

THE PRESENCE OF CARING RELATIONS IN CURRENT MIDDLE AND HIGH  
SCHOOL MATHEMATICS TEACHERS' DISCOURSES AND PRACTICES

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## **ABSTRACT**

**DMITRIY CHUKHIN: The Presence (and Absence) of Caring Relations in Current Middle and High School Mathematics Teachers' Discourses and Practices**  
(Under the direction of Dr. Olof Bjorn Steinhorsdottir)

Based on Nel Noddings' writings about an ethic of caring, five teachers (two high school, two middle school, and one pre-service) were interviewed in this pilot study to help determine 1. How do teachers perceive an ethic of caring in their classrooms? Particularly, a) how do they view themselves as caring for their students, b) how do they view their students as being cared for, and c) how caring relations are important with respect to mathematics, and 2. How do teachers' perceptions of an ethic of caring influence their behavior within the classroom, including their lesson plans, projects, or interactions with their students? Semi-structured interviews were used, resulting in the emergence of five major themes: 1.) fairness, 2.) a desire for their students' well-being, 3.) a desire for their students' academic success, 4.) fostering a relationship with their students, and 5.) involvement with parents. Other topics discussed include the relation of mathematics to caring relations, character education, and the role of culture in caring relations.

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## **Literature Review**

Much discussion has come about due to the recent push toward a greater emphasis on standardized testing in our nation's schools. This push, gaining steam in the 1980s and continuing into the 1990s, has been epitomized by the passing in 2001 of the No Child Left Behind Act that has greatly influenced curriculum, as well as practice, in schools throughout the country. The act has put much greater importance on high-stakes testing, and this emphasis has been felt in many classrooms, as well as in many students' lives. Teachers, parents, and students have all witnessed the transformation of curricula to reflect the weight that has been placed on these tests. In fact, it seems that this legislation has had so much impact that schools have become institutions that exist mainly to turn out graduates with the ability to pass standardized tests and enter the economic workforce.

Contrary to this model of schools, other visions of school have existed throughout America's history, particularly the idea of "educating republican citizens" (Tyack, 2007, p. 9) who would be ready to, and responsible for, participating in a democracy upon graduation. Other models, such as John Dewey's child-centered one, have also been proposed and attempted, although these have been passed up in favor of the current model based on efficiency and assessing academic achievement through high-stakes testing, a policy in many ways resembling a business (Tyack, 2007, p. 144).

### **Shortcomings of the Test Score Model**

It is clear that a model based merely on producing high academic scores ignores various essential elements of education. One of these elements is the importance, and even vitality, of individuals' interpersonal relationships, which are slighted by a model

focused on academic test scores in the different disciplines, which also has the tendency to reduce students to a number, rather than viewing each as a person. The idea of caring relations in education, then, stands against such a model, with the claim that the relational aspect of learning must be not only mentioned, but practiced and emphasized, since “the main aim of education should be to produce competent, caring, loving, and lovable people” (Noddings, 2005, p.174). Though not unimportant, academic test scores are subordinated to this goal.

Another element that is ignored by a test scores education model is the factor that culture plays in the experiences of many students in the United States. Many theorists have argued that schools themselves are political institutions and work to give certain advantages or disadvantages to students based on culture or race (see DeCuir, 2004, Deschennes, 2001, for a few examples). Test scores, however, do not take into account what advantages students are afforded by these factors, but instead simply demand high test score achievement.

Moreover, a model based on caring theory stands against such a test score model, and it is this caring model that is described below. The paragraphs below give an introduction into this alternate vision of education, based largely on the work of Nel Noddings. Her ideas are explained and referenced in the paragraphs and help to form a basis for this research study. This introduction is followed by a few examples of research studies relating to caring theory, as well as some comments about the limitations of those studies. The section concludes with arguments making the case for the importance of this topic and of this research study, particularly as one looks at education with the vision given by caring theory.

## **Caring Theory**

### **The One Caring and the One Cared For.**

In response to the lack of mention of interpersonal relationships and caring, and how these two relate to education, this study is founded largely on Nel Noddings's work on caring relationships (termed relations by Noddings) with others. The teacher in this model is situated within the classroom and participates in relations with students, with the desire that these relations will be caring ones, a part of which means pushing the child toward his or her projects. The projects in this case are the academic assignments and studies that mathematics students undertake in the classes of mathematics teachers. It is not that the goal of caring is to have the child produce something, but rather the child's production of the project ought to come in the context of the caring relation.

Caring relations consist of two individuals, labeled by Noddings as 'the one caring' and 'the one cared for' (Noddings, 2002, p. 13). The one caring, then, engages in a sort of attention when looking at the one cared for that is "first of all attentive. The soul empties itself of all its own contents in order to receive into itself the being it is looking at, just as he is, in all his truth" (Weil, 1977, p. 51). Rather than projecting oneself onto the other, the one caring receives the one cared for, and Noddings labels this attention 'engrossment.' She also defines the term 'motivational displacement' as what happens when the "motive energy [of the one caring] begins to flow toward [the one cared for] and his projects" (2002, p. 17). She continues on the same page and provides an example of this:

"Ms. A, a math teacher, stands beside student B as he struggles to solve an equation. Ms. A can almost feel the pencil in her own hand. She anticipates what

B will write, and she pushes mentally toward the next step, making marks and erasures mentally. Her moves are directed by his. She may intervene occasionally but only to keep his plan alive, not to substitute her own. She introduces her own plan of attack only if his own plan fails entirely and he asks, “What should I do?””

Thus, the one caring is focused attentively on the one cared for, as the energy of the one caring flows toward the one cared for. It is evident how the one caring is present to receive the one cared for and provides support as he tries to work out his plan. The caring relation holds even if the plan fails, for the one caring is present to continue to help. In all these interactions the one caring is described as living with an ‘ethic of caring’ (Noddings, 2005, p. 21). Rather than being instructed by rules that must be followed towards the other, the one caring instead acts “based on a recognition of needs, relation, and response.” Having this ethic, “one cannot say, “Aha! This fellow needs care. Now, let’s see—here are the seven steps I must follow.” Caring is a way of being in relation, not a set of specific behaviors” (Noddings, 2005, p. 17). Therefore, the one caring is charged with being in relation with the one cared for and with maintaining such an ethic of caring.

Though this research study does not discount the importance of moral rules in guiding behavior and helping people to care for others, adherence to such rules is not deemed a sufficient response to the needs of the one cared for. Caring relations must be present in which people act based on the needs of the other and in a way that is receptive of the one cared for, striving toward this individual’s projects.



The following section elaborates on caring relations and how, based on Noddings' framework, they exist in circles and in chains around the individual who is the one caring.

### **Circles and Chains of Caring.**

Caring relations, to Noddings, are found in “concentric circles of caring” (1984, p. 46). A person's innermost circle is filled with individuals very close to this person, perhaps family members or loved ones, people who this person cares for. Moving out from the innermost circle the relationships become less close, though in some way existent. Along with the circles are also chains attached to specific links in the circle, and these are people who get attached into a person's circle because of their relationship to someone within the circle. An example of this is a friend's spouse who otherwise was a stranger, but now becomes attached to the circle through the relationship to the friend. Therefore, specific people continue to be linked to an individual through these circles and chains, though it becomes obvious here that it will be impossible to care for every person in the world. Noddings differentiates between the terms ‘caring for’ and ‘caring about.’ The caring relation described above is really the ‘caring for’ relation, while people may also care about certain others, perhaps those whom they are not close to. Caring about is a poor substitute for the caring for relation, since it can oftentimes be “too easy” (Noddings, 2002, p. 22) and doesn't need to involve any personal interaction or even action. That is, one can say that he/she cares about the poor without doing much to help them or to care for them; to care for a poor individual, though, one would need to practice the relation above. However, caring about can bring about actions toward others whom an individual is simply unable to care for, such as the starving children in another city or

country. Instead of doing nothing, an individual can be guided by compassion, and act to ameliorate this suffering, whether through monetary contributions, political efforts, or other actions. Such relations don't qualify as 'caring for' relations, but they are nonetheless meaningful.

### **Caring and Culture.**

Another significant aspect of caring is the issue of each person's cultural background. It is true that individuals come from different cultural, ethnic, or racial communities from each other, and also that these communities may define relations in different ways. Thus, it may be argued that 'caring for' relations can not be extended across such lines. However, it is argued here that relations with the desire to care for another being in need of care do, in fact, cross such boundaries, since the capacity to be receptive of another's struggle and to be comforted by another's presence are common to different cultures. It is from this basis that one can begin to care for others, even those from a different culture. Unquestionably important is the necessity to learn about the culture of the other, and one can learn to be better at caring for people of other cultures over time, but the desire to care remains the same. Noddings writes that individuals caring for their children "are concerned with preserving the life of the child, promoting its growth, and shaping it toward acceptability in some cultural context" (2002, p. 121), values that all extend across various cultures. It is true that acceptability in a culture will look different for each culture, but the one caring may still be in a caring relation with someone who is from a different culture than their own.

