

Critical mathematics discourse in a high school classroom: examining patterns of student engagement and resistance

Andrew Brantlinger

Published online: 18 August 2013

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Abstract This article explores the potential of critical mathematics (CM) in terms of its ability to disrupt traditional patterns of student participation in classroom discourse. It draws on tools from critical discourse analysis to examine transcripts from CM activities taught in a remedial high school setting. It points to the promise of CM in terms of its ability to alter established patterns of participation and achievement and to engage previously disengaged students. It indicates how CM instruction might open up a discursive space for traditionally marginalized students to express their ideas and to assert their subjectivity. However, it also raises issues that mathematics educators interested in critical pedagogy should consider, including ongoing issues of passive and active student resistance to CM.

Keywords Equity and diversity · Critical mathematics · Discourse analysis · Secondary mathematics · Student participation

1 Introduction

Many educators have advanced critical pedagogy as a means to improve education for all students, but particularly impoverished students and students of color (see, for example, Ayers, Quinn, & Stovall, 2009). Critical pedagogy as outlined by Freire (1971) rejects traditional, assimilationist teaching and instead is designed to foster students' *critical consciousness*, or understandings of the forces and institutions that shape their lives, and *critical agency*, the sense that students can fight for justice and make a difference in the world. It requires that students be positioned *subjectively* so that they come to understand themselves as competent and informed political actors and also co-determine the ends and means of their own education (Freire, 1971; Pruyun, 1999). As part of this subjective positioning, students should be provided opportunities to construct their own understandings of disciplinary subject matter and to take a critical perspective on this knowledge and how it is used (Skovsmose, 1994).

In *Discourse Wars in Gotham West*, Pruyun (1999) shows that it is necessary to get beyond surface level appearances and general descriptions of projects to the level of discourse in order to understand whether or not critical pedagogy is actually *subjectifying*. Pruyun notes

A. Brantlinger (✉)
University of Maryland, College Park, MD, USA
e-mail: amb@umd.edu

that reports about critical pedagogy often “[fail] to elaborate on what kinds of face-to-face talk were being used ... that is, on the specific discursive classroom practices that contributed to the success or failure of such [interventions]” (p. 4). He further observes that while student agency was a primary concern of previous studies of critical pedagogy, “it was difficult to discern from the case studies how this was specifically fostered and developed, and, maybe even more importantly, how it came into existence in the course of everyday classroom practices” (p. 4). Pruyin’s (1999) analysis of classroom discourse begins to address this deficiency in critical education research in the area of literacy instruction. This paper begins to address this deficiency in the area of critical mathematics education.

1.1 The genealogy of critical mathematics

Critical mathematics (CM) instruction can be formulated differently depending on the critical theory that informs it, the social context in which it takes place, and the felt needs of students (Powell & Brantlinger, 2008; Skovsmose, 2011). While Skovsmose (1994) and Frankenstein (1983) both see their critical interventions as enlightening mathematics students so they can work towards socially democratic outcomes, these CM innovators incorporate different theoretical perspectives and work in different contexts and hence develop somewhat different visions of CM.

Skovsmose (1985, 1994, 2011) draws principally on the work of Frankfurt school theorists to develop CM. In line with these roots, he sees CM as a vehicle for examining the technical and frequently hidden use of mathematics by powerful institutions, decision-makers, and technocrats in advanced capitalist societies. Skovsmose and his collaborators assert that, in such societies at least, people “live in an environment built up of mathematics in action to a considerable extent. To make sense of this environment, and to be able to operate within it, one needs to be able to ‘read’ it and to ‘read it as open to change’” (Penteado & Skovsmose, 2009, 219–220). In *Towards a Philosophy of Critical Mathematics Education* (1994), Skovsmose describes three CM projects designed to help Danish elementary school students develop the capacity to reflect critically on mathematics in action in the world and in school. The first project had students program computers using LOGO, the second required them create designs for a park, and the third asked them to figure out how to spend money on a local recreation center.

Skovsmose has influenced a diverse range of CM educators working in Europe and elsewhere (e.g., South Africa) (e.g., Arlø & Johnsen-Høines, 2010; Vithal, 2003). Pais, Fernandes, Matos, and Alves (2012) and Andersson (2011) cite teachers who use Skovsmose’s ideas to develop CM instruction in Portuguese and Swedish schools respectively. Despite working in different educational contexts, these mathematics teachers struggled with various aspects of CM. The researchers point to the conservative nature of schooling in advanced capitalist societies and mandated curriculum objectives as significant barriers to CM implementation. Pais et al. (2012) observe that the “critique” of critical theory and pedagogy can be “domesticated” or lose “its most radical meaning” when enacted in social institutions designed for social reproduction (p. 32).

Drawing principally on Paulo Freire’s (1971) ideas about critical literacy, Frankenstein (1983) incorporates political consciousness-raising goals into the teaching of mathematics. Like Freire, her critical social focus is on the situation of oppressed, exploited, and historically marginalized peoples. Her book *Relearning Mathematics: A Different Third R—Radical Maths* (1989), features a CM curriculum that centers on critical data analysis and basic statistics activities designed to help adult learners examine structural inequality and institutional bias. Frankenstein argues that CM educators should respect students’ prior understandings but that

they also “challenge what most people ‘take for granted,’ thereby expanding students’ interests and imaginations” (Frankenstein, 2012, p. 51). Although Frankenstein (1991) acknowledges some student resistance to CM, she asserts that her students—most of whom are adult college students returning to school after years in the workforce—get much more out of a CM curriculum than they would if they learned the standard, depoliticized mathematics curriculum. Frankenstein’s Freirean-inspired CM has had a particularly strong influence in the U.S. context. This is perhaps because, like Frankenstein, critical educators based in the U.S. generally embrace Freire’s approach to critical pedagogy as well as his optimistic assessments of its emancipatory potential (see, for example, Ayers et al., 2009).

Gutstein (2003, 2006, 2012) and Gutiérrez (2002) build principally on Freire and Frankenstein in order to develop CM theory for elementary and secondary school settings in the U.S. context. Following Freire and Frankenstein, they specifically seek to empower impoverished students and students of color. Both envision CM as a “tool” to “engage marginalized students in mathematics” (Gutiérrez, 2002, p. 167). Gutstein (2007) concludes that CM helped his students, who lived in a Latino immigrant community in Chicago, develop their agency and subjectivity as “people who see themselves as historical actors, capable of remaking society” (p. 422).

