the day with a class she enjoys so much. I remembered beginning my senior year with an “early morning” class that was an hour before the official start of the day. It was a technology class, and I enjoyed it because we chose a different module each week. Getting up early in the morning was tough for me, but looking forward to this class made it a bit more doable.

Along with the daily struggle to start the day in such a tense, hectic way was the the day-to-day struggle of performing in classes and having multiple assignments due made her 10th grade year a tough transition from homeschooling and online courses. From stressful bus rides to a myriad of daily academic and emotional performances, the plethora of tests she had to take caused a significant amount of stress for DJ Panda. She mentioned the PSAT and a county test that is mandatory for graduation. She actually stayed after school for a couple of weeks to prepare for this mandatory county exam, but I will speak more to that later in her story. A brief part of our discussion was about how the increase in the number of tests that are outside of the realm of the regular school day caused a great deal of stress for DJ Panda.

DJ Panda stated:

... there were always so many tests to really stress you out, [mandatory county writing test], PSAT, I'm trying to practice for the [mandatory county writing test], practicing for other classes, then math which is the only class I'm virtually failing, let me focus more on this class, I'm getting better. Then other classes start going down ... I feel that [the barrage of tests] locks a lot of kids out from learning. (personal communication, October 12, 2016)

Mathematical Struggles. As we told stories of the daily grind, DJ Panda discussed mathematical struggles. For DJ Panda, struggling mathematically meant one of two things; 1) regularly making less than an A or a B on an assignment, or 2) not being able to complete the process when doing examples and not being able to figure out the mistake. She does not remember ever struggling with mathematics prior to her ninth grade algebra class. She does remember much of her elementary and middle school experience. As we discussed earlier, she

remembered struggling with her 8th grade science class, but for 9th – 11th grade her struggles were exclusively with mathematics.

Her 9th grade mathematical experience was through an algebra 1 online course. The first week was relatively easy, and then as the quizzes and tests began to take place she found herself being overwhelmed. The class would begin at 9:30 am. There were approximately 500 students in this online algebra course. The lesson took place synchronously online while students watched and took notes. There was an open chat session where students could ask questions in real time. DJ Panda remembers taking notes and feeling as though she fully understood the lesson. After the lesson, she practiced with the online text. Nevertheless, she could not follow the interactive online text examples. She gave a true to life description of one particular lesson on factoring. The teacher taught the lesson. DJ Panda went to practice in the online text before the quiz and started to feel less and less confident as she progressed through the textbook. Somehow, the lesson did not quite match the examples in the text. Something was missing, but she could not quite figure it out. She tried the quiz knowing that she would be able to retake it after going over her mistakes. She remembered making a 60%. This experience with her factoring lesson was representative of her entire year. She would toggle back and forth between scores of 50's, 60's, and barely passing all semester long. She would get a low 80 on a quiz, and then follow that score up with a 50 on the next quiz. The sense of unyielding struggle would grip her at times, as she had to revisit lesson after lesson of algebra one while her assignments for other classes piled up.

Despite the struggles in her algebra one course, she remembered her teacher as a caring teacher. The week before the final exam, students could meet with the instructors in person at different sites depending on geography. The teacher assigned students a location and time so

that the number of people at each time and location would be no more than 30, and then they could show up for a more traditional classroom experience with the teacher. DJ Panda remembers the teacher sitting down with her and working problems with her. The teacher was encouraging and counseled DJ Panda on exactly which skills she needed to practice. Even as DJ Panda became frustrated, her teacher encouraged her to keep working hard. The teacher acknowledged that the material is challenging, but that DJ Panda will be successful if she just persists. DJ Panda made it through algebra 1, but the sense of struggle was visceral and remained that way to this day. In the back of her mind she finds herself asking, “am I going to be able to do this?” when she begins to study mathematics.

Other Mathematical Experiences in High School. Though her first year of high school mathematics was rocky goings, her next two years were less of an academic struggle. DJ Panda began our first of many conversations on her high school mathematical experiences with a brief description of her current junior algebra two class and her perception of the classroom climate. She then went on to compare her junior algebra two experiences with her 10th grade Geometry experiences. Many of her distinctions she attributes to the climate generated by the teacher, the student dynamic as it relates to maturity, and time of day.

DJ Panda described her junior algebra two teacher as a good teacher and humorous. Despite this, she describes the vibe in the room on a daily basis as dull. I noticed that the differences in her descriptions of 10th grade and 11th grade mathematics classes were stark. These were two very different worlds. One was warm, the other cold. One full of life, the other seemed dull and lacking in connection. The major distinction as DJ Panda described it was that the students were more warm and that Mrs. Fairchild – her 10th grade mathematics teacher – did more class projects and more engaging lessons. She had two different classes with Mrs.

Fairchild during her 10th grade year. The first course she recounted as having a less than welcoming vibe, but her 2nd semester she described as extremely warm and open. She attributed this warmth to the students in the class. A class full of friends, conversation, and projects is in stark contrast to her current class. Fast forward to 11th grade year with Coach Alexander. “There’s not much of a community. But there isn’t much talking and interacting. Vibe wise, it’s kind of tense, but that’s mainly because everyone’s tired” (personal communication, November 5, 2016). Despite the fact that the class is 3rd period starting at 9:30, students are still falling asleep. Several students who are awake are not even writing. DJ Panda even admits she has fallen asleep a few times. I find myself reflecting on her accounts of this class a great deal. I like to think the overall sense in my own classroom is one of warmth and welcome, but certainly it is not so for all of my students. Students express frustration openly, which I encourage if students do so respectfully and not so forcefully to create an overall vibe of tension in the room. Despite some students openly expressing frustration, my students know each other’s names. I stop any belittling in its tracks, gently. We work together. We converse.

There are so many factors at play when I attempt to develop and sustain a climate of warmth, respect, and dialogue in a high school mathematics classroom. My relationships with the students, the time of day, the students’ relationships with each other, and the students’ experiences with the subject matter; all of these factors make for either healthy vestigial inertia or an obstacle to overcome.

The Difficulty of Math. As a mathematics teacher, I aim to balance the need to make the mathematics rigorous and challenging, yet accessible. DJ Panda explicitly expressed her perception of mathematics as a topic that has progressively become more challenging throughout her years of study, and unnecessarily so. She also asserted the need for a smoother transition

between the algebras and geometry at the high school level. As we had this conversation, there was certainly dissonance of theory on my part. What DJ Panda perceives as unnecessarily difficult is considered good mathematical pedagogy in preparing students for the onslaught of algebra by mathematics educators (National Governor's Association, 2010). What DJ Panda perceives as making arithmetic difficult for its own sake I understand to be necessary to make sure students do not continue to hit a wall in algebra that is seemingly insurmountable by so many students due to the highly abstract nature of algebra where understanding is necessary, not just procedural, algorithmic operations.

DJ Panda relates watching a YouTube video to try to help her sister with her math homework: "... she was talking about how they are teaching addition to little 8 year old kids as making it more difficult ... making $4 + 1 = 5$ but making it $4 + \text{something} = 5$ is the same as $5 - 4 = \text{something}$. It just seemed to make it so hard. Like why? They just tried to make something so much harder than what it could be or should be" (personal communication, November 5, 2016). Surely mathematics builds year to year, but the challenge to make mathematics both accessible and challenging as previously discussed is a struggle for me. Along with the issues of accessibility and lack of smooth transitions, there is an issue of selling to the public the purpose of teaching mathematics differently. We in the mathematics teaching community have a public relations problem. I will discuss more on this duel between access and challenge in chapter five.

"They've made it too complicated ... I mean ... I see why they would want it to be challenging" (DJ Panda, personal communication, February 22, 2017). The dilemma as a high school mathematics teacher once again is striking the balance between challenge and accessibility. For DJ Panda, there are several obstacles in her current mathematics classes as she sees it. One of these obstacles is the pace at which she is expected to process the material

covered in class. The struggle for DJ Panda is that there are too many assessments packed back to back. She simply is not able to understand the material in the given period. She works and reworks the homework, and she works the reviews. She even goes to tutoring before and after class. Then she sits down to take the test, and every time she receives a 50 or 60. The second obstacle is that she feels the tests are more difficult than the daily work and the quizzes. She sits down to take the test and thinks, “What is this language, I’ve never seen it before” (personal communication, February 22, 2017). This is not simply sour grapes. She genuinely feels as though the test is significantly and purposefully more difficult than what the students are assigned on a daily basis.

Mathematical Identity: Remedies for Struggles, Stereotypes, and Expectations. For DJ Panda, three years of incessant struggle simply to pass her math classes has created a deep-seated identity of failure in her mind. She has failed a couple semesters and thus she finds herself in credit recovery classes – a during-the-school-day online course for students who have received a final grade of 60 – 69 in a class. She has made a 68 or a 69 on 2 separate occasions. She has had two classes concurrently for the last two semesters at Lakewood, one in the classroom and one during her lunch in a computer lab. Her mathematics classes consume her both in terms of time and emotionally. She receives tutoring in the morning and afternoon. She also has two hours of math during the school day. She spends 3 – 4 hours each day working mathematics. This is time she does not spend practicing her instruments, nor spending time with her friends. This interminable struggle has created an identity for her relative to mathematics where she feels “pretty dumb. Because you can go a whole week feeling like you have something and then you don’t and over time that really starts to effect everything” (personal communication, February

22, 2017). The snickering from students, the constant comments from teachers have taken their toll on her emotionally.

DJ Panda misses her private school where class sizes were about 15 students. I was caught off guard when she stated “a friend of mine told me that in public schools they [teachers] can’t be as creative because they have to stick to this thing and whatever this thing says they have to do” (personal communication, February 22, 2017). I know “this thing” well, the pacing guide. Teachers can certainly deviate from this pacing guide, but to do so puts considerable strain on the teacher and the instruction team of which the teacher is a member. Class size and instructional pacing calendars are outside of the control of teachers in our building. DJ Panda expressed other factors that are within the teachers’ control that she feels will help her instructionally in her mathematics classes. The teacher can teach with more enthusiasm, call students to the board, be intentional about paying attention to what students understand, and create a space where students work together and are called to the board. The typical day in Mr. Alexander’s class – algebra two, which is notoriously difficult due to its abstract nature – is he gives each student a handout, teachers a monologic lesson, and then the students leave. There is very little dialogue: there is very little time for students to ask questions; there is no time for students to work problems and ask questions; there are not times in the class where students can work together and learn from each other. DJ Panda stated each of these would improve her ability to understand the mathematics.

As DJ Panda and I discussed her struggles and her identity in her mathematics classes over the last three years – through algebra 1 online, geometry, and algebra 2 – she shared that stereotypes are a factor in her experience at Lakewood. DJ Panda mentioned that she is bombarded by stereotypes of Blacks performing lower academically in the media, but also she

hears it explicitly in the building. “Sometimes I hear what other kids say, oh I’m Black so I’m not good at math, or that kid’s Asian, they must be amazing at it. Or that kid’s white, they probably get tutoring or something like that” (personal communication, February 22, 2017). There is pressure within her family to “not make yourself look stereotypical, to make yourself look better than this ... it puts a lot of pressure on me” (personal communication, February 22, 2017). For DJ Panda, she is not only struggling in mathematics as an individual, but she carries the weight of being just another Black kid who cannot cut it. “You feel like people are like of course, look at that kid, they’re Black, of course they don’t understand it” (personal communication, February 22, 2017). DJ Panda does well in her other classes. She is a gifted musician and writer. She is a leader in almost every other area of her school life. I watch her interact with her friends. They highly respect her and look up to her. Her mathematical experience is outlandishly out of disjoint with every other arena of her high school experience, yet it weighs heavily on her. DJ Panda is extremely bright and perceptive. She speaks of her 10th grade teacher Mrs. Fairchild in mixed tones:

She wasn’t racist. She was always nice ... but she still stereotyped and made assumptions with students. You could see it in her face at times ... she would really dumb things down in a way that would make you feel like she was really talking down to you. That added to why I feel dumb when I walk in a math class. (personal communication, February 22, 2017).

A switch goes off when DJ Panda walks through the threshold of a mathematics classroom. She goes from smart, witty, charming, leader to simply dumb.

Experiences of Care, Stories of What Could Be in the Classroom. Despite the mathematical struggles that burden DJ Panda, she has rich stories of caring teachers. She described caring as

taking the time to connect. Caring is treating others as people first, treating people like family. Teachers care when they give of themselves in ways that transcend the curriculum, the lesson, the mandatory.

DJ Panda's schooling experiences have been replete with caring experiences. She recalled Mr. Costa at Roundtree Middle School who would greet her in the hallway one and two years after she had him as a teacher. He would stop DJ Panda and ask how things were going and they would have involved five-minute conversations. Something as seemingly insignificant as a five-minute conversation in a hallway still conjured up memories of warmth years later in her mind. She recounted Ms. Edwin who would find ways to make her lessons more personal and humorous. For example, Ms. Edwin would brag about how lower her gas bill was. She would find ways to incorporate the math of billing into the lessons. She even brought it in, waving it around, passing it around. "See, I told y'all. It's only 30 bucks!" More than just the humor and positive energy, Ms. Edwin would always take the time to talk one-on-one with students about how things were going.

If you were just like a bad kid in her class, she would do her best to see what's going on ... She was like a mother in a sense ... But, she'd also praise you for the right things. And if you were having a bad day she'd come and hug you and say 'hey, talk to me, is something wrong, is something bothering you'. (DJ Panda, personal communication, October 12, 2016)

Ms. Edwin would get onto to her students by personally calling them out. She would tell the misbehaving student directly that they were misbehaving. She was stern. However, it was never awkward, and students never felt singled out or isolated. She would let students know when they

were out of line, but she would then gently bring them back into the fold of the classroom community.

Contrast Ms. Edwin's motherly caring with one of DJ Panda's middle school social studies teachers. Though Mr. Rowan did not show care in a way that was personal, DJ Panda felt authentically cared for by this teacher too. He wanted all students to be successful in his class, and he spoke often about what it took to be successful in life. DJ Panda perceived these moments as caring. This teacher did not have to have conversations about being their personal best every day. For DJ Panda, these extra conversations were motivational, and they demonstrated that the teacher was doing more than just administering a lesson containing knowledge of the content. This teacher was supposed to do more, be more to the students.

Also in middle school, DJ Panda had a language arts teacher she was able to connect with when her teacher acknowledged her writing skills were above average. This was the catalyst they needed to connect on a more personal level. Ms. Connors would come to DJ Panda's basketball games. Seeing her in the stands made DJ Panda feel cared for. Ms. Connors went out of her way to connect with DJ Panda outside of the classroom in an activity that was important to DJ Panda.

Despite DJ Panda's struggles with her online 9th grade algebra one class, she spoke affectionately of her algebra one teacher. DJ Panda was aware that her teacher had to "deal with at least 500 kids maybe more" (personal communication, November 5, 2016) scattered throughout the state of Georgia, yet she always exhibited an upbeat attitude that helped DJ Panda be less anxious and frustrated about her performance in math.

She definitely cared about all the students. Even if they were failing the class or they didn't want to work anymore she still would be like 'hey, this might not be something

you want to do but this is still what's best for you'. Like she was really cool. (personal communication, November 5, 2016)

Even when students were struggling or even failing, the teacher would encourage them to continue working and not give up both online in the comment forum and in person.

For DJ Panda, being able to relate to and identify with a teacher was important. DJ Panda described her music technology teacher as a cool person. He was an excellent drummer who toured the world, including a long stint in Japan. This and his good sense of humor made for a good transition from the stress of the bus situation into the school day. DJ Panda's love of music and writing made for an instant connection with her band and language arts teachers. DJ Panda's interest and identity as a good at language arts student continued with her from middle school into high school. DJ Panda's 10th grade language arts teacher, Ms. Phillips, made a lasting impression on her. DJ Panda's transition to Lakewood High School was tough on many fronts, and Ms. Phillips helped academically and psychologically with the transition. "Had it not been for her I would have probably had like a mental breakdown" (personal communication, October 12, 2016). DJ Panda had a close relationship with Ms. Phillips that spilled over into the level of her learning in language arts. Ms. Phillips has a way of cutting through all the high school cliques and social taboo to bring everyone together in ways that are authentic and lasting. Through a sheer act of will, she has a way of helping students see that they are all connected in ways that transcend race, culture, class, and social status in the school building. She brings the class together. Ms. Phillips demonstrated this ability to connect with a student named Grey. In the class DJ Panda had with Ms. Phillips, there were several students who "had a lot of self-doubt, especially a couple of students since their speech is African American Vernacular English (AAVE)" (personal communication, October 12, 2016). These students felt ostracized from

other students in the class. Ms. Phillips was able to help these students begin to push back on these feelings of low self-image. DJ Panda tells of one student – Gray – who was more frustrated and angry than other students in the class. A guest speaker who was Italian came to speak to the class. After the man left, the class discussed what the man had to say, and Gray dismissively said that he was just another white man telling another white story in a very dismissive way. Ms. Phillips called her to task in a way that connected Gray to everyone in the room. DJ Panda could not remember exactly what Ms. Phillips said, but after that day, Gray was more open to others and her disposition changed in ways that were noticeable by all.

I remember Gray from the hallways. She would stop and talk to a teacher across the hall from me every morning. I would smile and say good morning. She would put her eyes down and nod in a way that acknowledged my greeting but only reluctantly. This went on for months. I would smile, nod, and say good morning. Then one morning she said good morning back and smiled. I greet every one of my students every morning as they enter the room. I do so with a fist bump, slapping some students on the shoulder. I greet every student I encounter, no matter what, without exception. The students sometimes even circle back with their arms out and say, “I forgot my bump” if somehow I was talking to a teacher in the hallway. After that morning when Gray smiled at me and said good morning back to me, she would walk by and extend her arm and I would bump her closed fist with mine. This is how we greet each other every day to this day followed by me blurting out “GRAY!” as she passes. She passes with a slight smile then goes back to “mugging it” as she walks quickly to her next class.

