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Students with a History of Academic Struggles in Mathematics and their Perceptions of Caring Mathematics Teachers

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How do students who are part of a ninth grade mathematics intervention describe their experiences with caring mathematics instruction? The most accurate predictor of high school completion is mathematics achievement in the middle grades and high school (Bowers, Sprott, & Taff, 2012). As a high school mathematics teacher, an obvious place to begin to address the mathematics achievement of students is to focus on mathematical content and sound pedagogy. Yet Battey (2012) showed that knowledge of the content and good pedagogy are not the only qualities that lead to quality mathematics instruction, but so is "the importance of relational interactions within instruction" (p. 125). Students who have a history of poor mathematics achievement as well as low interest in the study of mathematics show gains when they not are not only held to high standards by the teacher but are also shown care by the teacher (Dever and Karabenik, 2011). Dever and Karabenick (2011) showed that the teacher's "additive effect of being caring toward students closed the 'interest gap' for the students who were least interested in math on average in this study (namely, Hispanic students)" (p. 142). Moreover, there was shown to be an "effect of the level of teacher caring, particularly on motivational outcomes" though it "differs across student groups" (p. 141). The authors also stated that "further studies should be designed to consider how different groups of students define a 'caring teacher'" (p. 143).

But why the importance of caring instruction for the sake of increased mathematics achievement? Is that the goal in and of itself? Almost one in three U.S. public school students who start high school never complete high school (Stetser & Stillwell, 2014). In 1918 the National Education Association (NEA) posited that public education in the U.S., in the absence of any other unifying institution, has been the glue that binds U.S. society. Almost a century later, Balfanz (2009) revisited the idea of the importance of public education in America:

> A much maligned but durable institution, the American high school has played a key role in shaping the nation since its inception in the mid-nineteenth century. It has provided a means of upward mobility, served as an engine of economic growth, and played a vital role as a community-building and socializing institution. (p. 18)

But mathematics achievement that leads to high school completion is not important solely for U.S. economic growth potential nor a means of socialization. Personal and interpersonal wholeness is also an aim. The importance of relationships in the classroom and "the absence of attention to such is a form of fundamental neglect that robs our students of the opportunity to secure satisfactions of genuine work" (Eisner, 2003, p. 656). Learning is highly relational. How can mathematics teachers interact with students in ways that show deep, genuine caring on a daily basis? Noddings (1984) stated over 30 years ago:

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

Caring is a complex construct. How students perceive care should inform how high school mathematics teachers instruct and engage students, especially students who have a history of academic struggles and perceived poor performance in mathematics.

Being able to understand how students who have a history of academic struggles in mathematics describe caring mathematics instruction has potential to inform mathematics teachers' pedagogical choices as well as their relational approach to working with students. How do teachers better understand if they are being perceived as caring? I plan on examining these perceptions from an interpretivist perspective. A phenomenological approach will allow me to

apply a "single-minded effort to identify, understand, describe, and maintain the subjective experience of the respondents" (Crotty, 1998, p. 83). Interviews, student journals, and teacher-student observations will help me better understand and interpret students' perceptions of teacher caring in ways that authentically lead to better understanding of students by teachers; especially high school mathematics teachers.

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