Gutstein (2003, 2006) and Gutiérrez (2002) also aim to systematically incorporate mainstream reform mathematics as outlined by the National Council of Teachers of Mathematics (NCTM, 1991, 2000) while addressing critical concerns about its lack of social relevance and political commitment. They emphasize that students should develop their mathematical power as outlined by the NCTM (2000, p. 3) while also learning mathematics to facilitate social justice. I use the term “reformist critical mathematics” or “RCM” to distinguish this U.S.-based Freirean and reform-inspired version from other CM theorizations. However, to be clear, RCM fits under the broader umbrella of CM.

RCM might be considered a natural consequence of mainstream reforms in the U.S. context designed to replace traditional, teacher-centered pedagogy (Cazden, 2001; NCTM, 1991, 2000). Critical and mathematics educators alike have directed much criticism at traditional instruction in which the teacher lectures from the front of the room and students are expected to learn passively and work independently at their desks on routine tasks (see, for example, Cazden, 2001; Freire, 1971; Mehan, 1979; NCTM, 1991; Pruy, 1999). While traditional instruction can result in students developing fluidity with mathematical conventions and procedures, students come to understand mathematics and other academic disciplines as pre-ordained and mostly irrelevant to their own interests and futures (Boaler, 1997).

Traditional classroom discourse has been a major object of scholarly critique. Traditional teachers tightly control classroom discourse and activity in part by relying on Initiation-Response-Evaluation (IRE) discourse patterns that essentially are closed to meaningful student input and unresponsive to their ideas (Cazden, 2001; Mehan, 1979). In traditional IRE discourse, the teacher initiates a lesson with a question, students respond briefly within defined parameters, and the teacher then either explicitly evaluates the students’ response or repeats the cycle with new initiations and implicit evaluations. From a critical perspective, this discursive patterning *objectifies* students and reinforces hegemony as it communicates that student ideas do not count (Freire, 1971; Pruy, 1999).

CM advocates have observed that the quality of dialogue in the CM classroom is crucial to student subjectification (Arlø & Skovsmose, 2002). However, the CM literature, inclusive of RCM literature, has only recently begun to consider issues of classroom discourse. It has not done so in much detail. While Gutstein (2006) reports that he employs a “pedagogy of questioning” (p. 132) and avoids “teacher telling” (pp. 107), he does not show how this manifests in micro-level discursive interactions with students. Gregson (2013) provides a

glimpse of what classroom discourse might look like when a full-time mathematics teacher implements RCM pedagogy. While this U.S.-based teacher follows Gutstein (2003) in seeking to use RCM to empower “marginalized students” to “fight against oppression in the long term” (p. 177), discourse excerpts from her classroom suggest that, in order to transmit critical messages about society, she falls back on objectifying and teacher-centered discourse. Andersson (2011) observes a similar reliance on traditional discourse scripts in her study of a Swedish CM teacher.

While the studies by Gregson (2013) and Andersson (2011) are suggestive, there is a need for research on CM instruction to examine classroom discourse in more detail. This paper begins to address this gap for RCM instruction. More specifically, it draws on discourse analytic approaches of Mehan (1979) and Cazden (2001) to examine the structure of discourse during RCM activities and how this compares to traditional classroom discourse. It draws on constructs elaborated by Pruyt (1999) and Gee (2005) to explore how students were positioned by me (their teacher) and how they positioned themselves during course activities. The analysis points to the promise of RCM in terms of its ability to disrupt established patterns of participation and to engage previously disengaged students. It indicates how RCM instruction might open up a discursive space for traditionally marginalized students to express their ideas and to develop their subjectivity. However, it raises issues that mathematics educators interested in critical pedagogy should consider, including ongoing issues of passive and active student resistance to critical pedagogy.

2 Researching reformist critical mathematics pedagogy

There were few examples of classroom-based research on CM in general and RCM in particular when this study was implemented in the winter of 2003–2004. This situation is changing (Andersson, 2011; Gutstein, 2006, 2007; Gutstein & Peterson, 2005; Gregson, 2013; Pais, Matos, & Alves, 2012; Turner, 2012). A literature review conducted in 2003 indicated that no studies had been conducted on CM, reformist or otherwise, at the high school level. Gutstein’s (2003) research on RCM in his own middle school classroom was the most relevant study when I proposed this study, although, as indicated, classroom discourse was not a focus of his research. Given the absence of models, then, this research was designed as an exploratory study that would involve producing and evaluating a RCM curriculum as well as taking an in-depth look at its implementation at the high school level.

A qualitative, practitioner-research design was judged appropriate because of my aim to generate insights about a complex and underexplored educational phenomenon in a particular context (Anderson, Herr, & Nihlen, 1994; McKernan, 1991). Practitioner-research provided greater flexibility to experiment with RCM pedagogy than other research designs. I also understood that I would have a difficult time recruiting an experienced urban mathematics teacher to use RCM materials and to remain engaged in the project from start to finish.

The larger study from which this paper was produced focused on various dimensions of RCM pedagogy. It included a description of the curriculum design and implementation processes and featured a curriculum analysis that compared RCM instructional materials to topically equivalent reform and traditional materials (Brantlinger, 2011a, b). It included pre- and post-tests to measure mathematical learning outcomes and pre- and post-interviews with students to better understand the perspectives of youth whose views are rarely considered in the reform of mathematics education (Brantlinger, 2007). It also examines how I came to view RCM instruction as a result of planning and teaching it (Brantlinger, 2013).

This paper presents results from the discourse analysis of transcripts of 6 h of reform activities and of more than 10 h of RCM activities from the 72-h course. It addresses the following research questions:

- What were the micro-level patterns of discourse in RCM and reform activities and how did these patterns evolve (or not) over the timespan of the course?
- How were students positioned discursively in RCM and reform activities and how did students respond to this positioning over the timespan of the course?

In addressing these questions, this paper adds to our understandings of RCM pedagogy, in particular, its potential for changing patterns of student participation and engagement in the mathematics classroom. It also should be noted that, while classroom discourse in RCM activities is the principal focus of this paper, the analysis of discourse in reform lessons was essential as reform activities laid the foundation upon which RCM activities were to build.

2.1 Research setting and student participants

This research took place in a remedial geometry course in the night school program at Guevara High School (this name and all names of students are pseudonyms). The semester-long course was compressed, running 2 h per evening, 4 evenings a week, for 9 weeks. It was offered to students who had earlier failed a geometry course or who for disciplinary reasons were not allowed into the Guevara day program. The Guevara night school was designed to help these and other Chicago Public Schools students gain workplace skills while completing academic requirements necessary for high school graduation.

