Modelling Culturally Responsive Pedagogy: Studying a Mathematics Teacher Educator's Practice

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Abstract

In acknowledging the culture of mathematics, of mathematics classrooms and of students' lives and communities, the research described in this paper presents a mathematics teacher educator (MTE) self-study conducted during the teaching of a course on culturally responsive pedagogy (CRP) in the mathematics classroom. A literature review on teacher educator modeling serves as a foundation for the study described in this paper where prospective and practicing teachers (PPTs') were asked to reflect on how/if I modeled CRP in my role as the course instructor. Beginning from the premise that MTEs must develop their own CRP as an essential step toward working with PPTs to develop theirs, this study set out to explore if the course was not only about CRP (the content of the course) but that it was also taught through CRP. The paper shares the tensions and struggles involved in being/becoming a culturally responsive MTE.

Keywords: Culturally Responsive Pedagogy; Mathematics Teacher Educator; Self-Study; Pedagogical Modeling

Introduction

As the cultural and language diversity of school classrooms increases, questions of how or if mathematics and mathematics education can contribute to a more socially-just and equity-focused classroom are surfacing more and more in the research. A study by Andersson et al. (2021) acknowledges that "language and culture appear to be keys to learning and knowing mathematics" (p. 126); yet, at the same time, these researchers discuss storylines in news media that continue to label mathematics as "language- and culture-free" (p. 126). Persistence of this dominant, a-cultural view of mathematics means that "[m]eaningful integration of culturally based knowledge into school mathematics inevitably creates a strong tension" (Mukhopadhyay & Roth, 2012, p. 5). Some would argue that the tension is rooted in subtle signs of power and privilege within dominant mathematical traditions, manifested in the form of "neglecting students" cultural and intuitive mathematics knowledge; granting mathematical authority to only the teacher, the textbook, or a few outstanding students; leaving unchallenged current constructions of what it means to do and learn

mathematics" (Willey & Drake, 2013, p. 62). As a result, Willey and Drake (2013) urge mathematics teacher educators "to sharpen [their] sociopolitical lenses in order to notice and disrupt manifestations of privilege and oppression in mathematics education" (p. 68). In other words, mathematics teacher educators (MTEs) are called to notice and disrupt the unjust relations and functions of schooling and school mathematics.

In acknowledging the culture of mathematics, of mathematics classrooms and of students' lives and communities, the research I describe in this paper reflects my own teacher educator self-study conducted during the teaching of a course on culturally responsive pedagogy in the mathematics classroom. The course, taken by K-12 teachers (prospective and practicing), aims to deepen understandings of mathematics while developing a critical cultural consciousness. For K-12 mathematics classrooms to become more culturally responsive spaces, attention must be given to helping prospective and practicing teachers (PPTs) develop their practices as culturally responsive educators. To do this, however, MTEs must grow and develop their own culturally responsive practices (Nolan & Keazer, 2021a) so that they might be better able to model these practices in their teacher education courses with PPTs. The research described in this paper begins from the premise that MTEs must develop their *own* CRP as an essential step toward working with PPTs to develop theirs. Hence, this paper sets out to describe how I sought to better understand, from my PPT students, how or if I modeled culturally responsive pedagogy (CRP) while I was teaching a course on CRP. In other words, I was interested in exploring if the course was not only *about* CRP (the content of the course) but also taught *through* CRP.

I begin with theoretical considerations for the paper, followed by a review of the literature focused on teacher educator modeling (in general, of CRP and finally MTE modeling of CRP), and then move into a description of the context for the research study (the course on CRP), including a brief overview of the larger project to illustrate the selected self-study aspect of the research.

Through analysis of the data from that self-study aspect of the study, I present several themes in the

data with respect to how my students perceived me to model CRP. I then offer a few critical Journal of Mathematics and Culture 216

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reflections on these themes in light of the ideas offered in the literature review. Finally, I close with ideas motivating me to move forward with a richer, more nuanced way for growing and modeling my own practice as a culturally responsive MTE.