## **Teachers and Caring.**

Within the classroom, the task is given to the teacher to care for his/her students. It may be noted here that “this does not mean that all relations approach that of the prototypical mother-child relation in either intensity or intimacy. On the contrary, an appropriate and particular form of caring must be found in every relation” (Noddings, 1988, p. 219). Therefore, the teacher must demonstrate caring for his/her students, taking into account that many of the students may come from different cultures or backgrounds, and using this knowledge to inform his/her actions. Despite these differences, it is argued here that the teacher is still able to care for his/her students and must do so, since “the capacity to care may be dependent on adequate experience in being cared for” (Noddings, 2002, p. 22). Thus, students may be able to see how caring relations can occur through the experience of being cared for by their teacher, and so learn to practice caring relations in their lives. In the desire that students have caring relations, the teacher’s example may be instrumental in demonstrating how such relations can occur, though this need not be the only way they occur. Even in a single interaction between a teacher and a student other students may see an ethic of caring, for “when a teacher responds to one student, twenty or thirty others learn a lesson” (Heller, 2007, p. 30).

In such relations, then, teachers are to model caring for their students and to act with an ethic of caring, with his/her energy flowing toward the projects of the one cared for. Caring teachers model such an ethic of caring while helping their students to succeed in their mathematics classrooms. It should be noted here that students will have projects that are not related to mathematics or the content covered in math class. These are also valid projects, and it is important for math teachers to assert the validity of projects

outside of math, since students will be interested in different fields, and many will study to be something other than mathematicians.

With these ideas about caring relations in mind, the following sections provide a few examples of research studies that have been aimed at investigating caring within schools, or in the lives of educators. After the examples is a short section with suggestions about how studies can more closely investigate the caring relations found in Noddings' writings.

### **Caring Pedagogy: A Few Examples**

Several studies are mentioned here that have attempted to investigate caring in classrooms, and the effect such relations have. As a note, these relations did not necessarily define caring relations in the same way that Nel Noddings does in her literature. The way that these studies have defined caring was more in relation to general ideas about desiring the best for students and helping them to have positive interpersonal relations with others. It's not that these ideas conflict with Noddings' definitions of caring relations, but rather that they don't develop the idea of what it means to care for students as much as she does. Therefore, suggestions are made at the end about how future studies can investigate the caring relations described by Noddings. Each of the three studies is discussed below.

Doyle & Doyle (2010) investigated caring relations within a single school and the effects of attempts to foster these relations across the entire school community, including teachers, administrators, and students. Focusing on a single school, Lincoln Center Middle School (LCMS), they observed as "faculty...asked staff, parents, and business representatives, "what kind of person would you like to see graduate from LCMS?" with

“the resounding answer [being] a “caring, empathetic, and proficient student”” (p. 259).

From this basis,

“the staff at LCMS developed a program that not only teaches about caring but more important, models caring through five critical activities:

1. establishing powerful policies for equity,
2. empowering groups,
3. teaching caring in classrooms,
4. caring *for* students, and
5. caring *by* students (emphases original)” (p. 259).

The authors’ mention of the importance of modeling caring resonates with Noddings’ caring theory encouraging teachers to model caring to their students, since “the capacity to care may be dependent on adequate experience in being cared for” (Noddings, 2002, p. 22). Also, this study points to the necessity of caring relations in the school community, as the authors conclude that “a caring community make[s] a difference...[and that] interviews and observations indicate that” (p. 261). Moreover, this difference was felt not only through interactions, but also through an increase in attendance, a decrease in the disciplinary rate, and an increase in test scores (p. 261). Though this study in particular did not go to great lengths to study the personal relations or interactions between teachers and students or between students and students, and thus make little mention of the ‘caring for’ relation, it is still clear that caring occurred in the community, and that the positive effect was felt in many different ways. Ferreira & Bosworth (2000), interviewing middle school students from both an urban and a suburban middle school, also conclude that

“the need for schools to be places where cognitive as well as moral development flourish is crucial... schools must become caring communities and provide adolescents with educational experiences that foster the development of relationships and help curtail the relational distance between self and others” (p.125).

Both of these studies point to the necessity of having a caring community in a school, something that must include caring teachers. This is also something that Noddings writes about, stating that “school as well as home should be central in any adequate discussion of moral life and social policy” (2002, p. 2). A third study (Weston & McAlpine, 1998) details interviews with six college mathematics professors all of whom had extensive teaching experience and had been recognized as ‘outstanding educators.’ The researchers found that “the emphasis they (the professors) placed on caring and concern for students was pronounced” (p. 153), and even that “caring for students seems to be the foundation of and driving force for decisions these professors make about all aspects of course design” (p. 149). The authors “suspect that caring for students is what makes these professors outstanding” (p. 153), and it is obvious that the professors have been recognized for their work within the classroom. With these things in mind, the professors’ focus on caring is recognized and applauded. However, it is the case that few studies focus primarily on caring relations between teachers and students, and when caring is discussed it tends to be in relation to achievement and test scores. Moreover, it is difficult to locate studies that discuss caring relations specifically with mathematics teachers or in the mathematical realm. Nonetheless, such relations are important, and some suggestions are made here about investigating these relations.

## **How This Study Improves on The Aforementioned Research**

It may seem somewhat irrelevant to interview teachers about a topic such as caring when issues of academic achievement, students' preparation for the workforce, and issues of racism are discussed so much more often in relation to our nation's schools. Moreover, one may state that it is fine to care for others, but that such a topic ought to be saved for when we solve the achievement gap or other issues plaguing our school system. In response to this charge, this study contends that a focus on academic achievement and workforce preparation without discussing caring relations ignores a very important part of knowledge and work; neither knowledge nor work exist outside of relations to others, and our society would do well to consider relations with others as an important topic, rather than an afterthought. After all, when discussing the graduates of our nation's schools, one may ask, of what value to society is a student who is able to score proficiently on high-stakes tests who in the process fails to learn how to adequately care for others? It seems unlikely that one who scores high on such tests, but fails to care for those around him/her, will be an active force in combating racism or closing the achievement gap, or in working on the various other problems that our nation faces. In fact, all such problems relate to people, as do actions taken to solve them, and thus caring individuals are necessary when looking for solutions. Noddings also states that "the primary aim of every educational institutional effort must be the maintenance and enhancement of caring" (Noddings, 2003, p.172). Implied here is that given the choice of teaching her students to achieve academically and teaching students to care, a teacher should choose the latter.

It is with these philosophical ideas in mind that this study was implemented, especially as a discussion about caring seems to be absent in the field of mathematics and mathematics education. Instead, it seems that mathematics is thought of as a context-free discipline where the content bears no relation to the real world. Mathematics, however, is not “a value- and culture-free product of an objective and rational process of deduction” (Nasir, 2008), and is instead used heavily throughout the world to inform scientific, social, political, and economic decisions, and continues to be used not merely to compute facts, but to promote ideas, theories, and agendas. In such decisions it is imperative that people know how to care for others and not only how to perform mathematical calculations, and thus implementation of caring relations by mathematics teachers is imperative.

When looking at studies that do relate to caring, one issue that continues to be prevalent is that the studies tend to consider caring in relation to examination results, or even behavioral effects. That is, that the focus on caring tends to be justified when study results point to an increase in test scores, or perhaps a decrease in disciplinary problems. Though such results may be the case, it seems rather unethical to promote teachers to care for their students merely for the purpose of higher test scores or lower rates of disciplinary action. Rather, caring relations ought to be fostered without such goals in mind. Instead, it is important to focus on the relations themselves and the communities of such relations, for a teacher who tries to show care for a student just to get the result of a higher test score can not be said to care for the student.

Therefore, it is important to look at the way that teachers care for their students, and what such communities may look like without relating caring to test results. It is



doubtless that such communities will look different in different areas and regions and with different cultures, and so much can be learned in such communities. Therefore, this study aimed to determine teachers' perceptions of caring in their own classrooms, as well as how their thoughts on caring translate into their practice. In the belief that caring pedagogy not only leads to more mathematical learning, but also more meaningful relationships and experiences that will affect students' lives, and thus our society in general, this study was an effort to determine ways that such caring relations are already in place within some classrooms. Implied here is the hope that this study will lead to further inquiry into the matter and a transformation of the way that people view schools and the idea of academic achievement, especially in mathematics.