Because of the national No Child Left Behind legislation and Chicago's own accountability regulations, teachers at Guevara and other non-selective schools were pressured to raise students' exam results and many were strongly encouraged, often required, to teach from scripted materials (Dell'Angela & Cohen, 2003; Lipman, 2004). Like many other neighborhood schools in Chicago, Guevara had been on probation for failing to raise low test scores (Robelen, 2003). Despite promises that accountability policy would narrow the achievement gap by raising student performance, fewer than 10 % of Guevara students tested at or above grade-level in mathematics (Chicago Consortium of Schools, 2004). With a chronically high dropout rate, about sixty-percent of entering freshmen failed to graduate within 5 years.

Initially 32 students were enrolled in the night course. Due to a mandatory attendance and promptness policy, 4 students were dropped; so 28 students completed the course and earned course credit. Of those who completed the course: 10 were full-time night school students, 5 attended both day and night school at Guevara, 10 went to regular day schools elsewhere in Chicago, and 3 worked full-time outside of school and were attending night school to complete courses required for graduation. The ten full time night school students were not allowed in the regular day program for such reasons as pregnancy, gang involvement, poor attendance, and disruptive behavior. Some expressed frustration about being blocked from day school in conversations and written assignments.

Enrolled students were mainly 18 and 19 years old, so they could give permission to be in the study. Thirteen students were of Mexican descent, 7 were Puerto Rican, 6 African American, 1 Honduran, and 1 Pakistani. Many were first or second generation immigrants. While I did not collect data on family socioeconomic status, over 90 % of students at Guevara received free or reduced lunch at the time of the study; meaning most lived in low-income households. The majority of my students lived with single parents or guardians, a

few lived in two-parent households, and several lived on their own or with older siblings. One lived with his pregnant wife. Three female students were pregnant and four others already had children. Many students had full- and part-time jobs and were supporting themselves economically. The students had a range of post-secondary plans: four young men had enlisted in the military prior to my course and a few others were considering it; a second group who wanted to be engineers, nurses, teachers, businesswomen, and lawyers planned to attend college; and a third group who planned to become auto mechanics, beauticians, policemen, and nurses' aides expected to attend a post-secondary technical or vocational school.

A distinguishing feature of the night school was the visible presence of armed security guards and Chicago police officers in and around the night school. About this, one female student in the course wrote: "School to me is run like a jail. ... We all have ID numbers which is how we are known. I think they go overboard." (Student Work, 11/19/2003). Academically speaking, it appeared that not much was expected of students in the night school program. In a pre-course interview, Jayla summed up her experiences as a student in this program as follows: "we don't really have to do anything in night school, but just be here, and *don't* talk, and just keep quiet." In such an environment, it was not surprising that many of the night school students seemed more concerned with getting through my course for accreditation than for learning mathematics. These students and others told me that they would do the minimum amount of work necessary to pass the course. Several young men came drunk or high to class on occasion during the first few weeks.

I agreed to teach the night school geometry course provided I could conduct research on my RCM instruction. The Guevara administration approved of my research while also expressing concerns about the use of critical pedagogy with "these students." In terms of study participation, I explained to students that they could choose not to give consent and could withdraw consent granted at any time during the course without penalty. In my study proposal, I promised to abandon my critical pedagogical aims if I sensed that they were doing more harm than good. There were several occasions during the course that I chose not to do planned RCM activities for precisely this reason. That said, my rationale for choosing impoverished students who had experienced past failure in mathematics was that I thought they were likely to benefit from a RCM curriculum that, for example, allowed them to use mathematics to question why they, and students like them, receive an inferior education in inferior schools with inferior resources. While all of the students consented to being videotaped, a few requested that they not be the focus of the camera. Five students either did not consent to have me analyze their in-class work or to be interviewed, so I eliminated their work samples and did not interview them.

2.2 Data collection and analysis

The primary data source for this paper was detailed transcriptions of spoken discourse from 16.5 h of videotaped lessons. Ten and a half hours were from the RCM activities that were implemented throughout the 9-week course. Six were from reform (i.e., IMP) activities—3 h from the second week and 3 h from the seventh week of the course. Secondary sources of data were 12 audio-recorded pre- and post-interviews with night school students, samples of students' written work, and pre- and post-exams. I produced transcripts from videotaped night school lessons by watching classroom action on the video portion of the tapes while listening to the audio portion. In creating the transcripts, I captured communicative detail including overlapping speech, rises in pitch or volume and non-verbal communication (e.g., shrugs, eye contact, posture) (Duranti, 1997). I included non-standard spellings or non-standard words (e.g., "fittin," "nah") to capture students' use of vernacular "street" language.

While capturing the use of vernacular language was important to the analysis, this likely makes the transcripts somewhat less comprehensible to some readers. The transcripts were used to examine micro-level patterns in classroom discourse. By comparing transcripts from six reform activities and two RCM activities from the second and seventh weeks of the course, changes in classroom discourse over time could be documented. Students' discursive participation in different RCM and reform activities could be evaluated, compared and contrasted.

Transcripts of classroom discourse were broken into *topically related sets*, sequences of utterances that cohere around topics or themes (Mehan, 1979). Individual speaker turns were coded within topically related sets as *Initiations, Responses, or Feedback (IRF)*—a variation on the aforementioned IRE schematic (Cazden, 2001; Mehan, 1979; Pruyun, 1999). IRF coding enabled the examination of patterns in the structure of classroom discourse as well as who (i.e., teacher or students, which students) initiated new ideas and who evaluated them at different points in time and in different activities. It also facilitated the comparison of discourse patterns from the night course activities and rigid discourse patterns observed in traditional classrooms (Cazden, 2001).

An adaptation of Pruyun's (1999) framework for the analysis of classroom discourse was used to examine how students were positioned as subjects or objects (or unclear) in each topically related set and how they took up this positioning or positioned themselves in classroom discussions. *Subjectification* included my encouraging students to think for themselves about mathematical or social ideas and their positive response to this positioning. The category of *objectification* was used when I (the teacher) in some way indicated they were not capable of reasoning about a particular issue, shut down student ideas, or treated them as empty vessels that needed to be filled with official knowledge. To examine how students positioned themselves or took up their positioning in classroom discourse, student utterances and communicative behavior (e.g., putting their heads down, initiating a topic) were coded as exhibiting *engagement, resistance, or unclear*. Students exhibited *engagement* when they acted in ways that were on-task with instructional expectations (e.g., completed assigned problems) and actively participated in whole class or small group discourse. Students' mathematical contributions to classroom discourse were coded as *elaborate student engagement* when their transcribed utterances measured more than one line of text on the transcript page. This category was helpful in terms of measuring changes in student participation over time. *Resistance* included students' explicit refusal to comply with instructional or school expectations (e.g., talking on cell phones, not cooperating in group activities, acting out) and exhibiting more passive forms of disengagement (e.g., putting heads on desks, being slow to start in on assigned work). To be clear, in this analysis, engagement and resistance were considered with respect to the expectations of reform or RCM activities. However, depending on the context and one's perspective, student resistance might be considered an expression of subjectivity (e.g., when students resist what they perceive as objectifying or disempowering instruction), an issue that is revisited in the discussion of results.