Ms. Phillips did not shy away from controversial topics of discussion. In this way, she reminded me of my own 7th grade language arts teacher, Ms. Tomlinson. The entire class absolutely admired her. She had a strength yet gentleness of presence that drew all of us students

to her. The conversation in this section with DJ Panda had me reflecting on Ms. Tomlinson's class, my 7th grade language arts class. I was in a class of about 10 students. We all, all of the students, enjoyed the open, heart-wrenching conversations about various contemporary and controversial issues. This class was at Mannheim American Middle School in Mannheim, Germany. We were all children of parents who served in the US Army. We were a racially, politically, socioeconomically diverse group. There were several students who were 2nd generation Americans whose parents were from Puerto Rico, Pakistan, and Nigeria. We hailed from all regions of the United States. Ms. Tomlinson was eager to have the hard, real conversations, and we were all better for it. We sat around what looked like a large boardroom table, and we discussed our readings on a daily basis. I distinctly remember being obnoxious during one of these discussions. I was being immature to say the least. Ms. Tomlinson asked me to step outside and she talked to me. She was extremely polite and spoke to me like an adult. Somehow, in this one-minute conversation I remember not only maintaining my dignity, but actually being uplifted throughout. I was behaving in a way that certainly showed no respect for her or my fellow classmates, and I certainly expressed no dignity in the situation, but Ms. Tomlinson allowed for me to correct that and start over again. Not only did she allow me to maintain some semblance of dignity through my ridiculous behavior, but also she always treated each student as a mature young adult as she engaged us in ways that I only experienced later in college courses.

Once in Ms. Tomlinson's class, we read about racism in the current events. Many of the students in the class could not believe that there were still such overt forms of racism today. The story in the news that initiated the conversation was David Duke running for governor of Louisiana. Ms. Tomlinson, who was a single white woman who was teaching in Department of

Defense Dependents Schools (DODDS) as a civilian, shared with us a story that was difficult to share. She grew up in Indiana in the 1960's. She said it was only 20 years ago that she experienced racism in a way that really made her reflect on the complexity of race in America. She remembered at eight or nine years old, she was walking on the sidewalk in the downtown area of the small town where she grew up. A Black man walked by and said "hello lovely ladies," tipped his hat, and continued walking. After the man passed, her grandmother grabbed her arm, and said quietly so no one could hear her: "Now don't you tell anyone that he said that. If you do, there'll be a nigger killing."

I reflected on my experiences with Ms. Tomlinson and DJ Panda's experiences with Ms. Phillips. I found Ms. Tomlinson approachable, accessible, and down to earth. As DJ Panda meanders through stories of care and descriptions of her ideal teacher and classroom, she used similar terms and phrases such as "real, no walls, open, authentic, understanding, humorous". These are descriptors of a personal relationship. As teachers grapple with de-professionalization, I am reminded that though we are a profession and we as teachers should be professional, we should also be on the ground and personal. It is a hard balance to strike, but our profession is one that demands a personal commitment and professional finesse. As happened throughout the conversations with all of my participants, DJ Panda said something that was so masterfully luminary that I found my thinking shifted. I had a transcendent moment where my paradigm that I live in most days challenged. The reality was not changed, but my perception of reality was called into question. The teacher-student relationship at the elementary level is generally one-sided. The students are solely cared-for and teachers are caring. The college level caring relationship between student and teacher is more nuanced and reciprocal. The high school

teacher-student relationship is much more foggy and in flux. DJ Panda professed in describing the ideal caring student-teacher relationship:

A teacher that can understand a student's struggle while a student understands the teacher's struggle. And they [teachers] can work together with the students to understand what their problems are ... like if there's a problem they take time to like try to figure out ... where's the problem even though you have a plan. (personal communication, November 5, 2016)

This statement brilliantly described the space that is the magical space of high school. I reflected on those moments I have experienced as a teacher where I spend a moment outside of the daily programmatic plan and live into the personal and authentic space of where students are and where they can be. As our conversations ended, I appreciated DJ Panda's gift for expressing exactly how she felt about her experiences. I put on the full-court press. What was it about Ms. Phillips? Break it down. What do you mean? Could Ms. Phillips be any teacher?

I definitely think any teacher could be like that and I think a lot of teachers want to be like that teacher, but they get scared or they just can't figure out how to do it. Maybe they just really don't [want to be like Ms. Phillips], and they're in it for the paycheck. (personal communication, November 5, 2016)

Storm

Resonant Quote. On two teachers who cared for and looked after Storm when she needed someone:

"I kept in touch with both of them until I came back, and they said if I ever needed anything to come and get them. They both basically told me they adopted me" (Storm, personal communication, October 12, 2016).

Personal Background. I arrived at the Starbucks in Kroger about fifteen minutes early. The coffee shop is located at the front of the Kroger. There was a slight partition of fall items for sale that direct traffic slightly to the right to keep customers from walking through the small sitting area for the coffee shop. I sat facing the automatic doors watching customers as they entered. I had yet to meet Storm in person. I kept looking up as I sit with my coffee and my journal. I filled the time by writing personal experiences of care. Storm popped in and sat down with a big smile and a “hey!” She is full of positive energy. My initial feeling was that she is extremely personable. With Storm, no one is a stranger, and she seems to have an authentic care for people.

Storm is white with long, brown hair that she keeps back with a ponytail holder or a headband. She is “not short, but not tall” (personal communication, October 18, 2016). She is full of spirit and spunk. Her stories come alive as she meanders through the accounts. She spends her time outside of school with her boyfriend and a couple of close friends. She is not a part of any extra-curricular activities, though she spent time in theater and dance when younger. She mentions possibly picking back up acting and dancing after graduation.

Storm is not quite into her last semester of her senior year. She would be set to finish this spring, but she took a semester off due to missing a significant amount of school during the fall semester of her senior year. Instead of graduating with her class this May at Lakewood, she will complete high school in July and march with an online school.

Storm was born and raised in a small town northwest of Lakewood. Her mother married her step-dad when she was seven, and they moved to a small town where she attended Lakeview Elementary [feeder elementary of Lakewood] for 2nd grade. They then moved to the small town where Lakewood High School is situated which is where they currently reside. She has been

with the same cohort of students since 3rd grade. She attended Rockview Elementary [feeder of Lakewood] from 3rd – 5th. She attended Pantheon Middle [feeder of Lakewood] for grades 6 – 8, and she has been at Lakewood High School for the past four years. She is a full-time senior at Lakewood.

Junior Year: The Day to Day. Storm started each day with a bang. She met up with a close friend before 1st period. She and her friend usually stood outside of Coach Jansen’s classroom, their British Literature teacher. She spoke fondly of his class. Coach Jansen is full of energy and enthusiasm. He is loud and full of humor, which helps to keep his first period students awake and engaged. His passion is infectious. She followed Jansen’s class with Mrs. Norton, her physics teacher. She described Mrs. Norton as hyperactive and bubbly. Storm has known Mrs. Norton for two years now. She affectionately confided that Mrs. Norton is the type of teacher who will run 1000 miles to help students understand the lesson. Storm loves the “silly little jokes” that Mrs. Norton tells as mnemonic devices. “The symbol is ... ‘m’ [mu] and she said cow-efficient, you know “mu” [moo] ... so corny, but she’s so awesome” (personal communication, October 18, 2016). Her 6th period is the class she enjoys the most, forensics. Ms. Banks, her forensics teacher, goes out of her way to make sure the class is as engaging as possible. The day we first discussed this class she had taken a test and was excited. Storm had read an article about a man who the police arrested at his own parents’ funeral because he was linked to some forensic evidence in the parents’ murders. Ms. Banks told Storm to send her the link and they would discuss it in class the next day.

Bullying. As we discussed her schooling history, Storm let out a big sigh when I pointed out that she had been with the same group of kids since 3rd grade. Being an Army brat who moved several times after 3rd grade, I initially thought this sigh was due to being in one place as

being uneventful. However, over the course of our conversations, I realized the sigh was because she had been bullied over the course of her elementary, middle, and even high school life.

She reminisced on her experiences in Alvaria. This was a happier time for Storm. “Almost nothing bad had ever happened and I was just happier there” (personal communication, October 18, 2016). Her grandparents – who had lived in Alvaria her entire life – moved to Florida a few years ago. She missed them greatly. Like so many grandparents in so many families, they were a constant and an anchor that kids and grandkids count on for stability. She ultimately would like to move back to Alvaria when she finishes school because of all of the warm memories. She has no personal ties to the town, but reminiscence is a force with which to be reckoned. I left Mannheim, Germany the summer before my 9th grade year in 1992. I still mentioned to people into my senior year of college in 2000 that I might teach abroad in Germany so I could live near this place of such happy childhood memories. For me, this was before the bad times with my brothers. Before they were in and out of youth detention centers, detox and rehab facilities.

As we continued to discuss her schooling history, Storm shared that she experienced a great deal of bullying. For her, the bullying began in fourth grade, and continues. She opened up about a girl in one of her classes who simply does not like Storm, and because this girl had a lot of friends, they constantly picked on her. Storm stated several times throughout our conversation that she lets the meanness roll off her, but you can tell under the façade that it still hurts, though she has learned to handle it well.

The bullying began on the playground in 4th grade. A friend of hers one day started being mean. She says it seems silly now, but as a fourth grader, it was hurtful. The girl called her

mean and fat. This incessant taunting continued through 4th grade until the girl moved toward the end of 5th grade. Storm dreaded going to school because she could not stay away from this girl. In middle school, a group of boys who called themselves “the Oreo Gang” made life difficult for Storm. They were always playing truth or dare type games, and they did this to embarrass and belittle other students in the class. By seventh grade, a lot of the bullying had become physical. Some girls attacked her. She recalls not wanting to come to school in 6th grade because of these girls. She would go to the clinic and call her mom. She was constantly in fear, and she did not feel safe in Pantheon Middle School.

Depression, Anxiety, Suicide. After the years of bullying, Storm had come to enter through the doors of the school with foreboding. Storm and I discussed how one of her favorite teachers – Ms. Davis – quit teaching due to the inordinate amount of strain caused by administrative scrutiny. This conversation led to Storm open up about her experiences with depression, anxiety, and suicidal inclinations. Storm explains why all of Ms. Davis’ students felt such a deep connection with her: “Yeah, all of her students [feel a connection with her]. Like you’re not just a student to her, you’re an actual person. And she just wants to get to know you” (personal communication, November 1, 2016). Storm struggled with anxiety and depression for several years now, and Ms. Davis bonded with her during class and even after school because she too struggled with these conditions. Storm confided in Ms. Davis about her family situation, and Ms. Davis taught her breathing and coping exercises that helped her better deal with her own anxiety and depression. Just two days prior to our conversation about Ms. Davis, I bumped into Ms. Davis at a local restaurant. Ms. Davis and I spoke at the restaurant about her new job with an insurance company. She missed teaching and missed the kids, but she did not miss the inordinate amount of emotional stress that came with the job. Ms. Davis told Storm that she

personally experienced extreme levels of stress, but she did not realize how much of it was because of the stressors of the profession until she found another job.

As we discussed Ms. Davis, Storm felt more comfortable opening up with me. Storm was diagnosed with bi-polar disorder several years ago. During the summer and fall of her third year at Lakewood, she had virtually stopped taking her medication. That is when the downward spiral began. She began to self-harm. She fought with her mom on a regular basis. Her mom saw the marks on Storm's arm one day in October of her junior year. Some were new, but some were old scars. Storm left the house and went to stay with a friend in October after a fight with her mom. After being gone from home for about a week, Storm called her grandmother and uncle to come get her. Storm and her uncle – her mother's brother – have a close relationship. He too struggled with depression and anxiety. At that point, Storm's mom insisted that she go to medical facility specializing in suicide prevention. Storm was at this facility for about a week and a half. When she was released the first week in November of her third year at Lakewood, she did not feel comfortable going back to school. She stayed home for the next two months working with her grandmother. Her grandmother sews and sells pillows. Keeping busy helped Storm deal with the struggle of not being at school and thus feeling cut off from the life she knew. Starting back school last January was extremely tough for Storm. Several rumors had been circulating. She was on drugs. She was pregnant. She was dead. However, after about a month the dust settled. As soon as she returned to school, she had a meeting with her counselor – Mr. Yawn – and all of her teachers. She was officially on suicide watch though she mentions she has not had a single suicidal ideation since she left the medical facility. Storm has grown very close to Mr. Yawn, her counselor. Her mother is extremely appreciative of him as well. Mr. Yawn has a reputation at Lakewood as being extremely caring and competent. Storm began

dating a young man with who she has been friends for years in January of last year. They have been together now for over a year. She says that they are still best friends. “He keeps me down to earth. He always reminds me to take my medicine” (personal communication, November 1, 2016). He is not overbearing, but he always helps her to stay on the straight and narrow.

For Storm, the return to school was difficult. The dust has settled at school, but relationships at home are still a source of tension. Storm is still trying to build back her relationship with her mom. The trust is not there as it once was, but Storm knows it will just take time. For both of my brothers, the hardest part of putting their lives back together was not getting and keeping a job. It was not staying clean, initially. It was the strain of knowing that their loved ones had lost trust in them. It was grappling with the reality that loved ones of people who struggle with behaviors that cause trust issues are waiting for the next episode. The walls they put up to cope with these tumultuous relationships take a long time to dismantle. Even before Storm’s suicidal behaviors, she felt her mom did not care for her. Storm is trying to reconnect with her biological dad. She is worried that her mother would be angry, but she states “I just feel like I’m almost 18, and I can talk to him if I want to” (November 1, 2016).

As we begin to discuss teachers at Lakewood and caring, Storm opened up more about her experiences leading ultimately to her suicidal behaviors. Storm commented that more than any other quality of Lakewood, the friendly and loving teachers is the most important. In Storm’s first month at Lakewood, she found her mother unconscious and covered in blood in the bathroom. Two weeks earlier, her mom had given birth to her baby brother. Storm goes on several times throughout our conversations about how she absolutely adores this little four-year-old boy. “He is the sweetest little boy. He’s so friggin’ smart” (personal communication, October 18, 2016). He was born with a skull fracture. After 50 hours of labor, the doctors had to

perform an emergency C-section, and during the procedure, her mom lost a lot of blood and her little brother was cut up and bruised.

The day Storm found her mother in the bathroom, there was blood all over the walls. Her mother had gone to the bathroom and started bleeding from her scar. Her uterus ruptured and her stitches opened. She died three times and was resuscitated. Nightmares haunted Storm for months after finding her mother. During one of our conversations, an emergency vehicle drove by and Storm's head shot to the side. She said, "God, my heart's racing. That still happens when I hear a siren" (personal communication, January 19, 2017).

Just as Storm was in a state of shock and is still affected years after finding her mother covered in blood and unresponsive on her bathroom floor, I cannot imagine how my dad is still suffering. As I read and re-read Storm's story I find myself reflecting on my dad more and more. My dad found my older brother on June 7, 2014 lying on the dam of his pond with a bullet hole in his head. My dad had just repaired the dam because the pond was not holding water. Various Spires' have owned the land where my parents live for well over 100 years now. While my dad's Army pilot friends were buying up electronics or stocks and bonds, my dad was buying 10 acres here, and 20 acres there. He purchased most of the land from aunts and uncles. On a couple occasions, he purchased a track of land from a lumber company. It was my dad's dream to retire from the Army on his 250 + acres, raise cattle, spend time fishing, and just enjoy the land with family and friends. He has not walked on the land across the dirt road where the pond is since he found John there almost three years ago. Mom once mentioned that he still wakes from nightmares and that he could not get that image of John lying in the clay out of his mind. This image continues to haunt him day and night. Here we are almost three years later and I am

almost certain that Dad has not talked to anyone about finding John other than in passing comments to my Mom.

Storm had just started 9th grade when she found her mom. She remembers holding her 12-day-old brother and being responsible for her five-year-old sister while her mom was in the hospital. She completely shut down. She could not talk to anyone about it. Everyone would tell her that she was lucky to have her mom, but all Storm could think about was how she almost lost her mom. Her mom knew she needed to see a therapist to deal with this trauma. Since that August of 2013, she has seen a therapist regularly. Two months passed before she could speak to anyone about finding her mother. The night it happened the neighbors came over to comfort her after the ambulance left, and Storm was speechless. She was in absolute shock and could not talk. She remembers trying to talk and words simply would not come out.

Like Storm who is very open and willing to talk, I am not one to be quiet or unwilling to confront any situation headlong. However, the hardest thing I have ever had to do in my life was drive onto my parents' property and face them the day John killed himself. My baby brother had just died five years earlier. I now had to look my parents in the face and try to provide comfort as the last surviving of three children. After receiving the call and seeing my parents that day, I had three hours to cry and think on the road to my parents' house. I called and talked to a good friend and my priest. I listened to music and screamed "You fucking idiot!" intermittently. I was angry with John for doing this to Mom and Dad. I was mad at him for doing this to his kids. They needed a Dad. However, as I got closer to my parents' house I became fearful. How could I look into my parents' eyes? I came to the crossroads just a couple hundred yards from my parents' house. I stopped. To my left, 100 yards away my brothers are buried in the churchyard. My Dad's parents, aunts, uncles, and grandparents are all buried there. This is the church where

we spent Sunday morning as kids when we visited my grandparents. This is the church where I spent every Sunday my senior year when my Dad retired from the US Army and we moved “back down home.” John was in the US Army by then, and Eric was in and out of youth detention centers. Like school, this church was a place of solace for me. Like school, John and Eric wanted nothing to do with that church or any other church for that matter.