Theoretical Considerations

To establish the theoretical grounding for this study, it is important to note that the underlying conceptualization for CRP, in the design of both the course and the research, is based on Ladson-Billings' (1995a) definition of CRP as "a theoretical model that not only addresses student achievement but also helps students to accept and affirm their cultural identity while developing critical perspectives that challenge inequities that schools (and other institutions) perpetuate" (p. 469). Expanding upon this definition and focusing in on the context of mathematics education, I offer a very specific conceptualization of CRP as a pedagogical domain that is shaped by many intersecting fields of research, namely ethnomathematics [EM], critical mathematics [CM], Indigenous education [IE], social justice [SJ], language diversity [LD], and equity-based [E-b] research (Nolan, 2020). In related research, I focus my efforts on disrupting and reframing school mathematics by synthesizing the theories and philosophies of EM, CM, IE, LD, and E-b as a collective to conceptualize CRP as a disruptive pedagogy (CRdP); that is, a pedagogy that "requires students to challenge or change their epistemologies and participation in their learning" (Anderson & Justice, 2015, p. 400), The research that is described in this paper is motivated by similar pedagogical struggles and concerns to disrupt and reframe, only the lens is focused specifically on my own pedagogical practices as I seek to be/become a culturally responsive mathematics teacher educator.

Literature Review

Research on teacher educator modeling is considered important to the improvement of teacher education programs. A key premise underpinning the theory of modeling is that MTEs should teach through, not merely about, the pedagogical approaches that they expect PPTs to use in K-12

classrooms. The importance of modeling can be summed up by noting that "[t]he complexity of the Journal of Mathematics and Culture

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teacher educator's role as a model is that every time they teach 'something' (a theory, a content, or a pedagogical strategy), modeling takes place at all times, either intentionally or unintentionally" (Montenegro, 2020, p. 2). Fifteen years ago, Lunenberg et al (2007) wrote, "at present one must have serious doubts about the competence of teacher educators to serve as role models in promoting new visions of learning" (p. 586). Others have suggested that teacher educators are not clear or

consistent in what conceptions of teaching are most important to be modeled in teacher education (Montenegro, 2020; Timmerman, 2009). However, just as K-12 teachers cannot teach in ways that

they themselves did not experience as learners (Nolan, 2014), teacher educators are also challenged

to model pedagogies that they have not experienced as learners. For MTEs, this idea applies to

topics of reform and inquiry-based pedagogies as well as other critical projects such as culturally

responsive pedagogies (CRP). In fact, some research has even suggested that novice teachers blame

their teacher education programs, and the lack of modeling by mathematics teacher educators, for

why they do not implement more innovative and less traditional pedagogies in their mathematics

classrooms (Nolan, 2014; Nolan & Bjerke, 2021).

In this review, I discuss the research literature on teacher educator modelling—first, modeling in general and then modeling of CRP—before discussing research specifically focused on mathematics teacher educator modeling of CRP.

Teacher Educator Modeling

There is a strong orientation in teacher education research toward studies to better understand

and communicate the practices of teacher educators (Davey, 2013; Goodwin, et al., 2014),

including a deliberate focus on teacher educator modeling (Aleccia, 2011; D'Souza, 2017; Moore &

Bell, 2019). In one such study, Aleccia (2011) outlines four criteria for teacher educators to meet in

order to 'walk the talk' with prospective teachers, including being clear about their professional

mission, having the necessary background and preparation, being capable of bridging theory and

practice, and, finally, modeling what it looks like to be an accomplished classroom teacher through

their own pedagogical approaches, course design, and collaborative and reflective practices. Thus, Journal of Mathematics and Culture

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research literature on the role of teacher educators in making an impact through their own modeling of exemplary practices is gaining visibility. Even though teacher educator modeling research dates back more than twenty years in some cases (Hockly, 2000; Loughran & Berry, 2005; Lunenberg et al, 2007), the focus of that early body of research tends to be more on technical-rational concerns within teacher education, rather than on teacher educator pedagogies that promote an agenda grounded in equity, social justice, and culturally responsive aims. To promote such an agenda, teacher educators are called upon to model pedagogies that are disruptive (Mills, 1997); that is, pedagogies which "challenge inequities and social injustice" (p. 39) and, at the same time, "promote change in the existing relations of power within schools" (p. 39).

Teacher Educator Modeling of CRP

Research explicitly focused on teacher educator modeling of CRP, and related critical and social justice-oriented practices, while less plentiful, does exist (Acquah & Szelei, 2020; Gist, 2014; Gist et al, 2019). For the sake of space, I introduce only five such research texts here, and refer to them in the data analysis section and for considering next steps in the research. From Bergeron (2008), the importance of teacher educators "providing instructional and experiential modeling of culturally responsive practices" (p. 4) is highlighted; this modeling "includes the acceptance of our own students' linguistic and cultural differences, the willingness to learn who our students are as individuals, and the ability to model a respectful learning environment" (p. 26).