The next section describes the research question for this study, as well as the research sites, participants, and methods of data collection implemented to gather data.

## **Methodology**

This study aimed to answer two research questions through qualitative interviews with five participants, each of whom were mathematics teachers at one of four schools. Interviews were conducted in the beginning of the 2011 calendar year.

### **Research Questions**

This study was aimed at determining ways that mathematics teachers perceived an ethic of caring in their classrooms in relation to themselves, their students, and mathematics, and how their actions reflected this ethic. In particular, two research questions were asked:

1. How do teachers perceive an ethic of caring in their classrooms? Particularly
  - a. how do they view themselves as caring for their students,
  - b. how do they view their students as being cared for, and
  - c. how caring relations are important with respect to mathematics.
2. How do teachers' perceptions of an ethic of caring influence their behavior within the classroom, including their lesson plans, projects, or interactions with their students?

Data was gathered through semi-structured interviews lasting roughly an hour with each of the participants in which five questions were asked in attempts to gather data to answer each of the two research questions. The questions that shaped the interview are presented below:

1. As a teacher, how do you see yourself as an ethical person?
  - a. What is it that makes you ethical?

2. How, if in any way, do you believe that you affect the ethical lives of your students? What role do you assume that ethics plays in classroom discipline?
  - a. Are students encouraged to act ethically, and if yes, then how?
3. Describe a significant student in your class and your interactions with this student.
  - a. In what ways do you model caring towards your students? Do you model this toward all students, or just some? Why?
4. Do you envision that there is a relationship between ethics and mathematics? If yes, then what is this relationship, or how is this relationship explored in your classroom? Or should school not deal with ideas of ethics and just focus on skills within the disciplines instead?
  - a. Are there any specific (or non-specific) things that you do in your lessons that encourage your students to act in ethical ways?
    - i. How about the way that your class is structured, in terms of lecture, group work, discussion, projects, etc.?
  - b. Are there constraints on you that hinder you from exploring this topic?
5. For you as a teacher, do you believe that it is more important that your students learn math or that they learn to be ethical people? Why?

### **Research Sites**

Research sites for the interviews were chosen on a convenience basis from different local school districts. See Table 1 below for a description of each of the schools. Since culture is an important factor when discussing caring in different communities, and since race plays an important role in this, a breakdown of each school is given by race (gathered from the schools' report cards available on each school's website):

Table 1:

*Demographic Data of Participants' Schools*

Name	White	Black	Asian	Hispanic
O. Manolis High School	63%	24%	N/A	9%
J. Matthias High School	N/A	82%	N/A	13%
P. Peterson Middle School	53%	13%	19%	7%
C. Melendez Middle School	48%	12%	22%	12%

*O. Manolis High School.* This high school is located in a rural community, and is comprised of mostly white students from the town. It is the oldest high school in the community, and demographic data show that its population is mostly white, with a Black minority, although Hispanic students comprise 9% of the population as well (see Table 1). As part of a county-wide policy, Manolis High School teachers participate in Professional Learning Communities (PLCs), teams of teachers that meet and discuss curriculum, assessment, and planning.

*J. Matthias High School.* Matthias is located in an urban community, and is in many ways quite different from Manolis High School. Most of the students at Matthias High School are Black, with a few who classify themselves as Hispanic (see Table 1). Moreover, Matthias has been a low-performing school on standardized tests, and are behind on No Child Left Behind (NCLB) Adequate Yearly Progress (AYP) efforts.

*P. Peterson Middle School.* Peterson Middle School is located in an affluent college town, and most of its students come from such a background. A little over half of

the students at Peterson are white, and Asian is the second most common race, followed by Black and Hispanic (see Table 1). Students at Peterson have traditionally performed very well on standardized tests, and many of its graduates have gone on to local and non-local universities. Teachers at Peterson participate in PLCs.

*C. Melendez Middle School.* This school is also located in an affluent college town, and in many ways resembles Peterson Middle School, though this school was built much more recently. A breakdown of the student population by race reveals a slightly higher percentage of minority students in the school (see Table 1). Teachers at Melendez also participate in PLCs.

## **Participants**

The participants in this study were five individuals who were mathematics teachers. Two were high school mathematics teachers, two were middle school mathematics teachers, and one was a pre-service high school mathematics teacher in the student teaching semester of his teacher preparation program. Participants were recruited through email, as well as through personal interaction with the Principal Investigator. Since this study was intended to be more of an exploratory study than a full-length study, no effort was made to ensure that differences in race, age, teaching experience, and other factors existed between the participants. Neither was effort made to ensure that participants were representative of either the population at large or of mathematics teachers in particular based on these demographics. Instead, a convenience sample was used, which allowed for convenient access to teachers and a preliminary look at some teachers' perceptions of caring for this exploratory study. However, it was found that the participants in the study did also vary in some of these demographics, such as race and

teaching experience. A breakdown of participants' demographic information is given in Table 2.

Table 2:

*Breakdown of Teacher Participants by School*

Name	Teaching Level	School	Race	Sex
Johnny	Pre-service High School	Manolis High School	White	M
Kelsey	Middle School	Peterson Middle School	White	F
Maria	Middle School	Melendez Middle School	White	F
Brittany	High School	Matthias High School	Black	F
Michael	High School	Manolis High School	White	M

*Johnny.* Johnny was a graduate student in the Master of Arts in Teaching in Mathematics program at a prestigious Southeastern university in the United States. He had previously completed an undergraduate degree in mathematics at another university, taught mathematics overseas for a few years, and had come back to school to pursue this degree in order to teach high school mathematics in the United States. He is white and his student teaching has occurred at O. Manolis High School, a rural high school with a mostly white population (see Table 1)). Describing himself as someone who had “enjoyed mathematics because it really seemed to suit my personality,” Johnny had recently come to the conclusion “that math provides us with models that we can apply to the real world and it provides us with techniques and methods for analyzing and

interpreting those models” (Interview, January, 2011) and was excited to let this theme play a central role in his teaching.

*Kelsey.* She was middle school mathematics teacher at P. Peterson Middle School (see Table 1), and was in her fourth year of teaching middle school math. She had completed her teaching degree in another state and moved to take this teaching position at Peterson after attending a teaching fair hosted by the school district. She taught sixth grade math during the school year in which she was interviewed, and had done so in a school that was mostly white, as well as affluent, as shown in Table 1.

*Maria.* Maria was in the middle of her first year at C. Melendez Middle School when she was interviewed. Like Kelsey, she taught in a school that was mostly white and affluent (see Table 1), though Maria had taught previously in other schools. She had moved a year earlier to nearby Riverside, an urban location in which she taught middle school math for one year before getting the teaching job at Melendez. Prior to that, she had taught in another state, and she described that teaching situation as very similar to the one at Melendez Middle School.

*Brittany.* She had been teaching at J. Matthias High School for a few years, though she was not originally from the area and had taught in a different state prior to this job. Significant to her experience is that Matthias High School is located in an urban area, Riverside, and that the students in her school are almost all identified as Black or Hispanic (see Table 1). She is also the only Black teacher in this study, and all of her classes in the semester she was interviewed were Algebra I classes.

*Michael.* He had had a lengthy teaching career at rural Manolis High School (see Table 2), and had been teaching only AP classes there for a few years. As such, his

experiences differed from those of Brittany, as Manolis differed from Matthias.

Moreover, Michael lived about 45 minutes away from the high school and commuted every day, so that he could continue to keep doing his other job of being a pastor of a small church in his town.

Since a sample of convenience was utilized for this study, there was no promise of many differences between the participants. Even then, some differences exist in the sample: two males and three females were interviewed, teaching experience varied from Johnny's two overseas years to Michael's lengthy career, and though the teachers were almost all white, their race matched the majority race at their school. Still, no Hispanic or Asian teachers were interviewed and since teachers did the interviews on a voluntary basis, their answers need not reflect the views or practices of many other teachers. Still, the data gathered was helpful in determining the ways in which teachers perceived caring in their classrooms, and the ways that this perception affected their behavior.