Gee's (2005) distinction between *vernacular* and technical, or what is referred to here as *scholastic*, registers emerged as important for the analysis of discourse transcripts from the night school course. He illustrates how these constructs are operationalized with the following example:

[A] student studying hornworms might say in everyday language, a variety of language often referred to as "vernacular language," something like "hornworms sure vary a lot in how big they get," while the same student might use a more technical variety of language to say or write something like "hornworm growth exhibits a significant amount of a variation." The vernacular version is one social language and the technical version is another. (p. 20)

As the results indicate, students' use of vernacular language and access to socially valued scholastic and technical registers both have important implications for their subjectivity and empowerment. In terms of the analysis, when students switched out of using a scholastic (i.e., formal, technical, or academic) register of speech and spoke using a vernacular social language, I coded the topically related set accordingly.

2.3 Goals for reformist critical mathematics instruction and study limitations

This section presents an overview of my instructional goals. As I had attempted in my years of high school mathematics teaching prior to this study, one of my goals was to teach the required curriculum for conceptual understanding as well as procedural fluency. In constructing the course curriculum, I drew heavily on materials from the Interactive Mathematics Program, a problem-based curriculum designed to strike a balance between mathematical concepts and procedures and that aligned with the NCTM Standards (Fendel, Resek, Alper, & Fraser, 2000). Yet, my goals for student empowerment went further than helping students learn the socially valued curriculum with mathematical understanding. I was attracted to RCM as a means to counter the negative effects of traditional schooling including indoctrination into hegemonic worldviews and learned passivity and disengagement. My goals for RCM instruction were to raise my students' political consciousness as well as interest in and understanding of school mathematics, and, indirectly, to make a dent in the continuing opportunity and achievement gaps that exist between students from dominant and subordinated communities. I planned to facilitate the development of students' mathematical and political *subjectivity*; that is, their self-responsibility for learning, their confidence in mathematical problem solving, their social engagement, and constructive agency over the enacted curriculum.

As no RCM curriculum was available at the high school level, a major undertaking of my study was to design and field-test RCM curricular materials (Brantlinger, 2011a, 2013). For obvious professional and ethical reasons, I needed to align my instruction with the district-mandated geometry requirements. I used two geometry units from the Interactive Mathematics Program curriculum that met district standards and helped with the development of reformist mathematical power. Geometry activities from these reform units, which had no explicit political content, comprised approximately 85 % of the course and 7 RCM activities comprised the remaining 15 %. Reform activities lasted 1 h or less, although many built on previous lessons. The four RCM activities I taught in the first 4 weeks of the course also lasted an hour or less. In weeks 5–9 of the course, I implemented three RCM "projects" that each took 2 or 3 h to complete. While some incorporated geometry content (e.g., application of knowledge about area), all of the RCM activities focused on basic data analysis or descriptive statistics (Brantlinger, 2011b). Conveniently, at the time of my study, the Chicago Public School standards specified that about 10 % of the required geometry curriculum address basic data analysis topics. In Chicago, topics from basic data analysis, statistics, and probability, although not a priority, were irregularly squeezed into short segments of the required high school curriculum devoted mainly to topics from algebra and geometry.

I expected that students would see the RCM component of my curriculum as believable and engaging and hoped that it would be politically and mathematically realistic and challenging. I expected the total curriculum to provide socially valued mathematics knowledge. To be clear, the distinction between reform and RCM activities is somewhat artificial. For the purposes of this study, reform activities were those that came from the Interactive Mathematics Program curriculum. In contrast to RCM activities, reform activities developed few, if any, explicitly critical messages about the social world (Brantlinger, 2011b).

As I planned and taught the night course, and reflected on this activity daily, my perspectives on the nature and potential of RCM evolved (for detail, see Brantlinger, 2013). In particular, as I gained experience, I came to question my initial, tacit assumption that critical and mathematical goals were naturally, or could be made to be, mutually enhancing (see also, Skovsmose, 1985). This changed how I structured and implemented RCM activities as the night course progressed. Early RCM activities were designed to be completed within an hour and were structured so that mathematical and critical components were interwoven. Later RCM activities were longer projects comprised of separate, but potentially related, critical and mathematical tasks. My hope was that, in concluding these RCM projects, the students and I would synthesize the different critical and mathematical strands into a meaningful whole.

There were a number of limitations to this study. I note two here. First, I was unable to study RCM mathematics instruction for an entire school year. This meant that, prior to implementing RCM lessons, I was unable to build the kinds of relationships with students that I would have liked to build and hence was unable to co-construct RCM activities (see Brantlinger, 2013). A second major limitation was that, while I was an experienced mathematics teacher, I was inexperienced with critical pedagogy. With this in mind, the study results should be seen as suggestive rather than authoritative about classroom discourse in RCM lessons.

3 Presentation and discussion of results

The results are presented in three sections. The first presents general findings about classroom discourse in the reform and RCM activities over the time-span of the course. The second and third present analyses of discourse from RCM lessons from the second week and seventh week of the course respectively.

3.1 Patterns of discourse and student participation in reform and RCM activities

In early interviews and conversations, students indicated that they were not accustomed to the subjectifying expectations of reform mathematics; that is, to being asked to explain, explore, and reason for themselves. They expressed attachment to traditional models of instruction that expected them to learn and behave passively. They demanded mathematical answers from me, refused to work collaboratively, were reticent to share their thinking publicly, and complained about having to write extended explanations and justifications. As Table 1 indicates, this behavior dissipated as students gained familiarity with the expectations of reform mathematics. It shows that, over the timespan of the night course, students' engagement in reform activities improved and their resistance to them diminished, as did their calls for my mathematical assistance. After the first week of the course, it was rare for a student to do absolutely

Table 1 Overview of student participation in reform activities

	Topically related sets (TRS)	Student engagement in TRS	Elaborate engagement in TRS	Student resistance in TRS	Calls for teacher help in TRS
Week 2	443	262 (54.7 %)	18 (4.1 %)	113 (25.5 %)	142 (32.1 %)
Week 7	317	200 (63.2 %)	40 (12.6 %)	50 (15.8 %)	76 (17.2 %)

nothing mathematical during a reform activity from the Interactive Mathematics Program. However, in reform lessons, students exhibited a complex mix of stances from resistance (e.g., not immediately starting work), to moderate engagement (e.g., supplying short answers to mathematical prompts), to more elaborate engagement (e.g., calling me over to explain their mathematical thinking in detail).