To the right at the crossroads, half a mile down the road, was Clyde’s Store, a small country store where we would go as kids and get a sack full of 3-cent candies. And straight ahead was my parents’ house. As I pulled forward through the intersection, I began to say “HELP ME JESUS, HELP ME JESUS ...” over and over almost hyperventilating. I did not pull over, but I could not have been going 10 mph. I turned onto the dirt road seeing the cows in the pasture to my right and the long row of cars lining the driveway. The pond where John shot himself was on my left. All of my uncles, aunts, cousins, and family friends had come to see about my parents. I parked. My heart was racing. I was sweating. Leigh, a close friend of the family, met me at my car. We hugged. We both sobbed for what had to be five minutes. Our bodies shook, and when we stopped sobbing and shaking, somehow I had the strength to walk down to the carport where my parents were sitting and look into their eyes.

There are many parallels with Storm and my brothers. Storm’s experience in a facility for the suicidal had me reflecting on my younger brother who wrote me several letters during almost a year in a rehabilitation center. Like Storm who struggled with a trusting relationship with her mother, Eric discussed a lot about regret with respect to my parents and his daughter Tiffanie who was seven when he went to the facility:

How is Mom doing? I have called very few times and only talked to Dad. Will you keep a check on her for me? I know that this is tearing her up inside. She is probably numb by

now, all the years of pain I've caused her, that is my second biggest regret. [The first is not spending time with Tiffanie while she was younger]. She has tried so hard and done everything she could, I guess that this is something that I have to do for myself. (E.

Spires, personal communication, April 28, 2006)

Eric finished basic training in the summer of 1999. He did not finish his Advanced Individual Training (AIT), which in the US Army is the training received after basic training. He was partying a lot, and he got into some trouble. Dad had to pick him up in Augusta where he was in training for the Signal Corps. The Army formally discharged him. He then moved home and started working jobs here and there. The cycle of working his way up to a managerial position, then just to quit unexpectedly, began. I remember in December 2000, he had been doing harder drugs than just drinking and smoking marijuana for a while. At Tiffanie's 2nd birthday party at my parents' house, he could barely stand up. He finally went out to his car. His girlfriend found him virtually unresponsive. She came inside my parents' house and told me. She did so cautiously because she did not want to alarm my parents. I went outside, and slapped his cheeks a couple times, and he came around. He was stiff as a board as I tried to help him get out of his car and into the kitchen so he could watch Tiffanie blow out the candles on her birthday cake. This was when the awareness of my brothers' struggles with hardcore drugs began for me. Eric was taking Oxycodone pills. He had smoked cigarettes since his early teens. He drank and smoked marijuana a little here and there, and maybe experimented with LSD and ecstasy, but this was a new level of self-medication. And it only got worse. Twice between this episode in 2000 and his yearlong stint at Cantrell Probation Substance Abuse Treatment Center (CPSATC) in 2006, he was admitted for detox in the local hospital. I became accustomed to visiting him in hospitals, youth detention centers, and halfway houses.

Our best times were when he lived with me for about a year in 2002 while I was teaching in Adams County and for about two years (2007-2008) after he got out of Cantrell. He was healthy, strong, and bright-eyed. I always knew that if he called me or returned my calls that things were going well. If he did not call me back within a few hours, I knew things were not going so well. We spoke often from January 2007 through summer of 2008.

In the fall of 2008, Eric went to Texas to work with a clean-up crew after a devastating hurricane season. We talked maybe twice from fall 2008 until his death on July 4, 2009. He was dating a new woman. They discussed getting married. They even talked of moving to Atlanta. She was a Spanish teacher and he thought she could certainly find a job in Atlanta. Then we did not talk for a few months, and I knew things were bad when I spoke to Mom and Dad. When I saw Eric on Thanksgiving at my parents' house, my eyes must have given me away. He would not even look me in the eye. He was thinner than he had ever been. His eye sockets looked hollow. All I could remember was what he wrote in a letter less than three years earlier: "I know that I will be a better person when I get out of here. At least Savannah will never have to see me the way I was in the past" (E. Spires, personal communication, June 26, 2006). Savannah was one year old, and my only child. When I saw Eric, on Thanksgiving, she was three and running around while Tiffanie, who was now eleven, was running around behind her being the mature, compassionate child she has always been. I did not know what was happening when we arrived to celebrate Thanksgiving, but Eric seemed to be arguing with Mom and Dad. He only stayed at the house for a few minutes before taking off with a couple of old family friends. This was the last time I saw him alive. I cannot for the life of me remember if we hugged. I say this because people always told us we gave good hugs. Full-body, back-slapping, shoulder rubbing hugs. I

still wake from dreams where Eric and I are spending time together. Before we depart in my dreams in separate directions, we give each other one of those hugs.

There were better times, though rare. The last of these better times was when the entire family got together to celebrate Eric's release from CPSATC. Eric came home a month early on January 12, 2007, just a day before Mom's birthday. We all got together: both of my brothers, all of our kids, all of my aunts, uncles, and cousins on my Dad's side. We played basketball, kicked the soccer ball, and sat under the carport telling stories and laughing, crying, hugging. I still have the optimism of this experience in my mind when I drive to my parents' house to this day. That was more than ten years ago, but in my mind this is what we do at Mom and Dad's, though this reality is now only in my dreams and memories.

"Send me some more of those wisdom quotes whenever you get a chance" (E. Spires, personal communication, October 18, 2006). Eric asked for these wisdom quotes four times in his last four letters to me from Bainbridge. The quotes came from Covey's *7 Habits of Highly Effective People* (Covey, 2004). When Sandy, my wife, finished her master's degree in Ecology at the University of Georgia in 2005, her committee chair gave her this book as a gift. Her committee chair was a recovering alcoholic. I remember him saying that he was not much for self-help books and that most of it was bullshit, but that this book really helped him become a better person. I read it, and it changed my way of thinking. I shared bits and pieces of it with Eric. I ultimately gave the book to Eric.

After Eric died in 2009, my older brother John – who had always drank and experimented with drugs – began a steady decline too. "God I can't wait to see you guys. It won't be long. Time seems to be flying by which is a good thing. You never did tell me how your weekend at John's went. Did everyone get along?" (E. Spires, personal communication, July 30, 2006).

John lived in Tennessee near his wife's family. He had lived there off and on for about 15 years. The truth was I only took the whole family up to John's house in Tennessee one time, and I swore I would never do it again. Because John drank or popped pills, he became mean. For example, he would ask if I wanted a beer. When I would say, "no, I'm good," he would scoff and start glaring at me and cussing. Then he would leave the room, return, and put his hand on the crook of my shoulder and neck and grab it. We – Eric, my dad, and my uncles – called it the John grab. He always did it when he was inebriated, and it always pissed us off. We were all bigger than John was, so we would grab his hand, sling it away, and say something to the effect of "you need to stop. Chill out. Sit your drunk ass down". He would usually stand there for a second, staring us down, and then say something under his breath and walk away just to do it again a few minutes later. So when Eric asked in his letter how our visit with John was and did we get along, the answer was always the same. No, we did not get along. I, over the course of the next seven years before John died, ventured up to his house by myself to visit John and his family. I always felt it was an act of charity. Kristy, John's wife, always thanked me for coming. While I visited with them, she let down her guard for a minute and spent some time with their daughter Mia, who was born in May of 2006. Preston, John's son, who was born in 1997, rarely emerged out of his room while I was there. Preston had experienced enough of John's unpredictable behavior to know it was best just to stay away from him. While John was sitting in the living room watching movies inebriated, I would go hang out with Preston. The feeling in the house was always extremely tense. John became annoyed when I threw the ball or played video games with Preston. John made comments about how he hoped the two of us would go hang out somewhere else. This was a recurring argument between us from the moment I had kids. I thought of us getting together as a family as just that, everyone in the same room or

yard just spending time together. For John though, when we all got together as a family, that was the perfect time for us guys to get away from everything and everybody and drink.

With John, like Storm, there was definitely a chemical reality. Storm realizes the importance of taking her medication regularly to regulate her bi-polar disorder which if left unchecked can lead to impulsivity, extreme highs and lows, and depression; a bad combination. However, unlike Storm who was willing to seek help and take advice of doctors, therapists, and loved ones, John was generally unwilling to seek help, and when he did, which was rare, he ignored or scoffed at the advice. John once said he never saw his life turning out like this on one trip to Tennessee a couple of years before he committed suicide. I was confused. He had a loving wife, two wonderful children, a secure job, and a nice house. Like Storm, who said several times throughout her story, that there were both several people who were always there and had her back, yet she still felt like she didn't have anyone, John, too, was suffering from depression then as he had been for years and did until the end. Regardless of appearance, John felt alone.

Got back from John's today ... Pretty intense. I told John if he keeps drinking he'd end up alone. He said you think that's so bad? I told him I can't think of anything worse. He said he felt alone. I told him that I'm sorry he feels that way, but that he's not alone. (A. Spires, Journal, July 11, 2010)

John was always either self-medicating with pills to the point of stumbling and falling around, sleeping, or grabbing a 12-pack of beer. In the last couple of years John was alive he had no access to pills, so he picked up at least a 12-pack on the way home from work every day and drank himself into a stupor. Kristy, John's wife, and I spoke several times on the phone in those two years. She was often in tears and I fought tears trying to comfort her. We spoke often about

how scared we were; we both awaited the phone call similar to the phone call when Eric died. We worried that any day now we would receive a call about John's body being found. None of us ever thought it would be by his own hand.

"You coming down on the 4th?" John asked. As usual, I was angry with him. This was the last conversation I had with John. I was on the playground at our local pool watching the kids run around during the conversation, so the kids were constantly interrupting, and this annoyed John. Our conversation took place the last weekend of May; Eric's birthday was May 29, and as Eric's birthday approached, John really struggled each year. John shot himself on the dam of my dad's pond in the early afternoon on June 7, 2014 just a few days after our last conversation.

Just one year before this conversation, John had a nervous breakdown and took off to be with a woman who lived in Philadelphia. When things did not work out with this woman, John had nowhere else to go, and he asked if he could come live with me. I ultimately, after a few days of grappling with it, told him no. He never forgave me and our relationship was icy thereafter. John had no choice but to move down to live with Mom and Dad. He had no job, and no healthy relationships. The woman John had gone to Philadelphia transferred jobs so she could move a few miles from my parents. However, just a few days before John died they had broken it off for good.

In early 2014, I visited twice and noticed that this living arrangement with my parents caused my parents a lot of stress. Both of the times I visited them, John was either on pills "for his back pain" or in a drunken stupor. I ultimately just spent time with my parents; when John woke up right before I had to leave, he was all apologies.

The night before John shot himself, he had gone over to a family friend's house, Joey – or “JJ” – who lived just down the dirt road, and stole beer from the refrigerator. The next morning, JJ and my Dad confronted John about taking the beer. As customary, he made excuses and refused responsibility. He then had an argument with my Mom, walked out, and looked over at Dad and JJ who were working on my Dad's old tractor. He stopped by another old family friend's house, Pebo's. Pebo and Eric, my younger brother, had been good friends since childhood. Our fathers have been friends since childhood too. Like so many of the people who live within a few miles from my parents' house, we are distant cousins. Eric and Pebo spent the week together just days before he went back to Texas. Eric had been complaining of headaches for days, but he would not go to the doctor. Eric died just days after arriving back in Texas, on July 4, 2009. Pebo took Eric's death hard. John walked right in the front door of the house and went straight to the couch where Pebo slept most nights and tried to wake Pebo several times. Pebo refused to wake as he had become annoyed with John. After a couple attempts at getting Pebo up, John left.

Here was John; blown off on the phone by his surviving brother, in constant argument with his parents, estranged from his wife and kids, on the permanent outs with his girlfriend, and now he is not able to wake his remaining friend to talk. He then drove to the pond across the dirt road from my parents' home, parked on the dam, typed “I'm sorry Mom” in his phone, and shot himself in the head. He never sent the text, but this message was on the screen when my Dad found John's phone in the side pocket of the door to his car. John's body was lying in the clay.

Experiences with Mathematics. Storm is presently doing well in her statistics class, but continues to struggle in her algebra two class. Despite the success in her statistics class, she has a deep abiding belief that she is “awful” at mathematics. Making the algebra two struggle even

more intense is the reality that most parents were not required to take geometry or algebra two; these courses are currently required for graduation in Georgia.

Just two years earlier, she remembers sitting at the table trying to do geometry and feeling completely overwhelmed and shutdown. When she was in Coach Teller's geometry class as a sophomore, she recalls him coming in late to class most days, dropping a handout on the students' tables, and working a couple examples on the board. There were a few instances when he would hand out a worksheet, then leave and never come back. Side Note: Isbjorn, in the next section of this chapter, experienced the same instances with the same teacher. I know this to be true because his classroom was next door to mine a few years ago, and during my planning period I would see him outside his classroom making coaching calls most days during class time. He is no longer a teacher at Lakewood High School.

Storm left class most days confused about the lesson. She sat at her kitchen table each evening racking her brains. She would spend a few minutes trying to figure out her homework. Her mom told her she never even took algebra. Her step-dad remembered a good bit of the mathematics, but there were times where they pulled up YouTube videos together and tried to make sense of the homework. On one particular evening, she was studying circles and interior angles. She remembers her dad figuring it out, then teaching her the process:

Storm He's [Dad's] always been really helpful especially in math because he's just awesome at it, he's so good. So I go over and show it to him. He opens it and just kind of looks (scrunching her face) and he was like ... He didn't know what it was. I remember he would try his best, he would Google it and find videos where it would explain it and he would take what he got from the videos and explain it and I still wouldn't get it, and then he'd say ok we're just going to do it this way. And then I would end up getting it right. I

remember on one test, it was about, oh God what was it. Nevermind. All I know is that my dad was showing me a way that he learned, like some other concept of it. And I had worked it out, and I got the answer right, but Teller marked points off because I didn't work it out the way he wanted it. So he actually marked points off. I got the same answer so I didn't understand.

Me Did you ask him about it?

Storm I did but he said it was because it wasn't how he wanted it done. I told my dad and he was furious. He was just cussing. Are you serious! And I was like yes, I'm serious. And he felt bad. He was apologizing to me because he felt that he made me get points wrong. And I was like, it's ridiculous. I don't understand. I don't know. And now it's so weird I really don't ask for help and there's been a couple of times he's asked if I need help. And I said, nope I got it. And he's said he never thought he'd hear that in math. I didn't think I'd say that either.

(transcript, November 1, 2016)

The silver lining in the story is that though Storm's situation is certainly frustrating for any student, she now feels as though she knows what she needs to do to be successful in mathematics. After returning to school last January she has consistently worked all assignments and study guides, sometimes more than once. She has been hyper-focused on finishing and doing so with honors.

As I listen to Storm tell her story, I think of how similar it is to my mom's story. My mom and dad married young. My dad was a senior when they married. He joined the U.S. Army not long after high school. My mom graduated early. She later started college. While my brothers and I were in high school, she earned her associates degree in Computer Technology

from Fayetteville Technical Community College in 1995 with a 4.0 GPA. She then earned her B.S. in Human Services from Mercer University in 2000 with a 3.89 GPA. In 2004, she earned her M.Ed. in Adult and Career Education from Valdosta State University with a 4.0 GPA (Teresa Spires, personal communication, February 15, 2017). She remembered just enough algebra to know that she did terrible at it in high school. I am 38 years old. I have three young children. When my mother was my age, she finished her associate's degree while taking care of three young high school-aged children in Fayetteville, North Carolina as my dad served his last year in the U.S. Army as a pilot for the Golden Knights Parachute Team. My dad retired in 1995, and we moved onto the land my dad purchased over the course of 25 years. John, my older brother, was settled down in Maryland working with the National Security Agency, I was in my 2nd year of college, and Eric was gearing up to enter the US Army when my mom went back to school to work on her B.S. in Human Services at Mercer University. She took algebra 1 in high school in 1971. Almost 30 years later, she put off college algebra until her last summer at Valdosta State University so that she could take just the one class. She loved the class. She was great at it. However, she had it in her head, as so many people do, that she was not a mathematics person. She was 14 when she fumbled her way through algebra one. She had always told my brothers and me to see Dad when we needed help with math. I imagine every time she told one of us to see Dad, that script "I'm not good at math" played again in her mind; based solely on a few months of algebra when she was 14 years old. And here is Storm, after three years of feeling as though she is terrible, awful at mathematics, she now knows that she can be successful in a math class.

Mathematical Struggles. Storm's struggles in math began in high school; the concepts just became more difficult. She was too embarrassed as a freshman to ask questions, and she did

not want to feel dumb. During our conversation, Storm was initially reluctant to say how she truly felt about her freshman algebra one teacher, Ms. Lowe. Ms. Lowe was known for being strict and belittling students when they asked questions. Where Storm's other teachers encouraged students to ask questions during the lesson, Ms. Lowe would reply to a question with a sharp, curt response. She frequently responded to the students with "why didn't you study your notes?" or "we did that yesterday, didn't you pay attention?" After a couple of days of this, there was virtually no dialogue in algebra class. The class curriculum consisted of a handout out with fill-in boxes as Ms. Lowe worked the examples on the board. No questions, no dialogue; only a lecture in the true sense of the word.

After her experiences with Ms. Lowe as a freshman, and her experiences with Coach Teller as a sophomore, she had fully lived into an identity of being "awful" at mathematics (personal communication, October 18, 2016). Even in her algebra two class the previous semester, she would feel as though she did not understand the material, but then she would do well on the test. She made A's and B's all semester long, but in her mind, she was a fake, a phony. She was just getting lucky. The script was playing her mind. "You cannot do this."

Storm's experiences in her current algebra two class are similar to DJ Panda's. Storm expressed frustration with the fact that "the tests are always so much more difficult than anything we've done in class ... like the difficulty level was turned up to 10 or 15" (personal communication, February 21, 2017).