### **Data Collection**

Each of the interviews was conducted in a closed room with no outside interference, and audiorecorded, with participants' consent. After each one was conducted, the interview was transcribed for further analysis. Subsequently, interviews were coded for answers to each of the two research questions: first, a highlighter was used to highlight any mention of research question 1a, the way that teachers perceived themselves as caring for their students. Once this was completed, a highlighter of another color was used to highlight any mention of research question 1b, the way that teachers perceived their students as being cared for, then of 1c, the way that teachers perceived caring relations connecting to mathematics, then of research question 2, the ways that



teachers' perceptions of caring in their classroom affected their behavior. Once this highlighting activity was completed, all of the mentions of research question 1a were gathered together, then all of the mentions of research question 1b, of 1c, and of research question 2. From here, the lists for research question 1a, 1b, 1c, and 2 were each broken up into different subcategories based on what participants' answers were. Some examples of these subcategories are 'outside the classroom,' and 'desire.' It became apparent that the subcategories in each of the parts of research question 1, as well as in research question 2 were the same, which led to the investigation of how each of these subcategories ran as a theme through the breakdown by research question. Thus, these subcategories became five major themes: fairness, a desire for students' well-being, a desire for students' academic success, attempts to foster a relationship with students, and involvement with parents. It became clear that many of the responses participants gave connected to both of the two research questions, so that it was very difficult to separate the responses based on the two research questions. Instead, it appeared that participants tended to discuss the first research question in more general and theoretical terms, while answering the second one with specific examples from their lives, classrooms, and experiences, in order to shed light on their theoretical ideas.

The next section discusses the results of the study, and is focused on the five themes that emerged from the data analysis, and how responses in each theme relate to Noddings' framework on caring relations.

## **Results**

Five themes emerged from the data: (1) fairness, (2) a desire for students' well-being, (3) a desire for students' academic success, (4) attempts to foster a relationship with students, and (5) involvement with parents. Each of these five themes are discussed at length below with respect to the groups of teachers that tended to give similar answers. In general, high school teachers' answers are grouped together, as are middle school teachers' answers in a separate paragraph. Johnny's answers are typically discussed apart from those of the full-time teachers, as his responses tended to be distinct from the other two groups both in focus and in the examples that he used. The results section follows this order, going paragraph by paragraph by teaching level, and then drawing conclusions in a summary paragraph at the end. Teachers tended to respond either in general terms, which answered research question 1, and in specific terms, which answered research question 2. Also, their responses for each theme are mapped to Noddings' ideas on caring.

On another note, several differences also emerged when looking at the responses between high school teachers, middle school teachers, and Johnny, and these differences are discussed below the discussion of the five main themes. Moreover, it seemed significant that participants failed to mention several themes that seemed quite relevant and important in the literature, and discussion about the omissions follows the discussion of the aforementioned themes.

The five themes that emerged from analysis of teachers' interviews are discussed below.

### **Fairness**

When asked about issues of ethics, each of the teachers brought up the idea of being fair to their students, though teachers did talk about this in different ways. One teacher, Johnny, talked about fairness in terms of curriculum and math examples, though others didn't mention specific examples relating to math when discussing fairness. Several teachers mentioned the way that they saw their students, though for most of the teachers who were interviewed, this fairness was tied to classroom policies and procedures. For this theme it was difficult to draw distinctions between high school teachers' and middle school teachers' responses, and so such a distinction was not made and instead all of the full time teachers' responses are discussed together. Johnny's responses, however, seemed to be distinct from those of the high school and middle school teachers, and thus his answers are discussed separately. With subsequent themes teachers' responses are broken down by teaching level.

Some teachers' responses about fairness tended to be policy-based. Maria mentioned having high standards and expectations for her students, and even not lowering the standards for students with exceptional situations (Interview, March, 2011), though she did mention making accommodations for students who are faced with very difficult circumstances. She also mentioned the idea of keeping things procedural, and seeing this as an issue of fairness, since it allowed students to "know what's going on." Therefore, it seemed that to Maria fairness was definitely tied to her policies and ways of having high standards for her students. Also, Michael revealed a policy of respecting self, others, and property in his classroom (Interview, March, 2011), which he attributed to providing a fair and ethical environment in his classroom.

Other responses related to the way that teachers interacted with their students. Kelsey mentioned treating her students “like little people,” demonstrating that she saw them as people, just little ones, and that she wanted to treat them as people. Also, Michael stated clearly that he “treat[s] them (students) as humans, instead of just automatons just sitting in a desk” (Interview, March, 2011). Johnny also gave examples of being respectful of all of his students, saying that he saw them as individuals, and not simply as a product to work on, though he was not the only one to mention a way of seeing students. The other teachers did not explicitly mention the way that they viewed their students, though it can be inferred from their other comments that they saw their students in similar ways. Therefore, it seemed that teachers demonstrated their practice of seeing their students as people and trying to treat them as such, which is encouraging.

For Johnny, the idea of fairness was tied to his responsibility to his students. He described the possibility that he might “favor students through [his] instruction by catering to certain students through a style that’s convenient to [him] or through informational resources that are convenient to [him] but not accessible to [his] students,” as well as the potential bias in assessments (Interview, January, 2011). He also spoke at length about his planning of lessons, and his attempts to connect the examples he used to the ‘real-world,’ as well as attempts to be unbiased in assessing his students’ learning. In fact, he opined that

“just teaching from examples, that are divorced from context, that are not tied to authentic work [is] doing a disservice to your students and you are not challenging them to develop the critical thinking skills that they need for college and for their own personal lives” (Interview, January, 2011).

Some examples he gave of connecting math to the real world were using cell phone plans to teach systems of linear equations, as well as teaching math for financial literacy. To him, then, it was not only useful, but necessary, to connect the curriculum and examples in his classroom to the context in which they occur, and to make sure that the way he taught didn't favor certain students over others. The topic of what and how to teach, then, was an issue of his responsibility to be fair to all of the students in his class.

Some clear connections to Noddings's caring pedagogy can be seen here. It is clear that Johnny is trying to support his students' projects in mathematics, and he himself is very cognizant of this. It is also obvious that he sees mathematics as a subject having connections far outside of the math classroom, and relating to students' lives beyond school, and he tries to teach in a way that will help students to see this. However, what seems to be missing from his answers is the idea of motivational displacement. He does not mention receiving his students through attention or motivational displacement, and he does not inquire about their own projects. However, it can not be concluded that he does not do these things simply because he does not explicitly mention them. Instead, it can be seen that he models some caring behaviors in his responses.

Johnny also gave examples of being respectful of all of his students, saying that he saw them as individuals, and not simply as a product to work on, though he was not the only one to mention a way of seeing students. Kelsey mentioned treating her students "like little people," demonstrating that she saw them as people, just little ones, and that she wanted to treat them as people. Also, Michael stated clearly that he "treat[s] them (students) as humans, instead of just automatons just sitting in a desk" (Interview, March, 2011). The other teachers did not explicitly mention the way that they viewed their

students, though it can be inferred from their other comments that they saw their students in similar ways. Therefore, it seemed that teachers demonstrated their practice of seeing their students as people and trying to treat them as such, which is encouraging.

Overall, then, all these teachers brought up the idea of ‘treating students fairly,’ though they described this in different ways. It was clear that teachers had thought of the idea of treating students fairly, and they mentioned the way that they viewed their students as people, and not just as grades or members of a roster. Also, some teachers brought up specific policies that they had relating to fairness in the classroom. These responses sound a lot like the ethical rules that Noddings writes against, saying that they ought not be the basis of ethical behavior. Nonetheless, it can’t be denied that these teachers have thought about fairness, and desired to treat their students fairly. Such policies, implemented with an ethic of care, can be very helpful in demonstrating this care to students. Moreover, other teachers who talked about their own behaviors that had the potential of being unfair to some students demonstrated that they did not merely rely on ethical rules for the basis for their behavior, and this does agree with the ethic of care prescribed by Noddings.

Interestingly, only Maria and Brittany brought up the idea of culture, with Maria mentioning her attempts at “treating [students] not just fairly, but in a way where they’re going to understand better from their cultural background” (Interview, March, 2011) and Brittany stating the need to be conscious of being unfair to certain races through her words or actions (Interview, March, 2011). To both it seemed necessary to be aware of different cultures when thinking of fairness and their decisions. It seems significant here that both of these had worked in schools with a majority of students being ethnic

minorities. Such considerations must be made when considering how one cares for the students in his/her classroom. Therefore, when speaking of fairness, seeing students as people and having policies to treat students fairly are not sufficient to care for them, but these specific things do agree with the ethic of care advised by Noddings.