Analyses of transcripts of whole class discussions of the 7 RCM activities showed that three (in Weeks 2, 7, & 8) ignited students' discursive engagement, three (in Weeks 1, 3, & 5) dissipated discursive participation, and one (in Week 4) quickly dissipated after some initial student interest (Table 2). Engaging RCM activities featured higher levels of *elaborate student engagement* with and lower levels of *resistance* to whole class discussions than those that dissipated participation. In such activities, there were periods of time when students responded to each other's ideas rather than only responding to my prompts.

The remainder of this paper focuses on classroom discourse from two engaging RCM activities, one from the second week and one from the seventh week of the course. Because of space limitations, and because I have focused on the flaws of the RCM approach I took elsewhere (see Brantlinger, 2010, 2011a, b, 2013), I chose not to include an in-depth consideration of the RCM activities in which engagement dissipated. However, there were common features to both the discursively engaging and other RCM activities (e.g., ongoing student resistance, disconnect between critical and mathematical conversations) and the data and results presented here either embody or touch on the general findings about RCM activities. Indeed, these excerpts were chosen because taken together they illustrate these general findings about RCM lessons.

3.2 Charting new critical mathematical territory in week two

In the second hour of the class on Monday of the second week, following a reform activity on the angle sums of various polygons, the class considered its second RCM activity, "Race and Recess" or "R&R." The chart used in the activity (Fig. 1) was obtained from a news article in the *Chicago Reporter* by Pardo (1999). It portrays the white student to student of color ratio at various schools and how these correlated with recess time received by students.

Students began R&R by working in groups attempting to make sense of the chart (Fig. 1). During the first 5 min, two small groups began statistical discussions whereas the other five groups asked clarifying questions and expressed their confusion. Moving to the front of the classroom, I insisted as I had when I launched the activity, that students "figure out" and "interpret" the R&R chart's statistics for themselves. I asked the class, "can anybody explain that [chart] besides me?," Osvaldo spoke for some students when he replied, "nah man." Shortly thereafter, Sonny vetted his statistically accurate idea that, "it's like, where there's white people there's recess." Osvaldo then loudly chimed in, "the white people ... have better jobs and stuff—they live in a better community!" This led to an impromptu whole class discussion that was dominated by students' ideas about social inequality despite my insistence that they explain the statistics of the R&R chart (Powell & Brantlinger, 2008).

Table 2 Overview of participation in RCM activities

RCM activity in week number:	1	2	3	4	5	7	8
Number of students who exhibit elaborate discursive engagement in whole class discussion of RCM activity	2	10	3	6	4	13	10

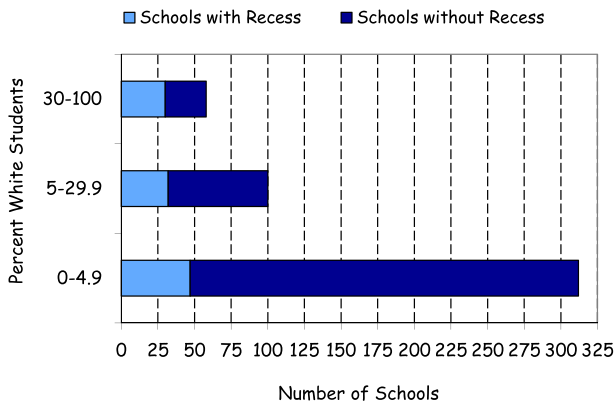


Fig. 1 Race & recess data from Pardo (1999)

During the next 15 min, students competed to initiate ideas and to respond to other students' ideas. They talked over each other in their eagerness to express their views discussing racism and school resource inequalities. In terms of micro-level patterns of discourse, there was a considerable amount of overlapping speech during this whole class discussion. While engagement varied, there was little overlapping speech in whole class conversations of the reform activities included in the discourse analysis. The R&R discourse also was more open to student contributions than that exhibited in tightly controlled traditional classroom discourse (Cazden, 2001; Mehan, 1979). As mentioned, this was a goal, as opening up critical and mathematical classroom discussions to student contributions is essential to positioning students subjectively (Cazden, 2001; Freire, 1971; NCTM, 1991; Pruyun, 1999).

There was evidence that my instruction *objectified* students just prior to the 15 min discussion cited above. In particular, I relied on a traditional IRF script to provide a sense of closure to the opening discussion about the statistical meaning of the R&R chart (Powell & Brantlinger, 2008). After stating, "I wanna make sure you guys are with me on this," I asked leading questions, "so which of these schools has more white kids?" and completed student responses to these questions. Given that I had positioned the students subjectively as "knowers," it was deleterious and contradictory to suddenly switch gears and objectify students by placing them in the position to need my expertise or the expertise of the few students who exhibited a solid statistical understanding of the R&R chart. While infrequent, the discourse analysis pointed to places where I made similar teacher moves. My occasional reliance on traditional IRF scripts during RCM instruction resonates with Andersson's (2011) observation that, rather than displacing them, non-traditional discourse scripts seem to be mixed together with traditional scripts during CM pedagogy in mainstream school settings.

Regarding the potential of RCM to energize certain students, Osvaldo and Lana exhibited newfound engagement when they helped to launch and maintain an impromptu whole class discussion about R&R with relatively elaborate initiations, responses, and evaluations. These two students tended to be slow to start in on reform activities and had not yet participated in prior whole class discussions of reform mathematics. The politicized contextualization of R&R seemed to wake up these and other students.

Students expressed ownership of the critical discussion of R&R and were animated and amused, although somewhat indignant about it (Excerpt 1). In addition to their expressed enthusiasm, a few students criticized the activity as "racist," turning the implicit evaluation of their general inability to interpret the statistics back onto the sociopolitical content of R&R (lines

23 & 24). While they seemed to be having fun, this evaluation was an important display of student subjectivity. My decision to end the whole class conversation a few minutes after Excerpt 1 took place seemed to bother the ten students who had been actively engaged in the R&R discussion as well as several onlookers. These students protested this decision with a chorus of “no’s!” Earlier Kampton expressed his engagement when he asked, “can we have a discussion about this?” (line 34).