For Storm, the daily struggle in her algebra two class is knowing she has several questions, but she has to muster up the courage to ask because students "start laughing and make comments" (personal communication, February 21, 2017). Coach Alexander makes assumptions about background knowledge, so Storm raises her hand: "I'm thinking this is a foreign language,

I am not getting this ... and students say ‘seriously, she doesn’t get what that is’ ... I really just do not remember and need clarification” (personal communication, February 21, 2017). With no dialogue in Coach Alexander’s classroom, Storm makes two powerful analogies to help explain her daily experience in her algebra 2 class. One analogy is likening her experience to being dropped off in a foreign country where English is not the primary language.

It doesn’t make sense unless someone takes the time to say here’s what you have to do and takes the time to have a conversation with you otherwise you are just going to sit there and go lower and lower and lower until you figure it all out. (personal communication, February 21, 2017)

The second analogy for her mathematical struggle during a test is like that of a baby. She feels as though she understands the concept, but then she just cannot get it down on paper. “The baby knows what she’s saying to the parent, but the parent just hears the baby crying” (personal communication, February 21, 2017). We as teachers hear our students’ crying, but do we get it? Do we just throw a diaper on them when they are hungry? Do we rock them when they just need their diaper changed? Can we hear our students if there is no dialogue in the classroom?

Mathematical Identity, Teacher Effect, and Expectations. Storm’s identity as a mathematics student and in the mathematics classroom is muddled. Due to her current success in her statistics class, she is beginning to redefine her identity, but there is still a lingering identity as someone who is “awful” at mathematics. She once again feels “like a foreign student. I still feel that way. I’m in this place, and I don’t really know anything” (personal communication, February 21, 2017). Like DJ Panda, she looks around and other students are getting it and getting good grades and she feels scared to speak up because the teacher and the other students

might “shut her down ... and [she] doesn’t want to look like a fool” (personal communication, February 21, 2017).

Storm stated teachers’ expectations of her are not based on her being a female or being white, but she does feel like teachers have certain expectations of her based on how she performs in their classes. She has a need to ask questions often and in some classes this builds her up as a “good student” and in others as a “needy student who just doesn’t get it” (personal communication, February 21, 2017). In her physics class for example, Mrs. Hendrick explicitly told Storm that she had high expectations for Storm because Storm always took notes, worked hard, and asked good questions. However, in Storm’s mathematics classes “they’ll [teachers and students] bash you if you ask questions” (personal communication, February 21, 2017).

Experiences with Care. Storm is now in her 4th year of high school. She described most of her teachers as being caring, though her freshman and sophomore mathematics experiences were not experiences she would describe as caring.

Her relationships with Mrs. Hendrick, her freshman biology teacher, and Mrs. Norton, her junior physics teacher, have developed over time. Since her freshman year, Storm would stop in and visit Mrs. Hendrick, who always greeted her with a huge hug and a “Hey Storm!” Mrs. Hendrick and Mrs. Norton are close friends inside and outside of Lakewood High School. They were both fond of telling Storm that she was their “adopted student child”. They both have three children, but what is one more?

I too experienced the warm and dedication of Mrs. Norton and Mrs. Hendrick. I taught algebra 2 almost exclusively for four years, which is a junior class. Mrs. Hendrick and Mrs. Norton were the two physics teachers that also taught my students. Over the years we have become friends. We often joked with each other about who was the most beloved teacher.

Storms' relationships with her teachers extend beyond her experiences at Lakewood. When Storm was 16 years old, she was baptized at a large Baptist church near Lakewood, she remembered several students and teachers clapping and screaming as she arose from the water. Storm recalled crying and hugging several teachers and students after the event. One of her teachers who she described as a genuinely caring teacher – Coach Holtner – was standing and shouting her name as she dried off. We spent a considerable time talking about him. He is a retired Marine, and I shared that he is an extremely nice person. He is the kind of man that when you meet, he makes you feel as though you are important to him instantly. I joked about how we would meet in the teacher workroom. I would ask how his day was going and he would say in a voice that could only be described as a professional wrestler “hanging in there brother” (A. Spires, personal communication, November 1, 2016).

Storm also experienced caring teachers in her other schools prior to Lakewood. She told a fascinating story of her 2nd grade teacher, Natalie Dollar. Storm loves fractions to this day. “Her name was Natalie Dollar, so that N over D, so I’ve always remembered that” (personal communication, November 1, 2016). In a fraction, the top number is the numerator, and the bottom number is the denominator. Natalie Dollar, Numerator Denominator. It is unfortunate that Storm only spoke of three teachers who she did not consider generally caring in nature or nurturing a caring environment in the classroom, two of which were her high school mathematics teachers. She spoke of extremely strict teachers whom she still perceived as caring. She shared a teacher with her eleven-year-old sister. This teacher has a reputation for being very strict, but the kids still loved her. Every day was a new day with this teacher. If she had to reprimand a student, she would move on quickly and not hold that particular behavior over the child’s head.

Conversations of care led us to discuss the true dilemma teachers experience when they try to balance the tension between being a content expert and a caring adult. This is actualized in the compartmentalization in elementary schools. Students experience content specialists more often with compartmentalization, but the depth of relationship is not the same. When I was in elementary school, I had one teacher and she taught me all subjects. Over the course of a year, we became close. She was my teacher. My kids' experiences are very different. As early as 2nd grade they begin to have compartmentalized days, so even though they have a homeroom – main – teacher, they do not develop the kind of relationship I would over the course of six or more hours a day with one teacher. Storm suffered through this duality with her chemistry teacher. Her chemistry teacher, Ms. Tanner, was teaching chemistry for the first time. Storm found Ms. Tanner to be extremely nice, but she often did not know the chemistry content. Ms. Tanner would sometimes stop mid problem at board and have to give alternate assignments while she figured out the problem off to the side. Storm hated chemistry class. She barely passed. She still struggles with significant figures, a concept introduced in chemistry. She has worked with Mrs. Norton this year to fill in some of the gaps when necessary. Storm told Mrs. Norton – her current physics – teacher of her deficits with some of the skills learned in chemistry. Mrs. Norton highlights specific skills so that Storm can focus solely on learning that skill for the assessment. This puts Storm at ease and is one more example of how caring Mrs. Norton can be.

Despite Storm's struggles in Ms. Tanner's chemistry class, she still speaks to her often as they attend church together. While we discuss Ms. Tanner's first-year struggles with chemistry, I confide with Storm about my struggles with geometry the first year I taught it. I rarely struggled with algebra, trigonometry, or calculus the first year I taught them. We studied these topics multiple times throughout my math program at University of Georgia. However, the

geometry I was teaching I had not seen since my 9th grade year of high school. As I taught it for the first time, I was learning it as I went, and I often felt uneasy as I taught the topics.

Storm described actual events that she perceived as caring. She also discussed what caring was in her mind. She recounted in detail a situation in which a teacher demonstrated a lack of care. Ms. Tobin, her business education teacher, exemplified this. Once, a student in the class was eating a candy bar. This student had diabetes, and needed to watch his blood sugar. Ms. Tobin was aware of the situation, yet she snatched his candy bar out of the student's hand and threw it away. These types of interactions were common in her class. She retired recently, but she certainly exemplified what DJ Panda sagely referred to in the last section as the teacher "who was in it for a check, not to connect with students".

Another instance that makes Mrs. Hendrick stand out as a caring teacher both in my mind and in Storm's is when Storm received word that one of her friends had committed suicide her freshman year. On this day, as Storm checked her phone, which is against school policy to see the time, she saw a message about her friend's death. Mrs. Hendrick knew that Storm was a serious student and that she would not have her phone out under normal circumstances. Mrs. Hendricks knew something was wrong and talked to Storm after school. Storm told her what happened, and they held each other, crying. Mrs. Hendricks also knew the young man who had died. Mrs. Hendricks then walked Storm to the counseling office. That was a sad day for all at Lakewood. Mrs. Hendricks could have focused on the phone violation, but she viewed the issue first and not Storm as a student breaking a rule. And that made all the difference in how Storm now perceives Mrs. Hendrick as caring.

Through Storm's positive daily interactions Ms. Davis, Mrs. Norton, Mrs. Hendricks, and other teachers, relationships have been developed and sustained. These teachers, by noticing

Storm, by taking the time to talk to her and nurture her have been a large part of her successful return to Lakewood, and she knows it, and is grateful.

Getting Back on Track to Graduate and Beyond. As I sit typing up this chapter, Storm is finishing her last semester at Lakewood. She will then take two more short online courses and finish her high school experience in July. She is excited about her future; Storm wants to major in criminal justice and work in forensics. Ultimately, her dream job is to work for the FBI. During one of our first conversations, she brought up wanting to go into forensics. I shared with her that my sister-in-law works CSI in an adjacent county. She replied with excitement and surprise when I told her that four generations of my in-laws are law enforcement in Atlanta and that my sister-in-law works CSI locally: “That’s awesome! I love that, I love watching criminal minds”. I replied “My wife watches all of the cop shows, all of the CSI’s, Criminal Minds, Bones. If I’m in the living room with her, I’m watching one of them too” (personal communication, October 18, 2016).

The stories Storm shared about caring teachers really resonate with me. I like to think most of my students perceive me to be a caring teacher. The most difficult part of being a high school mathematics teacher for me is that some of my students are suffering through serious academic, personal, and social struggles. Yet despite their struggles, I am trying to make sure they learn something as difficult as mathematics that adds to the stress. John, like Eric, was in the US Army. He met his wife while working for the National Security Agency at Fort Meade, Maryland near Baltimore. John worked for several large corporations as a hardware and software computer specialist. He decided after changing jobs several times that though he had experience in several coding languages (UNIX, C++, and Java) that having a bachelor’s degree in computers would make him even more marketable. He took leave from working full-time

with computers and worked for UPS part-time while he worked on his four-year degree through Phoenix University. Like my mother, he had earned credit for every course he needed for his degree except college algebra. After taking college algebra three times, and failing it each time, he simply gave up. He and I spent many hours on the phone while he was taking the class for the third time. He would think he had it, but then he failed the tests. He went back to work with computers. He worked for the board of education in a small, rural county in Tennessee where he and his family lived.

Eric and John went through many big storms. Certainly, the fact that neither of them finished high school and John's struggle with not finishing college added to the stress in their lives. Ultimately, they did not emerge in this world from all of their personal storms. Nevertheless, Storm has shown perseverance. She has emerged through storm after storm. She glows with hope and assurance that better days are to come. Her story invited me into her struggle and showed me how to be a more caring teacher and better person.

Isbjorn

Resonant Quote: "Some teachers are more interested in learning and interaction, and others are just concerned with structure. They put it [the structure] in place, and that's what they do" (Isbjorn, personal communication, October 11, 2016).

Personal Background. I first met Isbjorn at a Kroger Starbucks. The space was an open and bright environment. The seating area was directly in front of the entrance to the Kroger just inside the sliding doors. I initially noticed Isbjorn is white with dark hair, a fair complexion, freckles, a u-shaped nose-ring, gauged ear piercings, and what appeared to be multiple tattoos or Sharpie sketches on her arms. Her hair was dyed to be dark – almost black – but despite the dye, the light auburn peeked through in spots. I learned later that several of the images on her hands

and arms were actual tattoos. She is soft-spoken with a gentleness about her nature, and she is generally reluctant to share details. She is not shy by any measure, but she is short and truculent in her responses. I find myself saying, “tell me more about that” or “what do you mean by this or that” frequently. She exhibits a quiet strength and has a heightened awareness that gives her a sage, old-soul quality.

Isbjorn is currently a junior at Lakewood High School. She has moved several times in her young life, and though she attended several different elementary schools and has very little traditional middle school experience, she has attended Lakewood High school for 9th, 10th, and now 11th grade.

Isbjorn is “really into the arts” (personal communication, January 26, 2017). She likes to sketch and attends concerts on a regular basis. She is into metal music, and helps sell merchandise for a former Lakewood student who performs in a metal band. I actually heard them playing a few months earlier. She and her friends are into “stick n poke”. Stick n poke are homemade, do-it-yourself tattoos. Isbjorn has several on her hands and arms.

Isbjorn initially lived in the city nearest Lakewood, and she attended one of the elementary schools that feeds into Lakewood. She moved to Arkansas and attended a rural school for 4th – 6th grades. Her parents divorced during this time, and she moved Nashville to live with her mom’s parents due to financial hardship. She only attended a school in Nashville for part of 7th grade. She moved back to the Lakewood area and attended Pantheon, the middle school that feeds into Lakewood. Her 8th grade year started with a broken ankle. She finished most of her 8th grade year with online courses. She is currently a junior at Lakewood where she has attended three consecutive years without interruption.

Few School Memories. Isbjorn had virtually no stirring memories of elementary or middle school other than a single middle school math teacher. She recalled the class, but not student-teacher interactions. Because her 7th grade mathematics teacher at Pantheon was quirky, she thinks back on this class fondly, “I think she was foreign. She was really bubbly and a little out there. She made it interesting” (personal communication, October 11, 2016). Isbjorn had a friend from elementary school in the class. They would spend time together, which made the class for enjoyable for her. As we talked about the day-to-day operations and vibe in the room, she began by describing a typical day with respect to instruction. She noted that the class could be chaotic, but not in a way that generated discord or unease. Isbjorn ascribed the lack of typical classroom discipline in part to the fact the teacher was foreign and might have been more comfortable with a more relaxed classroom environment. The teacher generally used handouts then worked problems and answered questions from a digital projector. Though her friend made the class more pleasant, Isbjorn attributed her delight in the class to the teacher. The connection Isbjorn felt with this teacher and her astute ability to know why she had such a connection marks her heightened consciousness of self:

I felt really comfortable in there. She [the teacher] was really out-there and weird so I think that she wasn't really strict. So her being laid back in an anxiety type of way made me feel like she was also probably all over the place. Like I was. She made me feel like since she wasn't perfect I didn't have to be perfect either. (personal communication, October 11, 2016)

The Challenge: A Blessing and a Curse. As I read and re-read Isbjorn's transcripts and reflect on our conversations, I realized more with each reading and each meditation that Isbjorn reminded me of my baby brother Eric. This is not just a superficial similarity; yes, Eric had dark

hair and piercing blue eyes. He also had a quiet, reticent confidence that drew people to him. He had multiple piercings, several tattoos including one that covered the whole right side of his neck that was inked in October 2008 just months before his death. He too was sage and aware of the social vibe in every space. He could feel everything, and though he did not often express himself verbally, when he did, it was deep and articulate. All of these qualities in Eric make me reminisce of him as I meditated on my conversations with Isbjorn.

However, it is more than that. When Eric died, I had been a teacher for nine years. The year he died, my colleagues at Oak Rapids High School recognized me as the Teacher of the Year. I have not won many awards. I never considered myself to be a highly-effective teacher prior to winning this peer-selected award. But I was certain that I did not put up a wall with my students. I got to know them, I joked with them, and I cared about them as people. Eric maintained that if he had had a teacher like me he might have stuck it out and graduated high school. In one letter he wrote me while at the CPSATC, a halfway house for recovering narcotic addicts, he stated:

I love you Bro! You have always been there for me. You're the best friend that I have ever had! I mean that! I wish I had had a teacher like you. Who knows. OK, I'm tearing up here, change of subject. (E. Spires, personal communication, April 28, 2006)

As Isbjorn mentions the anxiety-inducing effects of school, as she mentions enjoying the more relaxing and comfortable environs, which she finds in nature, I think of how Eric struggled with anxiety and depression. He struggled greatly his entire teenage and adult life with a self-medicating addiction to any substance that would numb the pain and give him relief.

You know, when I get out next February I will have a year of sobriety. That will be the longest that I have been sober in thirteen years. I know that I have to do some real soul

searching while I'm in here. It's actually scary as hell thinking of what I might find.

This is my last chance though. I feel that I'm running out of time quick. I'll be 26 next month and have not accomplished jack. (E. Spires, personal communication, April 28, 2006)

I feel as though Eric's struggles with addiction more than any other single factor led directly to John's suicide in 2014. John – our older brother – expressed multiple times to my parents, his wife, and me about feeling like it was his fault that Eric died. John was the one who introduced Eric to many of the drugs he experimented with over the years. This guilt led John to abuse drugs and alcohol to the point of losing jobs and ruining relationships. His addiction was the primary instigator of strain and ultimately caused the unraveling of his relationships with his wife and kids, my parents, his friends, and me.

I personally never understood Eric's struggles while he was alive. I just thought I was strange in that I seek out difficulty; I find purpose in overcoming challenge. I chose mathematics as a major because it was the most challenging subject I had experienced up until that point. Now this study wreaks both challenge and reward. While I was running toward difficulty, Eric was seeking solace. He was trying to find his place. Throughout this study, through the voices of my participants I hear calls for comfort, calls for less stress, less anxiety. As I listen to my participants and re-read my brothers' letters and emails, for the first time I realized I somehow learned to thrive under stress and channel my anxiety in ways that are productive. I could not see the crippling effects of this stress on my brothers and on my students.

I always felt at home on this earth, so I could seek out struggle. My parents, my older brother John, and I spoke often before Eric died about how he never quite found his place. He always seemed to be just kind of floating. He did well at everything he attempted, but it was

never his. He felt his only identity was that of a “fuck up” who “had not accomplished anything” (E. Spires, personal communication, July 28, 2006).

I certainly do not believe Isbjorn to have any experience with altering substances other than coffee, but her talk about less anxious spaces and warm, natural environments had me thinking of Eric’s seeking alleviation from the pains of life and how it might relate to my own practices in the classroom. Experiences I find in the mathematics classroom to be challenging and thus rewarding might be unnecessarily stressful and anxiety inducing experiences for many of my students.

Open, Natural Spaces and Gearing Up for School. As I mentioned earlier in this chapter, Isbjorn does not have many memories of people and interactions in schools, but she has memories of contexts; especially those that involve being outside of the classroom while still at school. Leaving the classroom for Isbjorn meant leaving the cramped confines of concrete walls and fluorescent lights. She appreciated the fresh air and open space.