### **Desire for Students' Well Being**

When looking at the theme of teachers' desire for their students' well-being, an interesting difference was found between high school and middle school mathematics teachers' responses. In particular, high school teachers, as well as Johnny the pre-service high school teacher, tended to mention this topic frequently throughout the interview, while middle school teachers mentioned it only scarcely. It was not that high school teachers' responses all agreed with each other, but rather that they brought up the topic of their students' well-being much more often than the middle school teachers. Though it didn't seem as if the middle school teachers didn't have a desire for their students' well-being, this desire was not pronounced as the high school teachers' desire seemed to be. High school teachers' responses are discussed first here, followed by the middle school teachers' responses in the subsequent paragraphs.

One example of the high school teachers talking about their desires for their students' well-being is Brittany's comment about her desire to see her students grow. She said that she didn't "want them to not mature and then not be able to handle life when they get out of these four walls" (Interview, March, 2011). Moreover, she stated,

"I don't want to see them make some of the same mistakes that I've made, so I'm very strict...because I need them to understand there are consequences for your actions, whether math-related or not, and I try to help them to understand that

someone can love you by forcing you to deal with the consequences of your actions” (Interview, March, 2011).

This response is similar to Noddings’ example of a teacher watching her student solving a math problem and desiring to see him succeed in the task:

“Ms. A, a math teacher, stands beside student B as he struggles to solve an equation. Ms. A can almost feel the pencil in her own hand. She anticipates what B will write, and she pushes mentally toward the next step” (Noddings, 2002, p. 17).

Clearly, Brittany desired to see her students succeed, though her response did not seem to contain the motivational displacement described by Noddings. Nonetheless, her response demonstrated her wish to see her students succeed and the actions she took to try to ensure that, which answered both how she perceived caring, and provided specific examples of her actions in response to her perception of caring.

Michael, discussing how his students might use mathematics in their future lives, mentioned being able to “share with them things of my life that will make them be good people, and hopefully they’ll pick up on that” (Interview, March 2011). He also mentioned that he had noticed how relationships were much more important in teaching than he had originally envisioned. Thus, he demonstrates his desire to see his students not only achieve in the classroom, but also to grow up to make good decisions and be good people, as well as his actions that came from that desire. Like Brittany, his responses lacked mention of Noddings’ idea of motivational displacement, but nonetheless showed his desire to see his students’ well-being. In addition, Brittany stated that students “need to know that you are there to support them period, whether they get an A, whether they



get a D,” and she talked throughout the interview of the importance of supporting her students, mentioning specific ways that she tried to do that. She seemed to imply that one could not fake desiring students’ well-being when she said that “you can tell when you walk into their classroom that the teacher cares,” which also demonstrated her perception of the need for an ethic of caring to be present within the classroom. This ethic could not be faked, since the students would be aware whether the teacher actually cares or not, and instead the ethic should guide the teacher’s actions in the same way that an ethic of caring guides the actions of the one caring in Noddings’ writings.

Brittany desired to have such an ethic and tried to help her students to grow as people, and not just students. One way that she tried to ensure this growth and well-being was her decision to be strict to help her students to make good decisions, while another was her attempt to show her support for her students. Michael tried to share things from his life that would help his students, and thus showed his desire for his students’ well-being, as well as his actions based on this desire. It is clear that these high school teachers were somehow aware of their students’ situations and had practiced motivational displacement in some way, and thus their responses seemed to provide specific examples of trying to care based on their perception of caring in their classrooms.

Middle school teachers, on the other hand, didn’t seem to mention their students’ well being or growth as individuals nearly as much as the high school teachers. Instead, they seemed to discuss in detail their attempts to see their students succeed in math. Kelsey brought up the idea of “looking for the best interest of the students,” though she didn’t really explain the idea further, and didn’t clarify whether it extended to students’ personal lives, or if it only affected their academic lives. Maria did specifically mention,

“I want them to know that I care about them,” demonstrating her desire not only for her students’ well-being, but also to provide care for her students. Thus, it is too simplistic to say that middle school teachers didn’t think deeply about this topic. Instead, it is likely that they considered the topic, and simply didn’t mention it specifically, choosing to discuss their attempts to have students succeed in mathematics instead. The difference in focus on the discussion could be due to students’ differing maturity levels between high school and middle school, or other factors. It is clear that Maria wanted to care for her students, and though she used the term ‘caring about’ in her quote, “I want them to know that I care about them,” it appears that the relation she is describing is really the ‘caring for’ relation; her use of the term can be attributed to her lack of familiarity with Nel Noddings’ writings about and definitions of caring. It is, however, interesting that high school teachers and middle school teachers seemed to emphasize their desires for students in different ways.

The main difference between high school teachers’ responses and middle school teachers’ responses was that high school teachers discussed this topic at length and that middle school teachers really didn’t. This was surprising, since high school is oftentimes seen as more serious and content-focused than middle school. In direct opposition to Noddings’ quote that “the main aim of education should be to produce competent, caring, loving, and lovable people” (Noddings, 2005, p.174), Kelsey seemed to see caring as a way to get to the goal of having students do well in math, stating that “it makes the year a lot better if you can have those caring and supportive relationships. The math is the goal, and the caring relationships are the means to that” (Interview, February, 2011). Therefore, in her mind it appeared that academics took precedence over students’ well-

being, something that goes against the ethic of care that her responses agree with in other parts of this study.

Johnny's responses relating to this theme were quite interesting, and seemed to be distinct from the responses of either high school or middle school teachers. At one point in the interview he went on to define caring for his students:

“Caring for your students both has an affective side to it, like our emotions, and also a thinking side to it. When you say caring for your students, my visceral response is compassion. Caring for your students means empathizing with them...you're basically pouring yourself into them” (Interview, January, 2011).

Clearly, he had thought about the idea of caring for his students, and desired to do so. This seems to demonstrate his desire for students' well-being, and not just in relation to the math classroom. He spoke later about a previous experience with his students, saying, “I wanted them to know that I was proud of them. I wanted them to know that I cared about them.” Though he mentions the terms ‘caring about’ here, it seems likely that he, like Maria, is describing what is written about in the literature as a ‘caring for’ relation, as he continued by using words such as concern, compassion, empathy, and conscientiousness to describe his emotions. Thus, he desired his students' well-being, as well as good things for them, and he gave examples from the lives of others who had acted on similar desires to advocate for students, strive to “understand where [their] students come from,” and to take risks. Though he himself did not give specific examples of supporting his students' projects, it seems likely that he would try to be mindful of these, and it is interesting that he mentioned the word compassion when discussing caring. It is certainly true that this word describes a relation in which an individual

receives from the other, and in this way Johnny's response about compassion relates to Noddings' motivational displacement. Therefore, Johnny's statements seemed to fit in better with high school math teachers' responses, though they were unique on their own. His responses were also theoretical, rather than specific, and so he answered research question 1 without much of an answer to research question 2. One explanation for this difference is his status as a graduate student, which surrounds him with more theory than the full time teachers who were the other participants in this study. It is, however, clear that he greatly desired his students' well-being, and that he discussed caring characteristics within his own classroom.

### **Desire for Students' Academic Success**

Teachers from both middle and high schools, though, had much to say about their desires to see their students succeed within the classroom. Understandably, this discussion centered around their own math classrooms, with teachers talking about their own attempts to help their students to succeed in math. Again, differences were present between high school teachers' responses and middle school teachers' responses, with Johnny's responses also being quite unique. The responses are discussed in that order below.

High school teachers tended to discuss their desires to see their students succeed in the classroom in terms of their own actions and decisions. Brittany discussed the importance of connecting to students, and then being able to use this connection to have her students succeed in math. It is likely that such a connection would involve some level of motivational displacement, aligning her response to Noddings' theory, though she did not mention this idea. She went on to talk about her attempts to make her classroom be

“lighthearted at times and not be that serious about ‘Oh my gosh, it’s math and I can’t have fun,’” but that she “made it clear where that boundary is, where ok, we’re working, we can laugh, and then we’re going right back to work” (Interview, March, 2011). For her it seemed that helping her students academically came amidst relationships that she had already valued as important, which seems to agree with Noddings’ caring theory. Michael, similarly, made mention of his policy of respecting self, others, and property. Furthermore, Brittany indicated several times that she desired for students to succeed in school, even if that meant outside of her classroom. In this effort she said, “I try to not just focus on the math– trust me, I teach the math, but I also want them to understand you know, your studying habits.” Thus, she was one who made a distinction between desiring students’ success in math and desiring students’ success in school, also encouraging students to be more aggressive in working towards academic success. A connection can be made here to Noddings’ teacher supporting her students in their own projects, and Brittany clearly tried to do this, making the point, as Noddings does, that students’ projects are not limited to those in the math classroom. Michael, meanwhile, talked about opportunities for tutoring that he offered, as well as opportunities for students to make up tests, showing his attempts to help students in their math projects. All of these responses, then, demonstrated ways in which high school teachers had thought of their students’ academic success, and desiring it, had acted to implement policies or ways of acting within the classroom. They demonstrate teachers’ attempts to care for their students, though these tended to focus on teachers’ own actions.