Excerpt 1: Racialized Classroom Discourse

1 Sonny: Where there’s white people there’s recess
 2 Me: Is it telling you where there’s white people there’s recess? Is that what that’s
 3 telling you?
 4 Osvaldo: No
 5 Me: That the school is mostly black is that what it’s telling you?
 6 Boy: No
 7 Dino: Hell nah!
 8 Princess: That the school is mostly black so they don’t have recess! Black kids
 9 can’t go outside!
 10 Boy: I think it’s...
 11 Amalia, Princess, Sonny and several other students laugh.
 12 Dino: They cause too much damn trouble! That’s why they can’t have recess!
 13 Me (meaning Latinos): It’s not just black kids at these schools
 14 Princess: Well white people too (implying that white youth cause trouble too)
 15 Lana: We supposed to be playin’ in the (inaudible) – we all ...
 16 Kampton (to Princess): They (i.e., privileged suburban white students apparently)
 17 be blowin’ up shit and
 18 Princess: Right! They be experimenting with the
 19 Lucee laughs louder than the non-bolded speech presented here.
 20 Me: Is that what this chart is telling you?
 21 Princess: It’s a racial
 22 Osvaldo: I know!
 23 Princess: It’s a racist
 24 Osvaldo: It’s a racial-ass chart man
 25 Kampton: No offense Mister B
 26 Princess: Bar graph!
 27 Kampton: It’s true
 28 I smile.
 29 Osvaldo (laughs): It’s! It’s! You should just take it off before...
 30 Princess (to someone in front): They’re saying (inaudible) ...
 31 Dino: Mister B! Mister B! Mister B! Can I say (inaudible)?
 32 Princess: White people be goin’ outside
 33 Me: Okay, hold on one sec
 34 Kampton (to me): Can we have a discussion about this Mister B?
 35 Princess: ... outside! And who are non-white can’t go outside!
 36 Me: Okay let’s, okay, Princess hold on one sec
 37 Princess: The minorities!
 38 Lucee and Amalia laugh out loud, apparently in response to Princess’ statement,
 39 volume, or intonation. Several other students laugh and smile.

Students’ use of vernacular social language during R&R also indicated a level of comfort during this RCM activity that they generally did not exhibit in other early RCM and reform activities. Princess switched codes between scholastic and vernacular registers. She began with a mathematical explanation of the chart using a scholastic register that I, the white teacher, might use (lines 8, 9,14). She then switched to a vernacular language (line 18), one shared by

many of her peers, in order to ratify Kampton's statement about dangerous suburban white students (lines 16 & 17). In other words, when Princess directed a mathematical interpretation at me she used a scholastic register and when she directed a sociopolitical comment at her peers, she used a vernacular register. Dino, Kampton, and Osvaldo switched between vernacular and scholastic languages in a similar manner. Dino and Kampton used vernacular social language when they made their grounded statements (lines 7, 12, 16–17). However, when these and other students addressed me (lines 1, 27, 29, 34), they generally used scholastic language. Osvaldo used a scholastic social language to explain his thinking to me; however, in Excerpt 1 he told me, "it's a racial-ass chart man" (line 24), apparently to evaluate the activity and to affiliate with his classmates. Osvaldo then switched back into the social language of school when he told me in a lowered pitch, "you should just take it [i.e., the chart] off [the overhead]" (line 29). Students' use of vernacular social language was further evidence of their ownership of the critical discussion of R&R. This code switching illustrates how they used discourse to affiliate with each other and distinguish themselves from schooling or teachers. I was, after all, the institutional authority despite my engaging them in a transgressive activity that challenged prevailing norms and beliefs.

Student resistance and disengagement lived alongside student engagement during the R&R activity as it did in other RCM activities. At various points in the R&R lesson, heads went down on desks, including those of some students who appeared to be following the conversation thread in silence and those of students who did not seem to be following the conversation. Only about one third of the class actively contributed to the whole class discussion. Some of those who did not seemed frustrated or confused. For instance, towards the end of the lesson, Efrain stated that I should "just give [students] the numbers." He also complained that RCM was "not what we're here for." Lucee added, "it's goofy." At this moment and others, these and other students expressed clear resistance to RCM, indicating that such activities as R&R were neither appropriate nor worthwhile. Following Lucee's negative evaluation of R&R, Amalia defended it, stating, "it's not goofy, it's just—I dunno—it's confusing." Amalia seemed to speak for a second group of students who appeared initially more open to RCM.

While other RCM activities implemented in the first month of the course failed to feature sustained student-driven conversations, some students turned in interesting written responses, which pointed to a certain level of engagement with critical social ideas. In side conversations, a few students expressed to me that they were quiet because they felt hesitant about stating their views on social reality in front of their peers. Despite this, passive student resistance dominated early RCM activities. Active resistance also repeatedly surfaced, as such students as Efrain and Lucee continued to voice complaints about the inappropriateness of RCM lessons.

3.3 Critical spaces and discussion of economic inequality in week seven

The Inequalities and Area (I&A) Project began in the second hour of the first day of the seventh week, following a reform activity on similar polygons. It began with students writing individual responses to the prompts referenced in Fig. 2. Following that, I sorted students into five quintiles representing different income-brackets and gave each group the portion of 50 small candy bars that corresponded to that quintile group's average annual earnings. We ended the first hour with a whole class discussion about the fairness of this distribution. This section touches on discourse from these components of the first hour of the I&A project. In the second and third hours of the I&A project students used their understanding of area concepts to compute the Gini coefficient, a measure of economic fairness, from graphs of the distributions

1. Do you think the U. S. economic system is fair to its citizens? Why or why not?
2. Has the distribution of income in the U. S become fairer since the Civil Rights Movement?

Fig. 2 Abbreviated versions of first day questions from I&A project

of income and wealth for the U.S. and other countries at different points in time (Williams & Joseph, 1993).

Most students initially were hesitant to respond to the I&A prompts, neither writing a response nor discussing them with their group-mates. Their resistance took the form of simply not writing (e.g., several students sat and stared towards the blackboard), claiming excuses (e.g., “I lost my pencil”), and asking for further clarification (e.g., “can you tell me what this is asking?”) even though the directions seemed clear to me as the teacher. After I circulated the classroom and invoked my institutional authority in interactions with small groups, most students began writing responses (which I later collected). To be clear, such passive class-wide resistance occurred at the outset of all RCM activities.

Although some of the students who exhibited initial resistance to I&A were often slow to start in on course activities, several students who were generally quick to engage constructively with reform activities exhibited initial resistance to this RCM activity. For instance, rather than respond to the I&A writing prompts, Stephie and Robi, two of the higher performing students during reform activities, continued an off-task conversation they had started during break. As I moved to their area of the room, Stephie asked me, “So, you just want a like...” I responded by curtly stating, “I want an opinion.” Following that, Robi and Stephie quickly began writing individual responses. Stephie wrote the following response to the first I&A prompt:

I think that teachers are underpaid. Teachers help us with our education. Teachers have to put up with a lot of things. People who get overpaid are basketball, baseball, and football players. Lawyers are overpaid too! I think we should waste less money on basketball, baseball, and football players and waste more money on teachers. They can also fix up the schools and buy better books. Schools are more important than sports players! (January 13, 2004)

While the comment “we should ... waste more money on teachers” was a pointed way to phrase it, this response appeared accommodating to teachers or perhaps their institutional authority. Robi wrote something similarly flattering about teachers.