I meditated on how venturing outside shaped my appreciation of schooling. I have rich memories of the few times I was able to venture out of the traditional classroom setting both as a student and as a teacher. These experiences are not only rich with learning, but also those I consider fond and inspirational. I remember my shop class going to our old gymnasium while I was at Mannheim American Middle School in Germany to test the speeds of our boxcars. I remember exploring outside at the same school in my 7th grade life science class to examine the leaves and other flora. I remember once on a gray, cold winter day, my entire language arts class spent an hour outside. Our teacher took us outside in the hopes of inspiring each of us with a poem concept. I eventually wrote a poem that gave me the pride and confidence I needed to

continue writing and journaling. The poem that I wrote and published in our senior journal

Senior Musings:

Escape

Infinite shades all of harsh-smitten gray

behold nature's sensual delights on this cold, abysmal day.

Cadaverous trees forming a deceptive horizon

conceal and swallow land's putrid desolation.

No more do Autumn's leaves arise in one's mind

at the mention of orange, only iron oxidized.

The sweet aroma of liberation, the pungent stench of death and decay,

the predominant numbness, though unfortunately not innate,

enthrall our thought patterns to the point of schizophrenia

as the Black Forest suffocates, and ashes blanket Brasilia.

Caustic sulfur penetrates the tip of our tongues

and only machinery's nefarious clamor assures us we're home.

In a decadent world of pseudo-peace and man-made hills,

from "constructive, progressive" nature to roaring, restive wheels.

"Why?" escapes me!

(Senior Musings, May 1996)

I remembered initially being annoyed that we were outside on such a cold day, but then I started to see the world around me. I began writing. I experienced a slower, less hurried moment and appreciated it. Isbjorn remembers even the small gestures that made for a more relaxed feeling.

One such experience was when Mrs. Taylor would prop open a door so that students could have more natural light and hear the hum of cars driving by. Another experience of calm through nature was when Isbjorn would sit in the pit – a recessed concrete area with picnic tables in the back of Lakewood – in the mornings. Lakewood was built in the 70's and has very few windows and a lot of concrete as landscape. Isbjorn described her much-coveted time in the pit:

I used to just stay in the lunchroom in the morning but this year I've been going to the pit to get more fresh air. Last year I used to hang out every day after school there for a couple hours just to kind of wind down. I think that I don't do that this year, so I think I kind of replaced it with going there in the morning. It gives me a separation between home and going to school. It's like a little period where I can get ready to go to school.
(personal communication, October 19, 2016)

As Isbjorn discussed her need to gear up for school, I thought of my uncle who drives almost two hours to work four days a week. He has told me on several occasions that he needs that entire two hours to get psychologically ready for work. He is the epitome of an introvert; I would venture to say even a hermit. He can happily spend weeks at a time by himself. He is always building something on his land, putting up a fence, building a small pond with his backhoe, or just walking the grounds. The constant performance of modern existence is steeped with anxiety for so many of us who need the time and space to recharge and mentally prepare for the day.

Stories of Caring. In elementary school, caring is expected to be a primary attribute of a teacher. Though most people I talk to say it is important for even the high school teacher to show care toward students, descriptions of what this looks like in practice are muddled at best. Our culture generally expects high school teachers to be content specialists first. As our

conversations focused on caring at the high school level, Isbjorn mentioned three high school teachers who she perceived as caring. These three teachers are Ms. Davis, her 10th grade British literature teacher; Mrs. Taylor, her 10th grade geometry teacher; and Frau Musik, her German teacher now for the third year. Once again, she chose these three teachers because they made an effort to talk to her on a regular basis. She related with Ms. Davis because they had a similar style and similar interests in music. Isbjorn credited Mrs. Taylor's ability to connect with the students to her having kids and just being an emotionally perceptive person in general. Because of this, Mrs. Taylor was more concerned with teaching and engagement than simply structure and routine. Frau Musik was different and always switched things up in the classroom, but always in a way that was easy-going and low anxiety.

Isbjorn not only found ways to prepare herself for the social and psychological onslaught of schooling each day, but she found help in a teacher. "I just liked being in her class. I liked being around her" (personal communication, October 19, 2016). Ms. Davis for Isbjorn was more than just a language arts teacher. Though Isbjorn liked language arts as a subject, Ms. Davis challenged her in ways other teachers did not.

One instance of Ms. Davis challenging Isbjorn was during the class' reading of Shakespeare's Othello. Students for the most part volunteered to read and act out parts, but Isbjorn remembers Ms. Davis choosing her part for her. Main characters acted out the play for a couple days, and each day began with an assignment of parts depending on when smaller parts would emerge throughout the play. Isbjorn recalls the humor that students would interject to make the play come alive. Because Ms. Davis was in her early 20's, she too would translate the play into a more youthful parlance to make the dialogue more digestible for the students. The 2nd day of the reading of Othello commenced. As the class assigned the parts, Ms. Davis was

determined for Isbjorn to participate. She had the perfect part for Isbjorn: The prostitute. The prostitute was a strong, marginalized woman. Isbjorn did not remember much about those couple of days, but she remembers that Ms. Davis encouraged her to participate, and she spoke of this attention in affectionate tones.

For Isbjorn, teachers noticing students was the single most important quality that made for a caring teacher. As mentioned in the previous story, Ms. Davis noticed Isbjorn on a daily basis. Isbjorn mentioned this act of confirmation more than any other characteristic as primary to a caring relationship between a student and teacher. Ms. Davis confirmed Isbjorn not just as a student, but also as a person who was cherished and appreciated. Isbjorn not only shared various instances in which she felt cared for by teachers, but she articulately laid out a description of what makes a teacher caring in her eyes. Most notably in her description is that teachers who care notice small things, they pay attention, they interact with students, and they get into it. In general, teachers who care are not only professional, but also personal.

For Isbjorn, caring instruction was very similar to what caring looks like in general. “If you saw someone in public that you knew, making an effort to talk to them instead of just ignoring them” (personal communication, October 19, 2016). Noticing the person was central to every story and description Isbjorn made about caring. For Isbjorn, caring cannot just be about the structure of instruction. It must be deeper, more personal. It must involve engagement at the personal level, not just about knowledge, but also acknowledgment of the person in the room. Caring instruction entails paying attention to how students react to the lesson. The classes she mentioned enjoying the most involved teachers engaging classes in ways that are at least partially dependent on the interests in the room.

In our second conversation, Isbjorn elaborated more on not just the attributes of a caring teacher, but more of her experiences that she thought exhibited care by her teachers. She recalled Frau Musik explicitly saying that if she knew that a student was not having a good day she would refrain from calling on them. If a student was feeling badly, Frau Musik would have them put their heads down, then get them right back into the swing of things the next day. Like Frau Musik, Mrs. Taylor would also notice if a student was having a bad day. She approached them and asked if everything was ok. She would also make sure not to call on a student if they appeared to be tired or sick or just having a rough day. Ms. Davis shared interesting things about music or art with Isbjorn. She simply went out of her way to reach out and connect with her students. These conversations lasted a minute or two, but they made all the difference.

High School Mathematical Experiences. Isbjorn experienced a rollercoaster mathematical experience. She had a relatively uneventful freshman year, but when she moved into an accelerated track course to begin her sophomore year, she experienced a few weeks of intense struggle before moving into a regular geometry course.

Her freshman year in algebra one was with Coach Teller. She remembered Teller as unenthusiastic. The class was first period, and she recalled being tired most days during this class. Coach Teller generally rushed through the lesson then students practiced for the rest of the period. Most days followed this pattern; a quick lesson followed by a worksheet. He entered the class well after the bell many days, so she sat and chatted with her friends until he arrived. Somedays he came in as late as 10 minutes after the bell, handout a worksheet, taught a couple examples, then disappeared again to make phone calls in the hallway. She demonstrated learning some algebra, but his attitude was one of complete indifference. The material was easy for

Isbjorn, and she did not receive help directly from Coach Teller. On the rare occasion when she did need help, she worked with another student.

Her 10th grade mathematical experience was rough for the first several weeks of her sophomore year. Isbjorn wanted to be in a more challenging mathematics class. She moved up to the accelerated track for geometry. The curriculum consisted of the second half of a traditional geometry course and the entire year of a traditional algebra two class. Because students are supposed to have completed the first half of the traditional geometry course in the freshman year accelerated algebra one course, Isbjorn found herself behind from day one. Ms. Towers was the only accelerated geometry teacher. As described by Isbjorn, she was a great teacher, but she taught material so quickly that Isbjorn left each day confused. Ms. Towers covered at least one section in the textbook each day, and every day began with a warm up. Everyone, except Isbjorn it seemed, was frantically working the warm up. The other students had the geometry background to begin the problems as soon as they sat down. As the class discussed the problems, Isbjorn felt lost. She did not know the essential skills necessary to begin the daily warm up problems. This daily pattern of confusion during the warm up, tornado-like lessons, and utter confusion while attempting the homework persisted for the first three weeks of school. Then, when she and her mother went to open house and met with all of her teachers, they realized that she was in a class of students who were generally on the math team and had been a small cohort of honors mathematics students who spent an hour or more doing math every night. Isbjorn and her mother talked with Ms. Towers and decided that the traditional geometry course would be a better fit given her mathematical background. The next day Isbjorn changed her class to the regular geometry course and noticed a difference immediately. She went from completely overwhelmed and confused to easily handling the workload. Not only was the

workload more manageable, but Mrs. Taylor took stock of students' interests and tailored the lessons and projects accordingly. Isbjorn called the class relaxing and comforting; very different from the frantic storm-like recollection of Ms. Towers' class.

Isbjorn's current algebra two teacher is Coach Smalls. She described him as a good teacher, full of energy, but "he's not my kind of teacher, he's more like motivated. He's a coach, so he's more about motivational talks and stuff like that. And I'm not really into that" (personal communication, October 11, 2016). She enters the class with dread because Coach Smalls expects students to be on task from bell-to-bell. I admitted to Isbjorn that her description of his class sounds more like my class than her descriptions of the other classes. Though I do take the time to have sidebar conversations with students as they work, I generally expect my students to fight the urge to chitchat and remain focused on the task at hand. Isbjorn is able to keep the math dread at bay often because Coach Smalls allows students to listen to music when they are practicing problems. We discussed how listening to music got me through so much of my work in high school and college. I came home every day in high school, put a new tape in my stereo, hit play, and completed my math homework. I was not excited so much about doing my homework as much as the excuse to listen to music. To this day, I look forward to many of the activities I do such as mowing the lawn, lifting weights, working out, painting the trim on the house, blowing the roof, and a myriad of other activities because I can put on my ear-buds and listen to music.

The vast majority of Isbjorn's experiences in high school mathematics have not involved struggle. Her only experience with struggle was during her first three weeks of her sophomore class in Ms. Towers' honors geometry class. The most difficult part of her experiences of struggle in the class was the reality that it seemed as though everyone else was getting it and she

was not. In that short time she was in the class, she did not begin to question her identity as someone who was able to do mathematics. She simply thought the material was being covered too quickly. During those short three weeks, she thought that this was how mathematics was going to be for the rest of the year.

Like Isbjorn, I had a similar experience with a creative writing class I had in 6th grade with Ms. Patton. I vividly remember feeling as though I was good at all areas of school, but starting my 6th grade year I began looking around and comparing my feedback to that of other students, and I noticed I had a lot more red marks on my writing than my peers.

Like Isbjorn's experiences in Ms. Towers' class, we all crammed into Ms. Patton's class. To this day when I sit down to write I think about that class. Ms. Patton would encourage us to take our composition books and just free write. I remember thinking I had nothing to say. There were no provocative questions, no plot lines, and no narratives in my 6th grade mind. I usually started tinkering around with a story that I once heard or read. Ms. Patton allowed us to sit anywhere including in the corners of the room and in the hallway. I remember being so distracted, unfocused, and unengaged. We would turn in our papers, and mine would come back "bloody" red. Then the multiple drafting sessions began. I remember feelings of frustration and dread as other students around me continued to get positive feedback. My interactions with Ms. Patton were always short; I sensed irritation in her voice as she jabbed at my paper with a red pen. I was an uninterested, energetic 11-year-old boy with terrible penmanship who would rather have been playing basketball or soccer.

Where Isbjorn experienced this same dread for three weeks, I remember feeling it for that entire sixth grade school year. I began to enjoy writing again due to less pressured, more engaging 7th and 8th grade classes where there was more of a demand for conversation in the

classroom instead of on the spot writing. By my senior year, as exemplified by the poem earlier in this section, I learned to appreciate the gift of writing and exploring my emotions and thoughts through poetry and narration.

Mathematical Struggle. Once again, Isbjorn only had the three weeks of struggle her sophomore year of accelerated geometry course. She did express reasons for why mathematics classes tended to be more difficult in general. Her analogy for mathematics is that it is like a puzzle. There is no freedom to deviate. Even when there are multiple methods, the teacher expects the student to perform the problem using a given method. Due to this fact, once a student stumbles on a concept, misses a key term, or lacks a basic skill, the struggle begins to compound. “For example, I missed a few days in elementary school and they were fraction days. I still don’t know how to add and subtract fractions” (personal communication, February 22, 2017). I pressed her on this. After all of these years, why has she not taken the time to learn this skill? “I’m not sure. People have tried to show me, but I guess it was always just such a small part of the process I was able to maneuver around it” (personal communication, February 22, 2017). During her struggles for three weeks, she mentioned just grinding through the day and thinking it will get better the next day. She left confused, but in her mind, she would plug the holes in her understanding the next day. Then the next day, she would plug a hole or two, but then another batch of confusion was unleashed. For Isbjorn, this was a very short trip into the world of perpetual struggle, but for DJ Panda and Storm, they have suffered three years in this world. “If you miss one thing it throws everything off with math especially” (Isbjorn, personal communication, February 21, 2017).

As I found myself reflecting on the stories of mathematical struggles of all three participants, the image of a see saw – or as we say in the South, a teeter-totter – came to mind.

There is a fulcrum, a tipping point, that comes on a person quickly as they walk from one end to the other. For Isbjorn, the struggle with fractions did not keep her from reaching that fulcrum. She made it there, and the teeter-totter thrust down. However, for DJ Panda and Storm, especially in their algebra and geometry classes, they just lived on that delicate point where the teeter-totter was wavering back and forth, never quite touching the ground. They have not quite experienced the confidence with the mathematical world that comes in the physical world when the see saw strikes the ground; that feeling of having conquered that physical space. Isbjorn leaves mathematics classes each day with the confidence that she has conquered that space. She can have years of assurance that this mathematical space is one that she occupies with confidence and myriad success.

Mathematical Identity and Teacher Effect. Despite her confidence in her mathematical abilities, Isbjorn considers herself pretty average. “I mean I’m good at math, but I also don’t find a lot of interest in it” (personal communication, February 22, 2017). She considers herself the creative type, and in her mind, there is no place in the mathematical world for creative types. What if she had a Ms. Davis for a math teacher I asked her during one of our conversations, would she be more interested in mathematics?

Yeah, I think it has to do with a teacher’s enthusiasm. A lot of math teachers I have had haven’t identified as the creative type, it’s usually one side or the other. In my past I’ve had a lot of coaches, so they’re never really outgoing and into it as much. If I had someone who was into it and made it fun and made it more fun I would enjoy it more.

(personal communication, February 22, 2017)

I personally struggled with Isbjorn’s image of a typical mathematical person. Computer animators, architects, and a myriad of other professionals view themselves as both mathematical

and creative. Isbjorn has not experienced the merging of these two identities, and it has certainly shaped her mathematical identity as “average” because in her words she is not interested; thus, she is OK at mathematics. Her image as a mathematical person is one that does not allow for creativity.

Stereotypes and Expectations. Though Isbjorn never experienced teacher expectations based on her race or gender, she did regularly have students make assumptions based on these factors. “People assume I’m a super geek at math because I don’t really talk a lot. So people assume I’m always working, which I am, but people assume if you’re not loud and rowdy you must be super smart” (personal communication, February 22, 2017). Now that Isbjorn is in her junior year, students tend to work with friends, but she remembered several times her freshman year and her sophomore year when students who were not white would approach her and students would “assume I’m smarter because I’m white. I felt that people who weren’t white just assumed it which it wasn’t true, but it was assumed” (personal communication, February 21, 2017). She remember comments like “oh, you know she’s smart” were made. Never in a bad way or in a way that made for awkwardness, but nonetheless Isbjorn likened it to her being quiet and/or white.

Interests and Future Prospects. As Isbjorn shared her plans for “after high school” with me, I made note of the fact that I was proud that Isbjorn plans to attend Georgia State. She mentioned that she would like to continue her interests in forensics or maybe entrepreneurial fashion. I shared with her that my sister-in-law who is also into metal music, the arts, and fashion works forensics with an adjacent county CSI (crime scene investigation). Isbjorn was not sure she could handle all of the blood and death. I state that my father-in-law was the investigator in the early 80’s in our large, southeastern city when the child slayer was at large.

He had a tough time bringing that home every night given that my wife and sister-in-law were young children at the time. I shared that my sister-in-law has no such problem and is very matter-of-fact about it. She might be on the phone with my wife and she will say something to the effect of “someone was shot, I’ve got to go” (personal communication, October 19, 2016). We both laugh in a way that people do when they know they should not laugh because of the seriousness of the situation. We laughed like siblings giggling during a funeral.

Unlike my sister-in-law, who has a knack for emotionally detaching herself from the grave nature of her work, teachers really cannot be the teachers students need if they turn off their emotions to their work. Ms. Davis’ language arts class was not just another schooling experience for Isbjorn where “it was probably just learning, and you hate it, then you go home” (personal communication, October 19, 2016). For Isbjorn, her experiences with Ms. Davis in the classroom were personal. They were something she looked forward to each day. For Dewey (1938), ideal educational experiences are ones in which not only learning takes place, but also where the continuum of education is not interrupted. Isbjorn’s experiences in Ms. Davis’ class are learning experiences in that the learning and living out of one’s life have no clear distinction.

