Using Cogenerative Dialogue to Incorporate Students' Perspectives about Their Experiences in a Mathematics Classroom in an Urban School

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The consistent underachievement of African American students in mathematics warrants an investigation into their perspectives of the types of teaching and learning that promote effective learning environments for them. There is a growing body of research that examines students' perspectives of their experiences in mathematics classrooms (Stinson, 2008; Terry & McGee, 2012). This paper adopts a critical perspective of an on-going empirical study to showcase the use of students' perspective in a middle school mathematics classroom. This study will help gain a better understanding of how to better support students through their experiences in their mathematics classroom with cogenerative dialogue. As such, this study has important implications for students' success in mathematics in urban schools.

Introduction

There is a missed opportunity for students to offer potential suggestions for what they believe helps them navigate learning in their school and classrooms. The perspectives of underrepresented and culturally diverse students in urban schools are not consistently acknowledged and valued. When given the opportunity, students may have much to say back to their teachers, administrators and schools about their experiences.

This on-going dissertation study will explore the nature of how a teacher and her students participated in cogenerative dialogue (hereafter, cogen) to enhance students' opportunities to learn mathematics over time. Cogen can be defined as the "use [of] current understandings to describe what has happened, identify problems,

articulate problems in terms of contradictions, and frame options that provide us with new and increased choices for enhancing teaching and learning" (Roth & Tobin, 2002, p. 252). The use of cogen may provide insight into the use of students' perspectives in mathematics classrooms and could potentially enhance students' mathematical experience and learning. Examining how, and in what ways, teachers and students participate in cogen may reveal mathematics' teacher strengths, provide insight into how they can better promote their students' mathematics learning, and reveal ways their teacher might be inhibiting student success.

Significance of this Work

Haberman (1991) asserted that teachers should seek to actively involve students in activities that engage them in the classroom. An understanding of schooling from students' perspectives may help schools to identify and target critical areas, which may, in turn, direct educators to focus on ways to promote better student experiences (Mitra & Gross, 2009).

Relevant Literature

Student Perspectives

Empowering African American students to do their best work requires placing their voices at the center of the discussion of what works for them in the classroom (Howard, 2001). Scholars who have successfully examined African American students have addressed the issues of race and how it played a role in students' mathematical background (Stinson, 2008), examined students' mathematics identity (Martin, 2000), and revealed how high achieving African American males rely on support networks inside and outside of the classroom (Terry & McGee, 2012).

Cogenerative Dialogue

Cogen works best when all participants, especially students, feel that by participation they are provided with opportunities to actively improve or alter their learning conditions in the classroom (Martin, 2006). These conversations are aimed at identifying and reviewing what seems to work and what does not, especially the practices that may disadvantage certain students and truncate their learning (Roth & Tobin, 2002). Although there is not official protocol highlighting the ways to engage with cogen, typical structures include the teacher soliciting and collecting student feedback about their experiences in their classroom, and then discussing the feedback explicitly with the students. Studies have highlighted the benefits of the use of cogen for improving the quality of teaching and learning (Lehner, 2007), and providing empowering experiences for students (Martin, 2006).

Research Question

This on-going project seeks to answer the following questions: 1) What are African American students' experiences when their mathematics teacher engages them in cogen? 2) What feedback do students provide their mathematics teacher with during cogen?

Theoretical Framework

Critical theory is a type of social theory oriented toward critiquing and changing society as a whole. It is difficult to define because, as Kincheloe and McLaren (2005) noted, there are several critical theories that continue to evolve. Critical theory debunks the idea that there is one way of seeing and knowing. As Swaminathan (2007, p. 22) explained, "Consequently, to address savage inequalities and meet social justice objectives, it is crucial to create spaces in schools for students' voices to be heard and taken into account in structuring educational experiences".

Critical Pedagogy

Within the larger framework of critical theory exists critical pedagogy that focuses on listening to students and allowing their voices to be heard and embraced in the classroom. Critical pedagogy affords an opportunity to connect to students' experiences. Utilizing student perspectives can provide a democratic learning environment in the classroom. This paper will pay attention to counter-hegemonic practices in the classroom, which refers to centering the voices and experiences of those who have historically existed within the margins of mainstream institutions – namely African American students in mathematics classrooms.

Methods

Setting and Participants

This study was conducted in a 7th grade Pre-Algebra classroom at Westside Middle and High School in an urban community in the Midwest. The school enrolls approximately 1700 students per year. In 2013, 95% of the students were African American or Latina/o and about 88% of the students received free or reduced-priced lunch. To gain in-depth perspectives of minority student experiences, the data used in this study highlight focus-group sessions with 12 African American and Latina/o students who were enrolled in the same pre-algebra classroom. Their teacher, a White middle-class woman, wanted to improve communication with her students through the use of student feedback.

Data Sources and Analyses

The data sources for this study included student feedback forms, video-recorded classroom observations and audio-recorded focus groups sessions (Krueger & Casey, 2000). The student feedback forms were co-constructed by the teacher and the author. The focus group questions and student feedback forms included questions about students' mathematical understanding and any pedagogical changes

that occurred in the classroom. I observed the classroom an average of three times a week and transcribed video data each time that the teacher engaged in cogen with the students. I held two 90-minute focus group sessions before and after the teacher held cogen sessions. During these 90-minute sessions, I asked students to speak and reflect on their experiences with cogen. On average, six different students were present at each session.

Data will be analyzed by identifying emerging patterns and responses from the cogen sessions and focus group data, leading to the establishment of codes and the identification and creation of thematic categories that highlight the key findings (Miles & Huberman, 1994). I will analyze the conversations during the cogen sessions and focus group data, paying attention to what the students are reiterating. I will also pay attention to student feedback forms that could provide more information about the students' experiences before, during, and after engaging in cogen sessions with their teacher.

Preliminary Findings

This on-going analysis suggests that the students encouraged the teacher to use more hands-on activities, and less teacher-centered instruction. Because their teacher solicited feedback, the students also noted that she cared about them. More information about the conversations during cogen will be shared in the presentation.

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