Middle school teachers, on the other hand, tended to give answers that focused on their students’ struggles with mathematics. Kelsey, for instance, stated, “My biggest

challenge is breaking through the wall of the kids who come in here from the first day of school and are afraid of math.” Moreover, she talked about kids building up walls that made it difficult for her both to teach them math, and to care for them. It is apparent that she saw her students’ struggles, which relates to Noddings’ ideas on motivational displacement, though it is difficult to tell to what extent her “soul [emptied] itself of all its own contents in order to receive into itself the being it is looking at, just as he is, in all his truth” (Weil, 1977, p. 51), as her answers tended to focus on getting her students to do better, rather than receiving them in their struggles. Nonetheless, she could have skipped talking about receiving her students in their struggles to discuss the projects that she desired to support. Maria also mentioned students in low-level classes lacking confidence in their abilities in math, as well as in other subjects, which exhibits that she received their struggles to a certain extent, though it is tough to say to what extent.

These teachers did also discuss their actions to help their students to succeed within the classroom. Kelsey brought up the example of a student whose parents weren’t able to be around enough to be supportive of him doing work at home. Thus, the student struggled, which led Kelsey to suggest that he stay after school with her one Friday and finish his homework. Her willingness to stay with him allowed him to finish his work, and to thank her for staying with him. The instance led to him staying after school on other days to finish his work, and was an example of a teacher supporting her student in his academic work, as Noddings described the one caring supporting the one cared for in his projects. Maria also mentioned ‘adopting’ a student below proficiency and working with this student during lunch on work for math class, as well as work for other classes. Hence, she demonstrated her desire to see her students succeed academically, as well as

her actions to support this student's work, similar to supporting the projects of the one cared for. It is significant here Maria did not limit these projects to the mathematical domain, which is similar to the way that Brittany described supporting her students' academic success in math and in other subjects, both of which echo Noddings' writings about supporting students' efforts in different domains. Her efforts, moreover, were demonstrated on several occasions so much so that her persistence in trying to get students to succeed academically became apparent to some of her students who had planned on doing little mathematical learning: "Ms. Moore, we keep trying to break you down, but we just can't do it." All of these examples, though, while demonstrating ways in which these teachers cared for their students, tended to focus on situations of struggling students. Perhaps this is not surprising, since it can be easier to spot an individual needing care amidst that person's struggle than amidst a lack of visible struggle.

Another commonality among the middle school teachers was their mention of Connected Math, a problem-based middle school mathematics curriculum aimed at developing students' understanding of mathematical concepts, rather than just the ability to use formulas. This reference was the sole example within their responses not relating specifically to struggling students, and thus did not form a large portion of their responses. For this reason it has not been analyzed for the same period of time that their other responses relating to struggling students were, and is not mentioned here as being central in participants' answers. Since both middle school teachers mentioned Connected Math, it is certainly worth mentioning here, though middle school teachers' other responses about to their desire to have their students succeed academically tended to

focus on students' struggles with mathematics, and thus Connected Math is not seen as central to their positions.

Apart from high school and middle school teachers, though, Johnny also had unique responses relating to this theme. He began talking about his desire to see his students succeed at the very beginning of the interview, and this theme continued on through each part of the interview. He spoke of his responsibility for his students' success, saying plainly, "I feel like I'm responsible for their successes or failures," and also that he felt responsible "to provide them with experiences that will be valuable to them." It is clear that he felt strongly about having his students succeed, and thus it seemed like he worked very hard to support students in their academic projects. However, it is unclear to what extent motivational displacement was among his experiences, though it is likely to have been a part of them due to his earlier mention of the idea of compassion. He went on to talk of his attempts to care for his students, which for him seemed to include a "gut feeling where your desire is to see them (students) succeed." A few examples of his actions in response to this desire were: trying to "provide them (students) with experiences that will be valuable to them," and shaping his curriculum, instruction, and assessment around such experiences. He stated that using examples outside of their context was a disservice to students, and thus tried to get his students to better understand the concepts of mathematics through applicable examples. Moreover, a specific example, though not a real-world application, he gave of desiring to see his students' academic success related to a game he termed 'Wait a Minute.' Concerned that his students weren't able to successfully work on problems at the board and instead got distracted, he said,



“I would think about this walking home, because I lived very close by. I would think about it at night before I went to sleep, you know, how can I– what can I do, what can I do, what can I do? And I came up with this idea, I think, while I was walking on my way to school. I came up with this game called ‘Wait A Minute.’”

The game was able to engage the entire class in what was happening at the board, as well as fostering mathematical discussion, but quite significant here is the fact that Johnny mentioned how much thinking he has done on trying to come up with a way to have his students be engaged in the content. Though he didn’t discuss either his students’ feelings or his own motivational displacement in this instance, it is clear that he desired his students’ academic success. His previous mention of compassion and empathy in caring would lead one to believe that he had been practicing motivational displacement, as well as supporting his students’ academic projects. Thus, he described the emotions he had, as well as his responses to those emotions, which really seemed to demonstrate the way in which he saw himself as a caring teacher. His responses in relation to this theme, then, were an answer both to how he perceived caring, and how he acted to care for his students, which answered both research questions of this study.

Therefore, differences existed between high school mathematics teachers, middle school mathematics teachers, and Johnny, though all of these teachers gave examples that demonstrated caring for their students in some way. While high school teachers focused on their own actions to foster students’ academic growth, middle school teachers focused on students’ struggles with math, while also giving examples of their own actions. Johnny described his emotions at length, seeming like he would be familiar with motivational displacement. Based on this theme it appears that middle school teachers

would be more familiar with this concept than the high school teachers, though this can't be said for sure, since high school teachers talked at length about the previous theme, desiring their students' well-being, and middle school teachers did not. Nonetheless, all of the teachers gave examples of supporting their students' academic efforts, an important part of caring for their students, and this was in agreement with Noddings' ideas about teachers supporting their students' projects.

### **Attempts to Foster a Relationship with Students**

Looking at teachers' discussions about their attempts to foster relationships with their students, it was obvious that teachers considered this idea to be important, though differences did not seem to emerge between the responses of high school and middle school teachers. Therefore, they are grouped into one category here. Again, Johnny's answers were distinct, and these are talked about by themselves following the discussion on the high school and middle school teachers' responses.

Like the other themes, teachers tended to talk about fostering a relationship with their students on two levels: general, which provided answers to research question 1, and specific, which provided answers to research question 2. In terms of general answers, Kelsey talked about the importance of building relationships with students and asking about their lives outside of the classroom, and this was echoed by Maria and Michael. Moreover, Maria claimed that the importance of talking about things in life was greater than the importance of talking about math content. This sentiment was felt by Brittany and Michael as well. Brittany stated, "they need to know that you are there to support them period, whether they get an A, whether they get a D," and these responses seem to be consistent with attempts to get to know students, and to receive them. It seems feasible

for teachers to foster these relationships and thus receive their students' realities better, as in Noddings' ideas about motivational displacement. Overall, it seemed that these four teachers seemed to agree on the importance of building relationships with their students, and these responses tended to demonstrate ways in which they saw themselves as acting to care. Most agreed that the personal relationship was more important than the math skills, and they stated this, which also agrees with Noddings' writings, particularly that "the primary aim of every educational institutional effort must be the maintenance and enhancement of caring" (Noddings, 2003, p.172).