Conclusion

In this chapter, I told the narrative of each participant as it relates to experiences with caring instruction and mathematical experiences in high school. Each story was a co-construction where each of the participants and I lived into each other’s experiences (Clandinin, 2013). Though each participants’ narrative was unique, there were several resonant narrative threads. These resonant threads were not necessarily common themes, but they ran parallel in ways that have potential to speak to and transform mathematics teachers’ practices in the classroom. In the next chapter, I discuss each of these resonant narrative threads. Other topics I

discuss in the next chapter are a brief summary of the study, implications for action, recommendations for future research, and my closing personal reflection on this study.

CHAPTER 5

DISCUSSION

This study, through the participants' voices, lends credence to Noddings' (1984) notions of care – *engrossment*, *motivational displacement*, and *recognition* – especially as it relates to education. The resonant narrative threads also emphasize the importance of the underlying assumptions of the narrative inquiry process; namely, the relational and experiential importance within the realm of education (Clandinin, 2013; Dewey, 1938). This chapter includes a brief summary of the study, the resonant narrative threads, implications for action, recommendations for future research, and my personal reflections.

Summary of the Study

In this study, I captured three 11th grade high school students' experiences of caring instruction and struggles with mathematics through narrative inquiry. When a student perceives a teacher as caring, the student's academic achievement increases (Dever & Karabenik, 2011). Students who have a history of poor mathematics achievement and low interest in the study of mathematics achieve more when their teachers hold them to both high standards and show them care (Averill, 2010; Eccles, 2004; Dever & Karabenik, 2011; Martin & Dowson, 2009; Muller, 2001; Riconscente, 2014). Teachers described by students as caring had the effect of both motivating students and lowering the interest gap between higher achieving students and lower achieving students (Dever & Karabenik, 2011). However, how students perceive caring instruction often contradicts teachers' understanding of what caring is in the classroom (Hayes, Ryan, and Zsellar, 1994; Noddings, 1984, 2002, 2005; Rolon-Dow, 2005; Wentzel, 1997). Thus, the purpose of my study is to help teachers better understand students' perceptions of care and

experiences of mathematical struggle through co-constructed stories authored by the participants and the researcher.

The primary question guiding the conversations between the participants and me, the researcher, in this study is: What are the stories of three 11th grade students' experiences with caring instruction and mathematical struggles? The narrative inquiry approach in this study allowed for the participants and me to better understand and potentially transform our experiences with mathematics learning and life struggles in general, through building a relationship first as people, then as co-researchers. Narrative inquiry engages less in the realm of answering a question as it does in seeking to transform all involved and ultimately the reader through personal engagement in the story (Clandinin, 2013). Through the narrative inquiry approach to research, participants and researchers experience *engrossment* (engagement in thinking, reflecting on another for the sake of understanding), more able to experience *motivational displacement* (walk in the other's shoes), and experience *recognition* (perceive the other as being caring). Noddings (1984) used these three attributes of *engrossment*, *motivational displacement*, and *recognition* to define caring.

Resonant Narrative Threads

The participants told of genuinely different experiences with caring instruction and mathematical struggles. Each participant described a rich, penetrating story into both caring instruction in general, caring in the school building, caring in the mathematics classroom, and deep insight into mathematical struggles at the high school level. Though their stories as presented in the last chapter were individual and unique, some narrative threads ran parallel in ways that speak to their individual stories in ways that resonate with me as a mathematics teacher and hopefully with the larger population of mathematics teachers. These resonant narrative

threads were: 1) academic stress, anxiety, and depression, 2) attributes of a caring teacher and classroom environment, 3) in loco parentis: teachers are the other adults in students' lives, and 4) mathematical struggles that began in and persisted throughout high school. Of the four resonant threads, the theme *mathematical struggles began in and persisted throughout high school* is last, but certainly not least. The sequencing of these four resonant threads is chronological in terms of the conversations. The ordering was also intentional in that the first three lay the groundwork for fully understanding mathematical struggles through the lens of caring instruction.

In a traditional five-chapter dissertation, chapter five is the culmination of the research. However, in narrative inquiry, the conversations themselves are the element of transformation and understanding. At the risk of “selling” the experiences with my participants as simply condensed and extracted snippets as the following four resonant threads, I will proceed. Reader be warned about the potential for overgeneralization and essentialization.

Stress, Anxiety, and Depression. Each of the participants experienced extreme levels of stress and anxiety, and Storm mentioned this as well as experiences with clinical depression and suicide attempts. All three participants discussed teachers explicitly helping them deal with issues of stress, anxiety, and depression.

DJ Panda began every day with the stress of waiting for a bus not knowing if she would be waiting five minutes or 30 minutes, or would she miss it? There was a constant barrage of anxious thoughts; she was always conversing with herself: “... the day to day was anxiety. Making sure I have this homework done, I'm ready for this test, or I've done this or that right. If a teacher asks a question, am I going to know it?” (DJ Panda, personal communication, October 12, 2016). DJ Panda and I also discussed the ongoing, never-ceasing onslaught of testing. Just as her mathematics class grades began to improve, she would need to shift her energy

somewhere else, for example, a mandatory county writing test, the PSAT, or some portion of the graduation test.

DJ Panda found many positive ways to handle her stress and anxiety. She learned to enjoy her friends, she played her instruments and wrote and recorded music throughout the school day. Each of these was a stress relief. However, she credited a great deal of her ability to cope with the stress of the day-to-day school life to Ms. Phillips. Not only was Ms. Phillips a teacher who was “cool, down to earth ... with no walls” (DJ Panda, personal communication, October 12, 2016), but she was present in ways that other teachers were not. On several occasions, DJ Panda stayed after school with Ms. Phillips who tutored her in preparing DJ Panda for a mandatory writing test. During these study sessions, she mentioned, “That’s when we really got to know each other” (DJ Panda, personal communication, November 5, 2016). Ms. Phillips took the time to make sure that her students were not only learning and doing well academically, but also she took the time to make sure all areas of her students’ lives were intact. High schools are by design crowded and impersonal (Darling-Hammond, 2010; Noddings, 1984; Hayes, Ryan, & Zseller, 1994). DJ Panda expressed how easy it is and yet difficult it is for teachers to relate to students: “I consider her like family” (personal communication, October 12, 2016). We teachers can just be family with our students. This concept is simple, yet immeasurably and simultaneously difficult. As a teacher, I go about my business every day, then every few months a student drops me a note or a card, and it slams me with the realization of the importance of my day-to-day as a teacher. Within the first ten minutes of our first conversation, DJ Panda stated, “Had it not been for her [Ms. Phillips] I would have probably had like a mental breakdown” (personal communication, October 12, 2016). We discussed Ms. Phillips at great length, but this one statement encapsulates *recognition*, one of the three central attributes of care

(Noddings, 1984). Recall, *recognition* is the notion that caring is incomplete unless the person being cared for recognizes the “caring” person’s actions as caring (Noddings, 1984).

For Storm, several teachers helped her in times of need, but none more so than Ms. Davis did. Storm suffered with clinically diagnosed bi-polar disorder, and thus anxiety and depression were daily struggles for her. Through the course of developing a deep, meaningful relationship with Ms. Davis, Storm confided in her. For Ms. Davis, Storm was not just another student. None of Ms. Davis’ students was just a student to her. “Ms. Davis told me some stories that ... made me feel like I wasn’t alone” (Storm, personal communication, November 1, 2016). Ms. Davis took the time after school with Storm to share similar stories of struggles with anxiety and depression. Like Storm, Ms. Davis still experienced the high amounts of stress. She was a young 2nd year teacher, so she felt the incessant strain that comes with trying to find your comfort in a new school as a young teacher. For Ms. Davis, the prescriptive and scripted nature of the administrations’ expectations for the classroom brought her undue stress (Apple, 1986/2013; Pinar, 1978/2013; Shoenfeld, 2004/2008).

In retrospect, as Storm reflected on her experiences during her struggles, she has memories of teachers always having her back. There were Mrs. Norton and Mrs. Hendrick, her two science teachers who told her that she was their “adopted student-child.” There was Coach Holtner screaming and clapping at Storm’s baptism as she arose out of the water. For Storm, each of these teachers at Lakewood helped form a community of love and trust so that when it was time for her to return to school in January of last year, she had the strength and support she needed to not only survive, but to thrive.

It was Mrs. Hendrick’s ability to develop a rich, deep personal relationship with Storm that allowed Storm’s grandmother to reach out in her freshman year with the details of the family

situation. Mrs. Hendrick was the only teacher that Storm allowed into her world. Storm did not know Ms. Davis yet. With Storm, Mrs. Hendrick showed genuine love and care, so much so that Storm was able to share with her even while she was in shock and unable to talk with anyone else about her experience with finding her mother in the bathroom bleeding almost to the point of death.

For Isbjorn, a less structured, less rigid environment inside the classroom and sometimes leaving the classroom relieved some of the anxiety that school generated. Lack of emotional nourishment and academic growth is often the result of bureaucratic structures in the classroom that supersede more humanizing elements (Apple, 1986; Noddings, 1984, 2002, 2005, 2013). Teachers taking the time to plan outdoor lessons were instrumental to Isbjorn feeling less anxious. Isbjorn fully appreciated leaving the fluorescent lights and the entrapment of the concrete walls as she entered the fresh air and openness of the outside. This single gesture of Mrs. Taylor opening the external door so that the external light and supple sounds softened the tension of the typical space in the room was an act of emotional and psychological awareness. The small acts where teachers sought and met students' needs built a trusting space with shared responsibility (Roache & Lewis, 2011).

Attributes of a Caring Teacher and Classroom Environment. As the inquiry commenced, common attributes of an ideal teacher or classroom emerged. The most discernable of the common attributes was that of teachers simply noticing their students. Other overarching attributes were the manner in which teachers interact with students and the classroom climate.

Caring teachers notice the student. Too many of our students lurch into the school building, run from class to class, and then go home. I have had conversations with students who say that other than me, no other teacher says a word directly to them all day long. For Isbjorn,

the most important attribute that expressed care was simply that teachers took notice of her. The simple act of affirmation by the teacher of noticing Isbjorn told her that she was valued in the classroom (Noddings, 2005). Isbjorn discussed several teachers who explicitly took notice and in different ways.

Isbjorn said of her German teacher, Frau Musik, that “if you’re having a bad day you can just tell her and she’ll not call on you” (Isbjorn, personal communication, October 19, 2016). This seems miniscule to many, but to students, and to those who are anxious about being called on to perform in class, know the correct answer, “get it right” in front of the most powerful person in the room and their peers, this simple act is extremely comforting. It also tells the student that they do not have to tuck away their emotional state and personal life at the door as they enter the classroom. This easy yet powerful deed acknowledges the multidimensional lives of our students, and it emphasizes that students are whole people; and that the non-school portion of their lives is important too.

Another way that Isbjorn experienced care from her teachers was Ms. Davis taking the time to reach out to her. Ms. Davis had a lasting effect on both Storm and Isbjorn in her short two years at Lakewood. “She would sometimes tell me cool things that she found out about something we both liked, she knows that we have some interests that are the same” (Isbjorn, personal communication, October 19, 2016). This “oh, by the way” recognition by the teacher showed Isbjorn that she was noticed, and noticed for more than how she performed in the class. This quick undertaking lasted no more than ten seconds on any given day, but the teacher simply taking the time to do this periodically demonstrated that the student was valued and appreciated.

Not only was Isbjorn’s being noticed and cared for as a student in the classroom about her emotional state and personal interests, but teachers altered instructional strategies based on

her and other students' interests. Mrs. Taylor, her 10th grade geometry teacher, took the time to create new lessons based on the interests of the class. Isbjorn remembers her class consisting of several people "who learn artistically" (personal communication, October 11, 2016) and thus, Mrs. Taylor taught mathematics in ways that tapped the artistic abilities of the students. Mrs. Taylor created a lesson where the students could use the domain and range of functions to create different pictures on graph paper. This time-consuming enterprise of building an out-of-the-ordinary lesson honored the dignity of Isbjorn and her classmates as more than minds in motion and malleable products to be trained (Liston, 2004). During this activity, students expressed their knowledge of domain and range as well as the different general shapes of functions. Isbjorn stated so profoundly that "some teachers are more interested in learning and interaction, and others are just concerned with structure, they put it in place, and that's what they do" (personal communication, October 11, 2016). Isbjorn's experience with Coach Teller was one of "structure". He instructed – in Isbjorn's mind – with total disregard to the students in the room. Mrs. Taylor, in contrast, engaged her classes in ways that made her lessons at least in part dependent on how students were learning on a day-to-day basis. According to Fleener (2004), this is an instructional shift away from learning as an object to learnings as a process steeped in relational understanding. Isbjorn viewed teachers meeting students where they are and being flexible in their instruction as demonstrating caring instruction.

For DJ Panda, caring could also look like simply taking the time to notice her and say hello in the hallway of the school. The first teacher she mentioned as a caring teacher was an elementary school teacher – Mr. Banks – who did just that and spoke to her every day in the hall. She spoke also of Ms. Edwin who "was like a mother in a sense" (DJ Panda, personal communication, October 12, 2016). Ms. Edwin – Ms. E – would take the time to tell the

students personal stories, even humorous stories about how inexpensive her utility bills were. She enjoyed not only teaching the class, but also being with the students. She would take the time to notice and connect when students were not having a good day. She was strict, but “if she got mad it wouldn’t be awkward” (personal communication, October 12, 2016). There was a familiarity that allowed Ms. E to be strict in a loving parental way that transcended professional teacher/student relations and modeled a more in-depth, familial relationship (Patterson, Gordon, & Price, 2008). Then there was Ms. Phillips who “cared more about the students, making sure that they’re good in their personal lives and in school” (personal communication, October 12, 2016). Too often, in a school such as Lakewood with a large, sprawling campus and student body, it is an obstacle for teachers to have the time to get to know their students (Darling-Hammond, 2010). DJ Panda valued what should be the most obvious way to take notice of students in a classroom, and Isbjorn corroborates this later in this section. DJ Panda appreciated receiving flexible, face-to-face help from a teacher: “that way [the teacher is] helping students when they need it” (personal communication, November 5, 2016). How seemingly obvious and simple, but as a teacher with 32 or more students in the room, it is easy to slip into methods of instruction that involve strictly delivering material.

Like Isbjorn and DJ Panda, Storm described several experiences where teachers took the time to notice her in ways that demonstrated care. During Storm’s rough freshman year, Mrs. Hendrick looked in on her, then as Storm stumbled into her junior year, both Mrs. Norton and Mrs. Hendrick took the time out of their busy days to look in on Storm on a regular basis. They “both basically told me they adopted me ... that I’m their school child” (Storm, personal communication, November 1, 2016). Ms. Davis took the time after school to help Storm with her anxiety and showed her different breathing exercises. Ms. Davis noticed Storm’s anxiety,

initiated conversations, and took the time out of her day after school to meet Storm's needs and connect on a more personal basis.

An example of how Mrs. Hendrick took care of Storm happened during her freshman year. Storm received a message that one of her friends committed suicide:

She saw me, I had my phone and I just kind of dropped it on the table. She knew me, she knew I paid attention, took notes, and asked questions. I did everything I was supposed to do, but I couldn't do anything and she asked me to stay after class and I didn't have a problem with it. She asked me if I was OK. And as soon as she did I just started to cry. She immediately took me, and hugged me, and asked me what was going on and she walked me to the counseling office. (Storm, personal communication, November 1, 2016).

Teachers paying attention to students can change the trajectory of students' lives. I have memories of teachers who connected with me on a personal basis and it changed not only how involved I was in their respective classes, but also how interested I was in the teacher's wisdom and topics of discussion. On my junior AP US History trip to Washington, DC, my teacher, Coach Moon, asked me what I was listening to on my headphones. I was the kid who always had ear buds in his ear and a Walkman in my pocket before the vast majority of teenage humanity did so. He took the time to talk to me about my favorite music. He did not care too much for my music but he did not belittle it like so many of the adults in my life were prone to do. He stated that he liked easy listening music, but he could understand why someone would like my music. This brief, five minute conversation while we were waiting for everyone to board the bus after eating at Hard Rock Café in Washington, DC made all the difference in transforming my image of what a teacher/student relationship could be. The conversation was a

nudge into the world of adult conversations that I had not experienced. I have played in several cover bands over the last twenty years. I still listen to more intense metal music, but I also play a lot of the music that Coach Moon shared with me. I think of him and our brief conversation often. I began to really listen to my teachers and talk to them after this exchange. I also began to see that history is not just a bunch of facts and dates. I began to enjoy reading history and discussing history for pleasure. I traced all of this, in part, back to the seed planted by Coach Moon and our conversation about music. This quick acknowledgement translated into a personal connection with a teacher, a class, a school, a topic of study, and a personal hobby that now was more pleasurable and real for me.

The business of the typical day in high school makes these simple gestures of care and connection more difficult to come by. Students lurch to their first class of the day like zombies. However, the remainder of the day at a typical school day is frantic. Students rush from class to class. They experience the bell-to-bell instruction that I have personally always prided myself on and that many administrators expect to see. They endure the seemingly impersonal curriculum that is the high school mathematics curriculum. Each of these experiences for the students is obstacles to care for many teachers. However, these obstacles can be overcome with intentionality.