In contrast to these RCM malingerers, several students who frequently resisted reform activities launched into the I&A activity without any prodding from me. Kampton was one such student. He had not finished the reform activity introduced in the first hour and often exhibited disengagement in reform activities, yet he finished writing a response to the first I&A prompt before most of his neighbors began to write theirs. Considering his participation over the timespan of the course, Kampton was one of four students who engaged more fully with RCM than reform activities. About 10 min into the lesson, he waved me over to have me read his first response which read, “I would have to say yes & no. Because the U. S. economic system sucks. I believe every one should be paid equally. Because regardless of how much you make the Federal Government takes out the 15 % amount of taxes so either way it goes, you working for less.”

While in the minority, Kampton was not alone in demonstrating engagement. On the opposite side of the classroom, Lupe, Amalia, and Eddie seemed enthusiastic about the chance to discuss the I&A prompts. They quickly began a conversation that was sparked by Lupe's observation that (Mexican) immigrants were not referenced in I&A writing prompts. They noticed how my use of the word "citizen" in the first writing prompt excluded immigrants from the discussion of economic fairness. Lupe explained to me that, her group mate Eddie (of Puerto Rican descent) had claimed that, "Mexicans are taking up all of [jobs]." When I responded, "that's something we won't quite ... be able to get to with our mathematics," Lupe cut me off to finish reporting her response to Eddie, "and I was saying that that's not true, it's just that U. S. citizens are lazy!" In challenging the I&A assignment and cutting me off, Lupe indicated a degree of subjectivity or ownership over the enacted curriculum. Moments earlier, Amalia made this ownership explicit when she told me, "we're having a discussion and you're not included!" Although their tone was joking and friendly, and although both engaged well with reform activities, Lupe and Amalia asserted a level of *subjectivity* or classroom authority in this critical discussion that they did not exhibit in reform activities included in the discourse analysis.

It should be noted that their fourth group member, Juan, did not say anything (as picked up by a nearby microphone) in this initial discussion of economic inequality. Instead of responding to the I&A prompts, Juan wrote a note to me about his frustration with RCM activities not meeting his academic needs. It began, "I don't think you should teach these because we're wasting time studying things that it doesn't belong in this class. Instead of doing these you should teach us math equations that we have never studied." Based on how this group reacted, it would seem that, to varying degrees, some Guevara students sometimes experienced RCM instruction as *subjectifying* while others never seemed to experience it this way.

During the next 10 min, these and other students slowly completed their written responses to the I&A prompts. The majority seemed either reluctant to or unsure how to write responses to these rather open-ended prompts. As a whole, their written responses were shorter and less substantive than I would have liked. Several students only wrote a sentence for each prompt. Others only wrote a brief response to the first prompt.

After most students indicated that they had completed their written responses, I transitioned to the second component of the I&A lesson. In this component, I sorted students into five quintile groups, and distributed candy to these groups in the uneven way that modeled the 2001 U.S. income distribution. Students began to react by expressing excitement and disdain. However, it was not simply the political orientation that seemed to draw students into the distribution simulation, this simulation also was amusing. Kampton's comment "you broke bastards!" to groups of students with less candy than his group indicated enthusiasm (but perhaps also a chance to poke fun at his peers). However, the evidence was that their apparent interest in having a whole class conversation about economic inequality went deeper than simply being given candy. The unfairness represented in the unequal distribution of candy provoked animated reactions from many. Eddie, for instance, grinned and made several statements about bringing "Fidel Castro" and "communism" to the U.S. to remedy the situation.

As in R&R, students' overlapping speech and use of a vernacular language indicated ownership of the I&A discussion. In terms of the latter, Eddie began by telling his group mates, "nah! he's fittin to" and then, perhaps realizing I was listening, modified his language, switched to the more scholastic, "going to give me a piece of crumb!" Lupe quietly added, "[just] the fucking wrappers." Osvaldo attempted to quiet his classmates with, "cállate la boca, cabrón" (shut up, bastard) which also was an interesting example of code switching

that occurred. Student behaviors and comments signaled that RCM activities were in a different disciplinary register than reform and traditional mathematics lessons.

Students switched from vernacular back to scholastic language just before the discussion reported in Excerpt 2 began. I attribute this to the fact that they were directing their comments through me at this point in the discussion whereas they had previously been directing comments at each other. While many continued to actively contribute, there was a sense in which the I&A discussion had become school again and that signaled they should switch to a scholastic register. The exception occurred when Lucee (jokingly) lashed out at Efrain, telling him he was “fucked up,” in response to his (hegemonic) statement that “its just their way of life” that keeps poor people down. Apparently annoyed at Efrain’s not so subtle jab, Lucee used a non-scholastic register to put Efrain in his place. This apparently was more effective in this regard than anything she could have said in a scholastic register.

Excerpt 2: Critical Student Engagement in the I&A Project

1 Osvaldo (sits up in his chair, grins): I think we all should just get paid the
 2 same thing
 3 Kampton: Yeah!
 4 Jayla: But then we (inaudible)
 5 Osvaldo: You know why? Not...
 6 Eddie smiles and again mutters something about bringing “communists” and
 7 “Fidel Castro” to the U. S.
 8 Osvaldo: Not paid the same, but the income you know?
 9 Lucee: Okay Mister B, my turn, I’ll go
 10 Me: Okay
 11 Lucee: Are you ready?
 12 Me: Yeah
 13 Lucee: I think that its not fair because that if we they give us like okay cause
 14 some people don’t have higher educations than other people because most
 15 people they simply just don’t have enough money and they have either a large
 16 family or a real small family that they gotta help out either you got someone at
 17 home that can’t work or whatever or there’s issues (inaudible) whatever and
 18 you gotta work so you can’t go to school
 19 Me: Yeah
 20 Lucee: So all that stuff but if someone gives like someone else like the
 21 opportunity and they develop the skills they can just be as smart as anybody
 22 else who went to school they just didn’t have all the time to do all that stuff
 23 that they did
 24 Me: Yeah
 25 Lucee (scrunches body and face up and looks at desk): Yeah
 26 Me: So if you have less money then you gotta spend more time working and
 27 then you can’t go to school and stuff like that
 28 Lucee: Yeah
 29 Stephie raises hand in back of room.
 30 Me: Okay go ahead Stephie
 31 Stephie: Okay I don’t think that (she points to Lucee) like she was saying that
 32 if you don’t go to school you can’t work because like I’m going to use myself
 33 as an example like I work and I go to school and even though I don’t have my
 34 high school diploma I moved up little by little and I became manager so it’s
 35 not that you just gotta push yourself forward and you’ll do it
 36 Me: I think both you guys agree it took that idea that you have to work harder
 37 maybe than people...
 38 Stephie: It’s not that hard – I don’t think it’s that much harder
 39 Kampton: But for a person with strong willpower that person...
 40 Efrain: I believe that everything you get everything you want you need to work