Also, teachers gave specific examples for how they tried to foster relationships with their students, which spoke to specific ways that their perception of caring affected their behavior inside the classroom. On a specific note here is the fact that the research question asked about teachers' actions within the classroom, though some of their answers spoke of their behavior outside of their actual classroom. Because these answers related to this theme of building relationships with students, they are included here, as well as teachers' actions within their physical classrooms. Some of the specific answers included Maria's mention of having lunch with her students, particularly the low-performing student she 'adopted' and has tried to help with academics, as well as talking about things outside of school. She mentioned inviting this student to a youth event with an organization she is involved with. The organization itself describes as its mission building relationships with kids and helping them walk through life while "sharing our lives and the Good News of Jesus Christ with adolescents, inviting them to personally respond to this Good News, and loving them regardless of their response" (Mission). Moreover, her involvement with the organization attests to the high value she puts on

building relationships with students, and trying to care for them. Again, it is evident that she values these relationships above academics, similar to how Noddings writes about the greater importance of caring relations to academics. Michael also gave specific examples of helping his students through some difficult situations in their lives by being available to talk to them. His availability and willingness, then, not only display his attempts to foster relationships with students, but also helped them out in their lives outside of the classroom, attesting to the value he put on interpersonal relationships. Another specific example that was brought up frequently is teachers' efforts to attend their students' activities outside of class time. Kelsey stated, "I go to all their band concerts. I go to all their orchestra concerts. I chaperone the dances. I do what I can outside of school to support the kids." Likewise, Michael echoed this statement by saying, "I go to some wrestling meets, I go to, you know, some baseball games, those kinds of things, to observe, drama, art, chorus, to let them know that I'm concerned about other areas of their lives besides mathematics." This did emerge as a pattern in terms of ways that teachers tried to build a relationship with their students, and teachers did mention that students appreciated such efforts. The efforts appeared to be evidence of teachers' desire to care for their students in some way, and that they were able to see the importance of things outside of their own classrooms. Finally, Brittany gave examples of students with whom she had kept in contact outside of class. One in particular had become close to her since Brittany was present in her life during some difficult times, and she had now invited Brittany attend an open house with her and her mother at a college that she will attend in the future. Such an example shows the effect that Brittany was able to have in the student's life, and how her support of the student in life and in her school projects

developed into a lasting relationship. These actions that teachers described, therefore, demonstrated specific ways in which they tried to build relationships with their students, and the actions tended to have a positive impact on students. Therefore, their perception of themselves as trying to care for their students in some way was manifested through these specific actions. Though teachers did not bring up the ways that they tried to receive their students, or motivational displacement specifically, it was clear from these examples that they valued relationships with students. It is likely that different teachers valued these relationships more than others, but those who mentioned the greater value of talking about things in life to academic content seemed to be in accord with the value placed in Noddings' writings on caring relations.

Though there seemed to be little difference between high school and middle school teachers in regard to this theme, it seemed significant that Johnny's interview lacked responses specifically about building relationships with his students. One explanation for this may be that he had just begun his student-teaching semester, and thus had not had enough of an opportunity to try to do this. Instead, he had focused much on desiring his students' well-being and academic success, and was still looking forward to opportunities to build relationships with students. This explanation may be helpful, though it may also be true that through the course of the interview he simply had not mentioned anything relating to this theme because it didn't come to his mind. Based on his other responses in which he goes to great lengths to describe his desires for good in his students' lives, it seems likely that he would try to build relationships with his students, though this can't be said for sure. A question in future interviews specifically relating to the idea of building relationships with students may be the best option for

determining his general views and specific actions about building relationships with his students.

In summary of this theme, though, teachers who were interviewed and had been teaching for a few years all gave examples about ways in which they tried to build relationships with their students. It is likely true that they went about fostering these relationships to a different extent, as they also described some different ways that they did try to foster the relationships. Overall, though, their responses spoke both to how they saw themselves as caring for their students and their students as being cared for, and to specific ways that they did this, answering both of the research questions. Assuming that teachers practiced caring in these relationships, the importance they placed on such relationships agreed with Noddings' high value placed on caring relations.

### **Involvement with Parents**

Involvement with parents also emerged as a theme based on teacher interviews, and these responses answered the two research questions. Again, a difference could not be detected between the responses of high school and middle school teachers. Instead, all of the four full-time teachers seemed to think that involvement with parents is important. They spoke about this on a general level, along with some specific examples, which also pointed to each of the research questions. Thus, their responses are grouped together in the paragraphs below. Again, Johnny's responses did not bring up the idea of contact with parents specifically, and a paragraph relating to Johnny is follows the paragraphs on the full-time teachers.

Kelsey stated in her interview that "parent communication is huge, just to show that you're working as a team I think is the biggest part," and this sentiment was felt by

the other full-time teachers. Brittany said, “parental environment is huge, so I try to make sure I involve them as much as possible.” The other full-time teachers also confirmed this sentiment, and these answers on the general level speak to how they saw parental involvement as an important aspect of what they did in their classrooms. More specifically, Kelsey mentioned sending at least a couple emails to parents each day, while Brittany mentioned that she emails each parent biweekly. Moreover, she had called each parent at the beginning of the year in order to establish contact and involve them with what was going to be going on in her classroom. Maria spoke of emailing parents of every student who was missing work in her class on Monday, and also of asking parents what their child needs specific help with from her class. Michael said that he used to email parents a lot, but this has decreased since he started putting all of his students’ grades online for students or parents to access, something that the school in general does not provide. Now he finds himself emailing parents a little bit, but less, since they are aware of their students’ grades and do not contact him about grades specifically. He did bring up a specific instance of parents asking for his input on their child’s college decision, though, and he was available to help in that process. Overall, it seemed that teachers had each implemented some sort of policy for how they involve parents in their child’s schoolwork, whether that was calling each parent and introducing themselves, emailing parents of struggling students, or putting information up online for parents to access. It was significant, then, in relation to Noddings’ caring framework, that teachers brought up the idea of their involvement with parents. For Noddings, it is important that teachers are involved in the community in which they teach, since relationships in school are only a part of children’s experiences. Therefore, teachers’ comments on their

involvement with parents were in accordance with the importance of this involvement found in Noddings' writings.

The previous examples were specific ways that teachers acted in response to their perception of the importance of parental involvement, and thus the specific examples answered the second research question. There were not visible differences between high school and middle school teachers on how they did this, but instead it seemed that each teacher attempted to connect parents from their community to their child's experience in school. This is important, since each community is unique and different, and if teachers act to involve parents, they must be aware of the children's communities. However, it is unclear what teachers thought specifically about community involvement, as well as the uniqueness of their students' communities. Moreover, cultural values affect how people practice caring, and this is a significant matter, but it was not brought up in the responses. It would have been preferred for teachers to discuss such ideas more fully, and future studies may ask such questions.

Similarly to the theme on building relationships with students, Johnny's responses on this theme seem to be absent. Again, speculation may be drawn on why he did not bring up the idea of involving parents, and whether that is due to his lack of actual experience teaching, a case of forgetting to mention the importance of this theme, or the thought that the theme is not important. It can not be determined which of these is the best explanation, or if another better one exists. He was not asked specifically in the interview about his involvement with parents, and rather this theme emerged from other teachers' responses. The best way to determine his views on the topic would be to ask the question specifically in a future interview.



Therefore, teachers spoke about their attempts to be involved with parents, and how they saw this involvement as an important issue. Valuing community involvement is in accord with Noddings' ideas, though teachers did not give an extensive amount of detail on their interactions with parents. The lack of detail made it more difficult to determine their position, and how they saw culture as relating to their involvement with parents. It can be said, then, that teachers' responses agreed with Noddings' ideas, but that their responses were limited in their description.

These five themes, [(1) fairness, (2) a desire for students' well-being, (3) a desire for students' academic success, (4) attempts to foster a relationship with students, and (5) involvement with parents] were brought up by teachers throughout the interviews, and in relation to each of the research questions, and thus they shape the way that teachers as a whole responded to the research prompts. In many ways the responses are in accord with Noddings' caring theory, though in some ways they disagree. These patterns from the five themes are brought up in the discussion section, and they are followed by certain topics that seem important in the literature, but were omitted in participants' responses.

## Discussion

This section summarizes the results of the previous section and also brings up some ideas that seemed to be absent from teachers' responses and what implications such absences may have.

It is clear that all the teachers interviewed had thought about the idea of caring in some way, and many of their responses related to the caring literature and the ideas written of by Noddings. In the five themes that emerged from the analysis of the transcripts, teachers' answers were analyzed in the way that they related to caring pedagogy and the ways that their practices differed from suggestions made within the literature. Two of the five themes had visible differences between high school and middle school teachers, and these were broken into these sections accordingly, while the other three themes had no visible differences between high school and middle school teachers' answers. Some commonalities from the results section are discussed below.

One commonality is the fact that Johnny's responses tended to differ from those of the other four teachers with respect to each theme. Only the fairness theme contained commonalities with other teachers' responses, and even then his answers as a whole painted a unique view of the idea of fairness that appeared distinct from that of the other teachers. It can not be said that he does not care for his students, since he went to such great lengths to define caring, and then to describe his own emotions towards his students and his attempts to promote their success. Clearly, his responses related to the caring pedagogy in the ways that he tried to support his students in their work and projects. However, his responses tended to be theoretical in nature, rather than specific, while many other teachers' answers provided specific examples. Inexperience may have played

a major role in his tendency to respond in a more theoretical way, since he was merely beginning his student teaching when he was interviewed, and had been away from education for a few years. Moreover, inexperience can also be said to have played a role in his lack of responses connected to ideas of fostering relationships with students or ideas of parental involvement in their child's schoolwork. It is an interesting finding that Johnny's ideas were different from those of the other four teachers, and an interesting project may be to investigate the ways that pre-service teachers' views on caring changes in the years following their landing of full-time teaching jobs.