How the teacher interacts with students. Teachers taking notice of students certainly falls under the umbrella of how teachers interact with students. However, this one particular attribute was so substantial in the narratives of the students that it deserved its own section. How the teachers interacted with the students was important as the students told stories of their classroom experiences. The descriptions involved terms such as: “a good attitude” ... “positive”

... “enthusiastic” ... “humor[ous]” ... “down to earth” ... “no walls” ... “open” ... “real” ...
 “helpful” ... “encouraging”

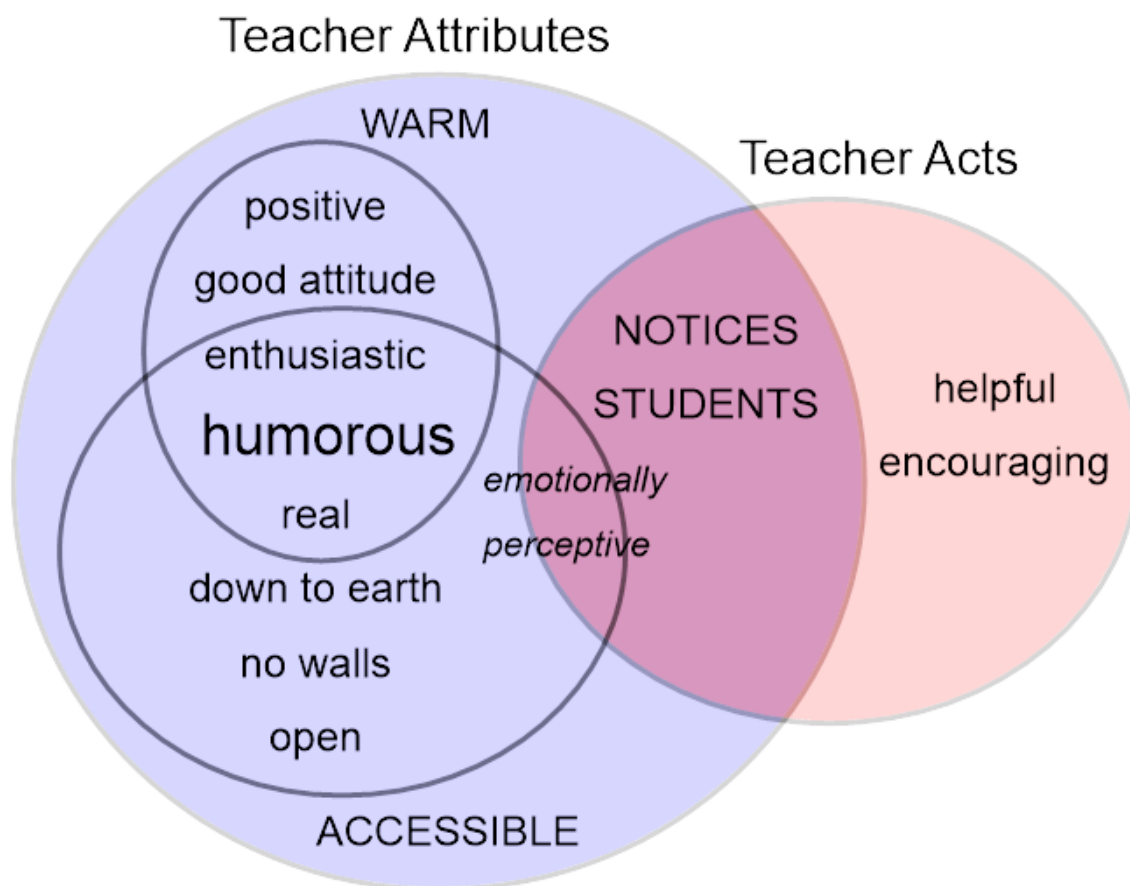


Figure 3. How Teachers Interact with Students.

I grouped the descriptions into two encompassing and sometimes overlapping categories: 1) attributes of the teachers' personality that make for warmth and accessibility, and 2) teacher acts of service and kindness. These two categories overlap, but in general, these qualities are who the teacher chooses to be in the presence of their students and what the teacher decides to do for and with the students. There were teachers who the participants did not describe as "positive," "enthusiastic," or "humorous" yet they met the needs of their students in ways that made them "helpful" and "encouraging." Once again, let me warn the reader, these are not necessarily the attributes of a caring teacher. These attributes emerged from the experiences as three students told stories about caring instruction and mathematical struggles.

Each of the participants through the course of our conversations, painted a picture of a caring teacher. For DJ Panda, the teacher is real, down to earth, and accessible on a personal level. Her stories of care by teachers each contain elements of these qualities, and she explicitly discussed these qualities as attributes of a caring teacher. For Storm, the accessibility of the teacher was important as well. Given Storm's extreme personal situations, her descriptive attributes of care were more personally rich than the other participants' descriptions. For her, the care was demonstrated through nurturing expressions; taking the time to talk to her before and after school, hugs, and personal walks to the counseling office. Like DJ Panda, Storm shared that caring comes in the form of humor, a positive attitude toward the content and all the students in the room as well as the excitement and enthusiasm the teacher shows for the lesson. For Isbjorn, the primary element of a caring teacher is taking notice as previously discussed in the last section. Another important quality of a caring teacher was the ability to be emotionally perceptive of individuals as well as the overall vibe in the room. I discuss how this manifests

itself in the next section. This quality is common to all three of the high school teachers Isbjorn described through her narratives.

For Isbjorn, the ideal classroom setting simply involved a teacher with which she enjoyed being. She described Ms. Davis's class: "I just liked being in her class. I liked being around her. She made jokes and the class was always entertaining ... it made the time go by faster than just kind of sitting and working" (Isbjorn, personal communication, October 11, 2016). Ms. Davis included Isbjorn in the acting of Othello instead of just reading the play, even though Isbjorn would never usually do something like this. According to Isbjorn, Ms. Davis had an ability to hook a student just enough so that the student was connected but not overburdened emotionally or psychologically in the process. Isbjorn expressed several times that for her just "sitting and working" (personal communication, October 11, 2016) was not ideal. She preferred talking and interacting, and spoke of actual conversations with teachers and classmates several times. Isbjorn made one of the most profound statements of the study. It was profound in that it could be its own research study, and I will discuss it again in the next section. She said, "Some teachers are more interested in learning and interaction, and others are just concerned with structure" (personal communication, October 19, 2016). This statement is the sum total of her educational experiences. These learning experiences involve interaction (Elias, Zins, & Weissberg, 1997; Eisner, 2003). That some teachers focus more on the structures, the classroom protocols, "covering the curriculum", and not the interactions between students and the teacher, the learning, is profound. In this statement, Isbjorn taps into the experiences that Dewey claimed are fundamental for not only the acquisition of knowledge, but also the experiences necessary for the creation and stimulation of a healthy disposition toward learning itself (Dewey, 1938). These experiences ranged from artistic group projects in Mrs. Taylor's geometry class to acting Othello

in Mr. Davis's British literature class. Each of these experiences created deep impressions in not only her emotive memories, but in her image of what schooling could and should be. We in the education community hear the phrase "life-long learner" often. However, we as teachers have a moral obligation to help develop a positive attitude toward learning in our students. Students' personal happiness and maintaining a healthy democracy depends on it (Dewey, 1938; Noddings, 2013; Parker, 2005).

Caring Classroom Climate. Characteristics of an ideal classroom emerged that engaged the student and helped foster a caring environment. The terms that appeared to describe this climate were:

"actual conversation" ... "talking and interacting" ... "easy to ask questions" ... "sense of community" ... "like a family" ... "comfortable" ... "warm" ... "humor" ... "expectation of respect"

DJ Panda experienced a myriad of classroom climates in her 10th and 11th grade years at Lakewood. DJ Panda described her current junior algebra two class as dull despite Coach Alexander's use of humor. She indicated there is very little interaction, no dialogue, and no activities. The day-to-day lessons consisted of warm-up, notes, practice. Contrast this environment with her 2nd semester in Mrs. Fairchild's class. DJ Panda described Mrs. Fairchild's class as "warm" and "engaging." Students knew each other's names in Mrs. Fairchild's class, and there was an overall feeling of respect that permeates the room. Students regularly worked on projects together. More than any other attribute, she described the vibe in Mrs. Fairchild's class as more of that of a family. The class has a lot of conversation and warmth. Similarly, Isbjorn described a warm classroom as one where students work together and are engaged in conversation. She described the ideal space as being less hectic. This resonated

with me because I tend to run my class bell-to-bell with multiple timed activities. As Isbjorn described her current 11th grade algebra two classroom and how hectic and frustrating it is for her, I reflected on how I tend to run my classroom often times. I time the warm up, and I time the short-work periods. I have races sometimes with problems. I regularly post a digital clock on my smartboard as the students work. This environment has the potential to make the class seem rushed, and it could instigate frustration and anxiety for some of my students.

In Loco Parentis: Teachers as the Other Adults. John and Eric, my brothers, said more times than I could count that if they had had a teacher like me they might have finished high school. As I reflect on the ways that DJ Panda, Storm, and Isbjorn were kept plugged into school through the deep, abiding relationships with teachers, I cannot help but understand this statement as more than just my brothers paying me a compliment. Along with teacher noticing students and a warm, accessible teacher who builds a climate of care in the classroom, another resonant thread is that of teachers as the only other adults in the lives of my participants. Other than family members and maybe one other close family friend, the participants described no other meaningful, deep relationships with adults. This underscores the importance of teachers being more than just content specialists; for the teachers who view themselves as simply content specialists, the kind of caring and attention described earlier in this section may be above their pay grade. We as teachers are in many instances the only other adults in the lives of our students, and we might not realize it. We have a moral obligation to be more than content specialists (Noddings, 1984, 2002, 2005).

Not only do many of the teachers in my participants' lives exhibit the qualities of a caring teacher and create a warm, caring space in the classroom, but also for the participants in this study, teachers *ARE* the other adults in their lives. "Outside of family, no. Family and teachers.

Not adults. Mainly family and teachers. Those are the only people I come in contact with that are older than me all the time” (Isbjorn, personal communication, October 19, 2016). As we teachers engage students and form relationships, or as we do not, we are also teaching our students how to have adult relationships. We have the potential to model a healthy, caring relationship with our students that transcends the classroom and the school building. This role of a teacher is nuanced. The role of teacher in our society is fluid. We have students who expect us – the teachers – to be more authoritative, but then we also have students like DJ Panda who want us to be “real,” “down to earth,” and have “no walls” (personal communication, October 12, 2016). The complexity makes it difficult when the teacher tries to create a space the student perceives as caring. However, for DJ Panda, the real qualities that she seeks in teachers, such as an open frankness, do not diminish her respect and admiration for them. What Patterson et al. (2008) described as a communal sense of responsibility in classrooms of Black teachers is also a norm in my classroom, as well as, that of Ms. Davis’ and Ms. Phillips’, though all three of us are White. Teacher’s daily interactions with students can create and sustain this complex, care-centered space where the student learns that the relational continuum encompasses more than subject/authority on one end and peer-to-peer reciprocity on the other end. This is a messy space, but I, as a teacher, struggle with the students as we live into this space at the high school level.

Dialogue between and among students and teachers creates, reshapes, and reforms healthy teacher/student relationships and a caring classroom space. How I engage my freshman classes in August is different than how I engage the very same classes in February. In August, most students walk into the classroom and sit in their desks quietly in a state of shock and fear. From time to time hands shoot up to ask for permission to use the restroom, blow their noses, to

get pencils out of their bags. I open the freedom floodgate on the first day. I let students know that I seek to maintain a positive, healthy, challenging learning environment with plenty of social interaction. We discuss what that looks like and how we can establish and/or maintain that relationship together. We grow in relationship daily. The students as individuals mature. I – as the teacher – learn to helm a new dynamic group of students. Each class has different rules in that each class has a different vibe. An example of what this looks like is the fluid teacher/student engagement in the classroom as described by Cabral (2004) where the student sometimes becomes the teacher. When a student takes the lead in the room, it is a couple minutes of messiness as the student generally stumbles and mumbles his way through the lesson. However, several students nod and say “ohhhhhh” as new understandings take place. The student going to the board and modeling vulnerability, risk, and most importantly, that mathematical thinking is messy and it is initially not linear, has potential for planting the seed of mathematics as fluid and not fixed (Davis & Hersh, 1981; Ernest, 1998). As a result, the class as a unit of cohesive, functioning groups of students in a shared space matures and transforms over time. The classroom is the model of peer-to-peer and group interaction for many of our students (Noddings, 2005, 2013).

Our classrooms represent a potential for a stable space. We as the other adult in the students' lives have the potential to create a space where the student feels whole, valued, and understood. We meet the students where they are and together we lift each other “toward our vision of a better self” (Noddings, 2005, p.25).

Mathematical Struggles Began in and Persisted Throughout High School. For each of the participants, their struggles with mathematics all began in high school. Prior to high school, they never considered themselves as not able to do mathematics; as awful at mathematics; or as

slower than some of their peers. For DJ Panda and Storm, this identity took hold while in their freshman algebra one classes, while for Isbjorn it took place briefly during her stint in a sophomore accelerated geometry class.

So many high school mathematics teachers struggle with the tension between the accessibility and challenge of the instruction. The transition from middle school to high school coupled with the transition from arithmetic-based mathematics to a more abstract algebra course is tough for most students (Barbieri & Booth, 2016). Along with the issues of accessibility and lack of smooth transitions, there is an issue of convincing to the public the purpose of teaching mathematics differently through common core approaches. We in the mathematics teaching community have a public relations problem. The purpose of teaching elementary and middle school mathematics concepts differently under the common core is to make sure students not only are able to do the mathematics – the traditional algorithms that we all learned – but to also understand how and why these algorithms work, which translate into a smoother transition into algebra. According to the National Governor’s Association (2010):

These standards define what students should understand and be able to do in their study of mathematics. But asking a student to understand something also means asking a teacher to assess whether the student has understood it. But what does mathematical understanding look like? One way for teachers to do that is to ask the student to justify, in a way that is appropriate to the student’s mathematical maturity, why a particular mathematical statement is true, or where a mathematical rule comes from. (p. 4)

I have civil disagreements with my colleagues often about “doing mathematics” versus “understanding mathematics”. I want my students to understand more than simply what is going to be tested. I want my students to understand more than just the verbs, nouns, and algorithms

that appear in the list of standards. This rigor will help students understand future mathematical topics, but during the learning process, it appears as though I am making the concepts less accessible. As DJ Panda stated, “they’ve made it too complicated” (personal communication, February 22, 2017). However, open dialogue in the classroom becomes key to optimal mathematical understanding when dealing with this complexity (Neyland, 2004). This portion of my conversation with DJ Panda was *moment of tension* (Clandinin, 2013) that forced me to reflect and better articulate my stance for why I teach the way I do. I speak to my classes regularly about why we are learning what we are learning. I encourage students to express their discontent with learning a “whole bunch of stuff they’re never going to use.” It is important that students be able to express these frustrations. In response, I give my rationale for why I find these topics important for every student in the U.S. to study. The conversation is ultimately “to be continued,” and students know that I hear them. I always tell students that their frustration is valid. I tell students they should question the merit of every endeavor. They should ask, “why am I doing this?” “What is the purpose of this?” These are healthy questions for critically minded citizens in a democracy (Parker, 2005). As Storm experienced difficulty entering algebra 1, the fact that there was no dialogue in Ms. Lowe’s classroom may have only made the mathematical struggles worse for her. DJ Panda and Storm had positive memories of their teachers as supportive and engaging. DJ Panda’s teacher sat down with her and encouraged her even as she struggled. She even counseled her emotionally by reminding her that yes, it is difficult, but if she keeps working, she will be successful (personal communication, November 5, 2016). Storm experienced a very different level of support. She described Ms. Lowe as “strict,” “belittling,” and “mean” (Storm, personal communication, October 18, 2016). What if the responses “why didn’t you study your notes?” or “we did that yesterday, didn’t you pay

attention?” that Storm heard to start out the year in algebra one were instead replaced with “You’ve seen this before, but this is a tricky concept at first,” or even “Oh, yeah that is a difficult concept at first, put a note by it and come see me in the morning and we’ll discuss it,” or “Give me just a minute to finish this example then we’ll come back to that because that point is sticky?” If we as mathematics teachers expect the topics we teach to be difficult, then we must build in time for discussions aimed at clarity and moral support. Taking the time to develop trusting, open relationships with students translates into more dialogue in the class. This type of dialogue is necessary as we mathematics teachers endeavor to make the mathematics both challenging and accessible (Eisner, 2003; Fleener, 2004). We as teachers can plan fewer examples and build in scaffolding intentionally for a class where the students tend to ask more questions. Teachers might tell students it is perfectly fine to leave class a little bit confused some days. I tell my students regularly that I left my mathematics classes most days in college feeling as though I had just gone through a tornado. It is not ideal, but it does happen. Many topics in mathematics cannot be fully understood in one sitting, but nonetheless they must be introduced. This is where the moral support from the teacher and the standard of open dialogue comes in. Students can be encouraged to continue to struggle, think, and try. That is all part of learning mathematics.

For Isbjorn, the struggle was generally one of interest. Her mathematical experiences in high school lacked enthusiasm. But what’s more, she did not experience mathematics in a way that would allow her to see that “mathematical ideas reside in the dialogical space between structure and creativity” (Neyland, 2004, p. 70). In her view, to be a math person is not to occupy a creative space. Her teachers’ instructional choices solidified this uncreative vision of mathematics daily.

Though the one-dimensional instructional practices of Isbjorn's teachers warped her sense of the nature of mathematics, they did not keep her from earning passing grades. The overemphasis on testing has had visceral effects on DJ Panda and Storm. Less dialogic, interactive, and creative means of instruction and an increased emphasis on outputs – quizzes, tests, assessments – have trimmed down the content to more and more abstract pellets that are not easily digestible (Brown, Jones, & Bibby, 2004; Fleener, 2004). As teachers dispense content in ways that do not place students' emotional states at the center daily, a teacher puts his/her better judgment aside (Gutierrez, 2013; Walls, 2010). DJ Panda and Storm look around the room, and the “mathematics is very clear and reasonable” to their peers yet it is the “most irrational and authoritarian of subjects” for them (Ernest, 2004, p. 27). This struggle is the brutality DJ Panda and Storm described enduring most days in their mathematics classes.