41 hard for it!
 42 Robi (has hand raised): Yeah!
 45 Kampton: Or kiss a lot of ass
 46 Efrain: Yep
 47 Me (to Efrain): Next huh ah I mean I'll be honest well I'll talk I'll take that up
 48 another time remember you said that
 49 Lupe: What comes easy goes easy
 50 Robi: Mister B I think in a way it is fair that like rich people get more because
 51 if you went that extra step to be like a higher education or something
 52 Princess: But some people get it from their parents!
 53 Shannon: Right!
 54 Robi: You deserve more than somebody who didn't take that extra step or use
 55 it
 56 Princess: Okay but some people inherit!
 57 Shannon: If you're born rich you...
 58 Me: Yeah did you take I mean so if you're born to be rich did you take an
 59 extra step?
 60 Amalia: you are going to stay rich!
 61 Robi: but if you're already born to then what's the point of working hard any
 62 more?
 63 A number of students talk over each other at this point.
 64 Lucee: If any – well you know what he's talking about if you took that extra
 65 step, there's people who wanna take that extra step ...
 66 Shannon: right!
 67 Lucee: ... but they don't really have the opportunity - they can't. It's not really
 68 their decision. They have to go ...
 69 Efrain: Too bad for them it's really their way of life
 70 Lucee (turns towards Efrain): You just fucked up saying that
 71 Lucee then covers her mouth, smiles, and turns to face me again.
 72 Many students laugh and Malik raises his hand in back of classroom.
 73 Me (to Lucee): Nah I - I mean - I definitely hear what you're saying. I mean
 74 besides the um f-word there, the rest of what you're saying
 75 Malik shakes his head and raises his hand.
 76 Me: You don't agree with that Malik?
 77 Malik: No (pause)
 78 Me: That's okay - you don't have to
 79 Lucee: Cause I could go I would've taken those steps but they're there's you
 80 know there's things that are holding me back right now

The dialogue in Excerpt 2 was a 3-min slice from a 10-min whole class discussion that followed the quintiles distribution activity. Structurally speaking, the patterns of discourse and student participation in it were quite different from the patterns found in whole class discussions of reform mathematics—in which student contributions tended to be shorter and they tended not to take up or evaluate the mathematical ideas of their peers. As such, Excerpt 2 points to the promise of critical activities in opening up a discursive space for students to express their ideas about social reality and react to those of their peers.

When compared with other lesson transcripts, the lesson transcript from the first hour of I&A also demonstrates a shift in the way some students positioned themselves and participated in RCM activities over the time-span of the course. Lucee and others who regularly resisted fully participating in reform activities and earlier RCM activities, exhibited considerable engagement in this and a second RCM discussion that also occurred in the last month of the night course. This group of students participated voluntarily and their contributions were far more elaborate than in prior whole class discussions of RCM and reform mathematics. Recall that Lucee called the critical R&R lesson “goofy” in the second week, whereas she contributed constructively to the whole class discussion about the I&A prompts.

The discourse presented in Excerpt 2 was closer to the ideal than the norm. While one other RCM project implemented in Week 8 did feature moments of elaborate student engagement in whole class discussions, this engagement was not nearly as sustained nor student-driven as it was in the I&A discussion. The other RCM project implemented in the latter part of the course failed to ignite elaborate discursive engagement amongst students. In addition, while students' participation in later RCM activities was somewhat improved, passive resistance to RCM activities was ever present and weighed on my instruction. More active resistance also surfaced intermittently. Taken together, this variability meant that student participation in the RCM activities continued to be less predictable than it was in reform activities.

4 Considering the impact of RCM pedagogy

The discourse analysis presented here presents mixed results for the promise of RCM pedagogy to engage, empower, and subjectify high school students, particularly those from historically marginalized communities. While the analyses of discourse transcripts reveal a number of imperfections in implemented RCM activities, these transcripts and excerpts from them point to several potentially positive results for RCM. In particular, the two activities and associated excerpts illustrate the enthusiastic reactions that many students had to discussing the social components of some RCM lessons. In these lessons, students competed to talk and engaged in lively discussions among themselves and with me. The discursively engaging RCM lessons shifted who participated and how and, to some extent, equalized overall student participation rates in the class. Issues of racism in schools and economic fairness in society resonated with several previously disengaged students in ways that reform activities rarely, if ever, resonated.

Critical whole class discussions of social and economic inequality seemed to be linked with the development of classroom community. While difficult to demonstrate, such discussions seemed to bridge some of the social distance between my low-income students of color and me, their white teacher. My relationships with many of the students certainly improved over the timespan of the course. Seven students began coming early to class or staying after school to talk about their lives and occasionally social issues raised in previous RCM lessons. These and other students often included me in unofficial conversations that were again both political and personal.

However, even in the discursively engaging RCM activities, there was pervasive and persistent student resistance that lived alongside the active participation of other students. The discursive participation rates of students who had been integrally engaged in reform mathematics generally decreased in RCM activities. There are a number of possible explanations for this. The fact that I constructed the RCM component of the curriculum with little direct input from students certainly is a possibility. The reality that I did not meet most of the night course students until the course began coupled time-intensive nature of RCM curriculum development made the co-construction of the course curriculum difficult if not impossible. That said, the lack of a co-constructed curriculum fails to explain some of the resistance to RCM that students expressed. To varying degrees, several vocal students were clear that they wanted access to the socially valued mathematics curriculum and that they resented the inclusion of sociopolitical issues in the curriculum. They pointed to the gatekeeper role of secondary mathematics and their perception that RCM instruction was a distraction from their academic aspirations.

I would submit that the gatekeeper function of school mathematics is obscured by current RCM and other reformist discourses about the utility and transformative power of mathematics in the "real world" (Dowling, 1998; Lundin, 2012). The salvation discourses of RCM pedagogy similarly mask and hence legitimate the current economic organization of schooling,

with mathematics as a focal point, in which only some students can benefit. As Pais and Valero (2012) observe, “[p]ositing mathematics as a ‘weapon in the struggle’ for a better world (Gutstein, 2012) reinforces even more the ‘faith’ (Lundin, 2012) in the idea that better mathematics is the solution for problems that by their very nature are economical and political” (p. 19).

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