Another commonality among teachers' responses is that many tended to discuss ways in which they tried to support their students' projects, but these responses lacked mention of motivational displacement. Instead, teachers gave some examples in which they demonstrated their attempts to foster students' success and well-being, but they failed to discuss the idea of receiving their students and being attentive to them. While it is easy to attribute the lack of vocabulary use to teachers' lack of familiarity with the literature on caring, it is difficult to tell how much teachers practice motivational displacement, and whether this occurs with some students and not others. It is logical to assume that some teachers practice motivational displacement more than others, but the level and extent to which teachers value or practice motivational displacement can not be determined here.

Moreover, some differences seemed to exist between high school teachers' responses and middle school teachers' responses. First, only high school teachers seemed to discuss their desires for their students' well-being. Middle school teachers, on the other hand, tended to give more answers about their desire for their students' academic success,

though high school teachers discussed this as well. This was surprising, as middle school seems to be a time when teachers are more concerned with students' adjustment from childhood into adolescence and from elementary school into middle school, followed by high school. Thus, one might have guessed that these middle school teachers would discuss their desires for their students' well-being more than high school teachers, but this was not the case. Another less surprising finding, though, is the tendency of high school teachers to discuss their thoughts about their students' future. Clearly, both of the high school teachers had been looking ahead to their students' lives past high school, whether than ended up at institutions of higher learning or not. Michael brought up examples of helping his students to think about the choices they had regarding colleges and majors, while Brittany gave examples of trying to teach students skills that they would need outside of her classroom, whether going to college or otherwise. She said, "we're preparing you for whatever, and when you get to college or wherever you go, that's when you decide. But until then, I have to prepare you for anything." Middle school teachers, on the other hand, didn't mention their students future, whether college or high school. Instead, they tended to focus on their own students and their own actions to help these students to succeed in their classrooms. Perhaps it was implied that helping their students to succeed in their classrooms would prepare them for high school and/or college, but this was not mentioned explicitly anywhere in the interviews. From these findings, high school teachers' responses tend to echo Noddings' caring pedagogy better than the middle school teachers' responses, since both of the high school teachers gave examples of trying to support their students in the students' own projects beyond their classrooms.

Meanwhile, absent from all of the teachers' responses was the issue of their thoughts and actions in relation to students taking Algebra I. In the literature this has been described as a 'gatekeeper course' such that students taking this course prior to beginning high school tend to have the gate to college open to them, while those waiting until high school to take Algebra I had a much lower college attendance rate. Though this issue does not specifically relate to teachers' motivational displacement or interpersonal relations, it is clear that the issue is an important one when considering their students' personal well-being and academic success, as well as the importance of higher education in discussing issues of poverty and oppression. Teachers' silence on Algebra I being a gatekeeper course could be attributed to the interview discussion going in a different direction, and while they may have had much to say on the topic, they did not get the chance to do so. However, this conclusion can not be made for sure, as teachers may in fact have been unaware of the role Algebra I plays in students' academic success. Instead, it is argued here that teachers must be aware of the state of Algebra I as a gatekeeper course and be aware of where their students stand in relation to having the collegiate gate open or closed to them.

In discussing the issue of the Algebra I as a gatekeeper course, teachers must also be aware of their students' culture. It is no mystery that white students tend to outperform ethnic minorities on standardized tests, as well as attendance at prestigious institutions of higher education, and this trend is also very evident when comparing students from affluent backgrounds to those coming from backgrounds of poverty. As such, teachers need to be aware of where their students stand in terms of their ability and preparation to attend college. It is assumed here that attending college would serve as a tool for opening

many doors of opportunity and making poverty less likely for those who attend, and thus that teachers should encourage their students to attend institutions of higher learning. However, in accordance with Noddings's writings, teachers must receive their students and support them in their own projects, rather than just the projects that teachers see fit for them. Moreover, in discussing culture, teachers must also be aware of the ways that different students see the idea of caring, based on the different cultures that they come from. Only Maria and Brittany even mentioned culture in the interviews, and it was stated earlier that both of these two teachers had worked in schools with high populations of ethnic minorities. The other teachers, though doubtless working with some ethnic minority students, did not mention experiences similar to those of Maria and Brittany in the ethnic composition of their schools, and this lack of experience with non-white students may be a factor in their omission of responses relating to culture. Again, it is encouraged that teachers be involved in the community surrounding the school, and not see their job as merely an academic task.

Finally, it seemed to stand out that several of the schools had policies and experience relating to character education. Maria gave examples of awards given to students who showed evidence of embodying character traits such as 'honesty' or 'integrity,' and Michael confirmed that his school had a similar policy. Though both teachers seemed to participate in the program, it was interesting that they both seemed to agree that it did not actually make students live with more honesty or integrity. When asked if modeling the character traits was more effective than mentioning and discussing them, Maria said,

“Yeah, I would say... We do, we have like a homeroom, extended homeroom, on Fridays where we’re supposed to do character type education, where for that one Friday of that month we talk about what does it mean, and we do activities and stuff like that. I don’t know if that really... I feel like the kids with the best character have quality parents. That’s what it comes down to, for the most part. Or, like, good role models.”

Similarly, Michael stated,

“The best incentive is to have parents that are ethical. I don’t personally think that the current program of student of the month causes people to be ethical. I think it just recognizes the ones who are. I don’t think it implements a change.”

It is clear that these teachers recognized that while the program for rewarding ethical behavior was recognizing honest conduct or students who acted with integrity, it was unlikely to actually cause students to change their behavior. Instead, both mentioned the importance of parents and role models in children’s lives. This is very much similar to Noddings’ writings about modeling caring to others so that they too may learn caring, as she states that “the capacity to care may be dependent on adequate experience in being cared for” (Noddings, 2002, p. 22). Thus, teachers are encouraged to care for their students, and though they can not replace the positive or negative role models that these students already have in their lives, they can be models of caring behavior that affect their students, especially since “when a teacher responds to one student, twenty or thirty others learn a lesson” (Heller, 2007, p. 30).

The commonalities found among teachers’ responses and discussed in this section do not necessarily summarize all of what teachers stated about caring, their perceptions of

it, or about their own actions within their classrooms. Rather, they allow some interesting conclusions to be drawn from the interviews. The five themes that were drawn from the analysis of transcript data were not expected prior to the study, but rather emerged and helped to organize analysis of teachers' responses. Similarly, the commonalities discussed in this section came from looking at the interview data and the results of the study, and allow for suggestions to be made for future study. With these things in mind, teachers' perceptions of caring within their own classrooms, and their actions in relation to these perceptions ought to continue to be studied in future projects. The limitations of this exploratory study and suggestions for future research are outlined below.

### **Limitations and Suggestions**

A statement here is necessary about the limitations of this research study. First, this study was intended as more of an exploratory study than a full-length analysis of teachers' perceptions of caring and the way that they practiced it. As such, it is obvious that this study did not gather enough information to make broad definitive conclusions on the topic. The only data gathered here came from teacher interviews with five mathematics teachers at various levels. It is suggested that further studies continue to investigate this topic through teacher interviews, as well as interviews with students or other teachers, and possibly even observations of lessons. Gathering such data would doubtless be helpful in getting a better understanding of how teachers' perceptions of caring play out in their lessons and interactions with their students. Moreover, Fisher (1993) stated that

“unfortunately, the basic human tendency to present oneself in the best possible light can significantly distort the information gained from self-reports.



Respondents are often unwilling or unable to report accurately on sensitive topics for ego-defensive or impression management reasons. The result is data that are systematically biased toward respondents' perceptions of what is "correct" or socially acceptable" (p. 303, as in Maccoby and Maccoby, 1954).

Therefore, it is possible that teachers' responses in interviews were biased to depict themselves as caring in order to portray themselves in the best possible light. Attempts were made to limit this through the way that questions were asked, but interviews with students, as well as observations of the teachers' classrooms would also be very helpful in determining the extent to which teachers model caring behavior to their students.

Having said this, the data gathered in this study is still quite useful, and would serve well as the starting point for further research and investigation into teachers' perceptions of caring and the ways that their perceptions of caring affect their behavior inside and outside of their classrooms.

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