For DJ Panda, identity was a daily struggle in the mathematics classroom. Her mathematics teachers, whether intentionally or not, acted to strengthen her negative beliefs about her mathematical abilities. Her own identity as “dumb” and her teacher's low expectations for her led to a diminished learning environment (Gutierrez, 2013; Prime & Miranda, 2006/2008). Societal pressures as related in the media and her own experience made race a factor in her mathematical struggles (Battey, 2013). DJ Panda described race as certainly being a factor. Teachers did not explicitly call her mathematical ability into question due to her race, but students did. DJ Panda stated:

Hearing what other kids say, oh I'm Black, I'm not good at math, or that kids Asian, they must be amazing at it. Or that kid's white, they probably get tutoring or something like that. With me and my family my family's more into like don't make yourself look

stereotypical, make yourself look better than this. You know, and it puts a lot of pressure on me.

The challenge for all teachers is not to view their students through a lens of fixed identities but rather through a lens that allows for the changing, shifting, maturing, and growing as a mathematics student (Freire, 1970; Gutierrez, 2013). Though teachers never made DJ Panda feel as though they were explicitly calling her out due to her race, it was certainly something she perceived. The dumbing-down of the conversation DJ Panda experienced with Mrs. Fairchild reinforced her self-image as not a math person. DJ Panda confessed:

I think, the teacher wasn't racist. She was nice, I don't think she was racist. But she was nice, but still stereotyped and made assumptions with students. You could see it in her face at times, she would basically be I'm not surprised you are asking, she would really dumb things down in a way that made me feel like she was talking down to me. I think that just adds to why I feel dumb when I walk into a math class.

DJ Panda now battles this identity daily, and the loop continues in her mind as it did with my mother for 30 years.

Whether the mathematical struggle for students is due to a lack of instructional creativity, a lack of open dialogue during instruction, or a teacher's belief and daily magnification that mathematics is supposed to be hard for most students, all mathematics teachers can better serve their students by opening up pathways of communication so that students feel heard and understood. The ethic of care (Noddings, 1984) entails these avenues of open dialogue as a standard in a caring classroom, and the participants of this study concur.

Implications for Action

All of the teachers in my Doctorate of Education cohort are veteran teachers, so for us we knew what we were passionate about coming into our programs of study. For me, my older brother had committed suicide two days before I began my first course in this program. My younger brother died just five years earlier. Both of my brothers dropped out of high school, both died relatively young. Recall that my brothers both said on multiple occasions “If I had had a teacher like you, maybe I wouldn’t have dropped out,” a phrase that echoes and which brought me to this space. As I reflected on my conversations with my brothers over the years, I found myself asking, “Were our school and life experiences so different?” As I meditate on my brothers’ schooling experiences, I remember that they skipped school often as they entered middle and high school. As my brothers were being pulled out of school by a myriad of external factors, their teachers were certainly not pulling them back into school. They had no teachers they of which they wished to speak. There were no warm school memories, no “I remember Mr. Smith” or “I loved Mrs. Jones.” There were no teachers, in the recollections of my brothers, who put forth the time and energy to help plug them into the school. The inability for teachers to adequately care for all students and help students stay plugged into school is a common struggle for teachers at the high school level.

The call to care is difficult in the arena of high school. There is a growing list of factors that make it difficult for high school teachers to care properly for each of our 150+ students. During my 2nd year at Lakewood, two of my colleagues and I attended a teacher training workshop in a windowless hotel conference room. The theme of the seminar was “Engaging the Unmotivated Learner”. The man leading the workshop was an older man. At first, he struck me as dry and without humor, but the more he spoke the more I warmed up to him. He reminded me

of Bernie Sanders; unpolished, but genuine and likable. He stated, “You can’t care more than they do” (personal communication, October 6, 2011). I wrote this quote multiple times as our speaker stated it. I wrote it and reflected upon it in my personal journal that day. He had made this statement several times. He even once deviated from his script to explain what he meant. Ultimately, you can only want the best for your students, but they must pick up their pencils, take pride in their work, and own their learning (personal communication, October 6, 2011). I still, almost six years later, find myself really grappling with this statement. “You can’t care more than they do” he pontificated in reference to teachers and their students. This phrase haunts me. For our students who just do not understand the consequences of their actions, we absolutely need to care more than they do. The teachers – the other adults – know how dangerous it can be in this world for our students if they do not finish high school (Fall & Roberts, 2012). As I grew and matured, I slowly came to understand my brothers as more than selfish flunkies. They were not simply lazy, foppish, overly concerned with the world of coolness, unable to discern what is important, and lacking grit. Here I am a teacher, a parent, and an adult. I reshape the lives of my students every day. My myopic assumptions certainly get in the way of my ability to hear my students’ and brothers’ voices. This space of reflection and transformation is painful and difficult, yet it is a necessary part of any healthy, deep relationship. The stories of my brothers and my participants cannot be “smoothed over” (Clandinin et al., 2006, p. 25), but must be fully engaged and lived into if we are to truly understand their struggles and grow in relationship with them. Thus, I end this study just as I began it, with a quote from Noddings (1984), “Our efforts should be directed to transforming the conditions that make caring difficult or impossible” (p. xxii). This quote, just 12 pages into the introduction of Noddings’ classic book *Caring* set me on a path of personal reflection, narrative inquiry, and growth both personally and professionally.

Transforming the high school classroom into a space of care is difficult, but that is the call to action of this study. Fighting the urge to disengage from a deeper relationship, fighting the energy drain that comes with the daily operations of a high school teacher is no different than fighting the myriad of obstacles to caring in other areas of our daily lives.

Recommendations for Further Research

As I reviewed the literature on student perceptions of caring mathematics instruction in high school, there was a noticeable gap in the research regarding high school students' perceptions of caring mathematics instruction. Thus, I aim in this study to add to the body of knowledge of student's experiences with caring mathematics instruction at the high school level.

This topic demands further research on how high school mathematics teachers can better meet the needs of students; especially students who are struggling in mathematics classes. What can teachers do to be aware and overcome the barriers to establishing more caring relationships with students in high school? What are intentional efforts by teachers to connect with students? As teachers venture into the realm of relationships with students, teachers will discover that they cannot resolve many of the problems the kids grapple with, and teachers might turn off in self-protection because they cannot "fix" the problems. How do teachers protect against this? Student interests and daily performance should inform a teacher's instruction. How does a teacher go about striking a balance to meet students' needs while also teaching students to adapt to the norms of varying classroom environments? A call for a meta-analysis investigating research dealing with care and development of relationships between teachers and students is in order.

DJ Panda had conflicting views on the importance of race in her experiences with mathematics education. Was race a matter in the perceptions of care among students? Did students have perceptions of different experiences due to their teacher's race?

The gate-keeping effect of mathematics education alone makes for the study of student perceptions important especially as it relates to students who are struggling in high school mathematics classrooms. Understanding how caring relationships in the classroom effect the learning of mathematical content especially at the high school level is key to making sure all students complete high school and tap into the American promise of life, liberty, and the pursuit of happiness (Balfanz, 2009).

Concluding Remarks: A Personal Reflection

So many of the comments in passing made by my brothers and my students over the years emphasize what is important: relationships. These comments act as personal reset buttons that help redirect and re-center me in the classroom and in all areas of my life. However, these comments alone are not enough to change the habits of my day-to-day work in terms of relationships and instruction in the classroom. Like any relationship, it is hard work. "Rigor, Relevance, Relationships." This was our mantra at the second high school I taught at, the school where I taught when my colleagues selected me to be the teacher of the year, the school where I first learned on a noticeable scale that relationships between teachers and students do matter in the classroom. For the last ten years, I have found myself reflecting and grappling with this mantra: "Rigor, Relevance, Relationships." At the high school level, where I view myself as a content specialist, it is easy for me to slip into the pattern of only placing energy in the development of formal lessons, leaving little energy and focus on the development of

relationships with students. Just as DJ Panda expressed, any teacher can have the impact of Ms. Phillips:

I definitely think any teacher could be that and I think a lot of teachers want to be that teacher, but they get scared or they just can't figure out how to do it. Maybe they just really don't though and they're just in it for a paycheck. (DJ Panda, personal communication, November 5, 2016)

For true change to happen with me as a teacher, I need daily reminders, daily conversations, daily routines that ultimately help me to break the old mold, the old patterns, to fill in the old ruts and dig new ones. Dewey (1938) stated:

It is easier to walk in the paths that have been beaten than it is, after taking a new point of view, to work out what is practically involved in the new point of view ... The process is a slow and arduous one. It is a matter of growth, and there are many obstacles which tend to obstruct growth and to deflect it into wrong lines. (p. 30)

Without relationships consisting of daily discourse and interaction, old habits inundate the new more measured and intentional spaces I endeavored to bring into my regular day-to-day operations. How can we help students with the busyness, stress, and anxiety of a typical school day? How can we as teachers be the adults we need to be in the lives of our students given that we are also the “other adults” in their lives? How can we help them have a smoother transition in their mathematics classes so that they are more likely to be successful? As teachers venturing to answer these questions, we tell the students in this study, we tell my brothers posthumously “I hear you.”

In the seemingly disconnected stories of schooling of my participants exist fully complete and intact lives. I read these stories again and again. I laid them side by side and they continue

to bring me great joy, and great pain. I laughed. I cried. There is no way to cleanse life from schooling, nor should we. I learned more about who I am; my better self; my self that can improve; my demons, and my angels. The stories of DJ Panda, Storm, and Isbjorn have helped me grow in relationship with my brothers, my parents, my own children, and my students and colleagues. With my brothers, a remembering took place where there were dismembered, distorted images and understandings. Through growing in relationship with my participants and through spending time daily with my students, I am able to better piece together my relationships with everyone else in my life. This is my hope in closing this study; that through engaging in the reading of this work, other teachers will be propelled to live into a space that is centered in relationship, that is centered in togetherness in the classroom, that is centered in lives lived together. This is my great subjectivity; that all people should be reconciled to one another.

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APPENDICES

APPENDIX A

RECRUITMENT SCRIPT

Good morning/afternoon. My name is Drew Spires, I am a teacher at Lakewood High School. I am also a doctoral student at Georgia State. I am conducting research to document stories of students who have a history of struggles in mathematics and experiences of caring mathematics instruction. I am inviting you to consider participating in my research study and envelope.

I'm now handing you three papers. The first is the three-question survey that will determine if you meet the conditions to participate in the study. The second form is a student assent form that you will complete if you answered yes to all three questions and are interested in participating. And the third is the parental permission form that you will have your parent(s) or guardian(s) complete. Ultimately, I hope that four juniors here at Lakewood will participate in this study.

The four participants must meet three conditions; you must answer yes to following four questions in order to participate.

- 1) Would you describe yourself as having struggled in mathematics sometime in grades 7 – 10?
- 2) Would you describe a relationship with a teacher in your past as being a “caring” relationship?
- 3) Are you interested in sharing stories with me about both those struggles and the caring relationships?

The study will consist of 3-4 one to two hour interviews. The interviews will be like having a conversation between you and me. We will share stories about school, having trouble in mathematics, and caring teachers that we know, with each other throughout the first 2-3 interviews, and the last interview will consist of us reading through the story I compose based on our conversations.

Participation in this study may benefit you personally. Through the conversations we have, my hope is that you will better understand how you see caring teaching, and be able to relate better with teachers. Overall, I hope to gain information about how teachers can better understand caring mathematics teaching by hearing from students who struggle in mathematics.

Of the students who meet the three conditions above and return the completed forms in the envelope to the administrative assistant in the school's front office who will place it in my mailbox, FOUR juniors will be randomly selected to take part in the study.

Once again, if you answered yes to all three questions on the survey and you think you want to participate, please take this information home, complete it with your parents or guardians, and return it within the next five school days to the front office. Simply place all three forms in the envelope. I will then contact you and your parents to let you know if you have been selected for the study and to arrange our conversations. Thank you so much for your time.

APPENDIX B

STUDENT ASSENT FORM

Georgia State University
Department of Middle and Secondary Education
Informed Assent

Title: Caring Mathematics Instruction: Stories of Struggling Students
Principal Investigator: Dr. Caroline C. Sullivan, Ph.D.
Student Principal Investigator: Andrew B. Spires

I. Purpose:

You are invited to be in a research study. There are two purposes of the study. One is to understand the experiences of students who believe they have struggled in math. The second is to learn how students experience caring math teachers. You have been invited for three reasons. First, you believe you have struggled in math. Secondly, you have had a caring teacher. And thirdly, you are interested in sharing stories. Four students will be randomly selected to be in this study. Participation will require three or four 1-2 hour interviews. The interviews will be conversational. The interviews will begin in September 2016 and end in December 2016. The topics of conversations are stories of schooling, mathematical struggles, caring, and caring mathematics instruction.

II. Procedures:

If you are chosen, you will meet with Andrew B. Spires at your home, in a nearby public place (ie, coffee shop), or other location that you and your parent(s) agree to. Mr. Spires will audio-record the interviews. Mr. Spires will then study the conversations.

III. Risks:

The risk involved in this study is no different than a typical daily activity.

IV. Benefits:

Participation could benefit you. You will better understand how you see caring teaching. You may be able to better relate to your teachers. The research goal is to better understand caring mathematics teaching by hearing stories from students who struggle in mathematics.

V. Voluntary Participation and Withdrawal:

Participation is voluntary. You do not have to be in this study. If you change your mind during the study, you have the right to drop out. You may skip questions or stop participating at any time. Whatever you decide, you will not lose any benefits that he/she would normally have.

VI. Confidentiality:

Your information will be kept private. Only Andrew B. Spires and Caroline C. Sullivan will have access to the information. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection (OHRP)). We will use a pseudonym instead of your name on study records. The

information you provide will be stored on Andrew B. Spires' computer with a password at all times. Your name and other facts that might point to you will not appear when the study is presented or published. The audio recordings will be recorded using Andrew B. Spires' phone as an mp3 file. Andrew B. Spires will place the mp3 file of the interview on his personal laptop soon after the interview. He will then erase the recording from his phone.

VII. Contact Persons:

Contact Dr. Caroline C. Sullivan at ccsullivan@gsu.edu if you have questions about this study. You can also call if you think you have been harmed by the study. Call Susan Vogtner in the Georgia State University Office of Research Integrity at (404) 413-3513 or svogtner1@gsu.edu if you want to talk to someone who is not part of the study team. You can also call Susan Vogtner if you have questions about your rights in this study.

VIII. Copy of Assent Form to Participant:

We will give you a copy of this assent form to keep.

If you are willing to volunteer for this research and be audio-recorded, please sign below.

_____	_____
Participant	Date
_____	_____
Researcher Obtaining Assent	Date

APPENDIX C

PARENTAL PERMISSION FORM

Georgia State University
Department of Middle and Secondary Education
Parental Permission

Title: Caring Mathematics Instruction: Struggling Students' Co-constructed Stories

Principal Investigator: Dr. Caroline Sullivan, Ph.D.

Student Principal Investigator: Andrew B. Spires

I. Purpose:

Your child has shown interest in being in a research study. There are two purposes of the study. One is to understand the experiences of students who believe they have struggled in math. The second is to learn how students experience caring math teachers. Your child has been invited for three reasons. First, he/she believes he/she has struggled in math. Secondly, he/she has had a caring teacher. And thirdly, he/she is interested in sharing stories. Four students will be randomly selected to be in this study. Participation will require three or four 1-2 hour interviews. The interviews will be conversational. The interviews will begin in September 2016 and end in December 2016. The topics of conversations are stories of schooling, mathematical struggles, caring, and caring mathematics instruction.

II. Procedures:

If your child is chosen, he/she will meet with Andrew B. Spires at your home, in a nearby public place (ie, coffee shop), or other location that you and your child agree to. Mr. Spires will audio-record the interviews, and will then study the conversations.

III. Risks:

The risk involved in this study is no different than a typical daily activity.

IV. Benefits:

Participation could benefit your child. Your child will better understand how he/she sees caring teaching. Your child may be able to better relate to their teachers. The research goal is to better understand caring mathematics teaching by hearing stories from students who struggle in mathematics.

V. Voluntary Participation and Withdrawal:

Participation is voluntary. Your child does not have to be in this study. If you change your mind during the study, he/she has the right to drop out. He/she may skip questions or stop participating at any time. Whatever you decide, your child will not lose any benefits that he/she would normally have.

VI. Confidentiality:

Your child's information will be kept private. Only Andrew B. Spires and Caroline C. Sullivan will have access to the information. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection (OHRP)). We will use a pseudonym instead of your child's name on study records.

The information your child provides will be stored on Andrew B. Spires' computer with a password at all times. Your child's name and other facts that might point to your child will not appear when the study is presented or published. The audio recordings will be recorded using Andrew B. Spires' phone as an mp3 file. Andrew B. Spires will place the mp3 file of the interview on his personal laptop soon after the interview. He will then erase the recording from his phone.

VII. Contact Persons:

Contact Dr. Caroline C. Sullivan at ccsullivan@gsu.edu if you have questions about this study. You can also call if you think your child has been harmed by the study. Call Susan Vogtner in the Georgia State University Office of Research Integrity at (404) 413-3513 or svogtner1@gsu.edu if you want to talk to someone who is not part of the study team. You can also call Susan Vogtner if you have questions about your rights in this study.

VIII. Copy of Form to Participant:

You will be given a copy of this form to keep.

If you are willing to allow your child to volunteer for this research and be audio-recorded, please sign below and provide contact information.

Child's Name	
_____	_____
Parent or Guardian	Date
_____	_____
Researcher Obtaining Consent	Date

Parent Contact Information

Name _____

Phone _____

Email _____