Several additional studies seek to provide a portrait of what a culturally responsive teacher educator looks like and/or does. For instance, Villegas and Lucas (2002) propose "six salient characteristics [that] define the culturally responsive teacher" which, they argue, "must be consciously and systematically woven throughout the learning experiences of prospective teachers in their coursework and fieldwork" (p. 21):

Such a teacher (a) is socioculturally conscious, that is, recognizes that there are multiple ways of perceiving reality and that these ways are influenced by one's location in the social order; (b) has affirming views of students from diverse backgrounds, seeing resources for learning in all students rather than viewing differences as problems to be overcome; (c) sees

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himself or herself as both responsible for and capable of bringing about educational change that will make schools more responsive to all students; (d) understands how learners construct knowledge and is capable of promoting learners' knowledge construction; (e) knows about the lives of his or her students; and (f) uses his or her knowledge about students' lives to design instruction that builds on what they already know while stretching them beyond the familiar. (p. 21)

Gist (2014) contributes to an understanding of the traits or characteristics of a culturally responsive teacher educator through her research on "developing a conceptual vision for culturally responsive pedagogy that helped to identify the skills, knowledge, and dispositions that should undergird courses and fieldwork attempting to prepare culturally responsive teachers" (p. 266). Her "findings suggest that the culturally responsive teacher educator chooses to commit, challenges sociocultural barrier[s] to teacher learning, and utilizes constructivist approaches in teaching" (p. 279). A few years later, expanding on these initial ideas, along with including the ideas of several others, Gist et al. (2019) offer "four key principles for advancing a comprehensive vision of culturally responsive pedagogy in teacher education," listed as: Preservice teachers' critical openness and reflection; administrator and faculty culturally responsive commitments; culturally responsive clinical experience; and culturally responsive curriculum and instruction (pp. 17-18).

Another valuable perspective, though emerging from research in K-12 rather than a teacher education context, is provided by Rychly and Graves (2012) who summarize:

... four teacher practices that are essential if teachers are going to effectively design and implement culturally responsive pedagogy. These four practices are: (1) that teachers are empathetic and caring, (2) that they are reflective about their beliefs about people from other cultures, (3) that they are reflective about their own cultural frames of reference, and (4) that they are knowledgeable about other cultures. (p. 45)

Mathematics Teacher Educator Modeling of CRP

Research focusing on teacher educator modeling of CRP in the context of mathematics teacher education is far less plentiful than the other two categories reviewed. In 2021, my colleague and I conducted an extensive literature review (Nolan & Keazer, 2021b) which set out to identify, synthesize, and analyze key scholarly texts in the field of teacher educator CRP. Our goal was to determine how scholars define CRP as well as how (or if) they elaborate on their definition through

Journal of Mathematics and Culture June 2023 17(4) ISSN-1558-5336 MIM Conference 2022 the naming of components or characteristics that can be used by teacher educators to 'measure' or reflect on the CRP of their pedagogies; in other words, the review sought to better understand what CRP means and what it looks like in practice/classrooms. That literature review not only identified a dearth of studies specifically focused on MTE practice, but it pointed to the absence of an explicit critical lens for examining the CRP practices of teacher educators. As Ladson-Billings (2014) states: "Even when people have demonstrated a more expansive knowledge of culture, few have taken up the sociopolitical dimensions of the work, instead dulling its critical edge or omitting it all together" (p. 77). The review encouraged us to build on the existing literature, sharpen our sociopolitical/critical edge, and develop a self-study framework for supporting MTEs in growing their own culturally responsive practices (Keazer & Nolan, in press).

The self-study framework illustrates the intersections of CRP theory and MTE practice, where the conceptualization of four components of MTE practices (mathematical and curricular knowledge; pedagogical knowledge and modeling; research/theory/scholarship; and critical reflection/praxis) and three dimensions of CRP (access and achievement; cultural competence/identity; and sociopolitical/power) together create specific areas of MTE growth to focus on. The framework is a 2-layer portrayal of "the interaction/intersection of each dimension of CRP theory with components of MTE practice [to generate] a series of reflective questions and corresponding reflective prompts." For example, if an MTE is interested in focusing on studying her pedagogical knowledge and modeling as it intersects with the CRP dimension of cultural competence/identity then the key question for reflection at that point of intersection in the framework would be: "To what extent do my pedagogical practices draw on my students' mathematical discourse and funds of knowledge?", with possible reflective prompts being: "I elicit and incorporate the diverse voices of my students into the co-constructed curriculum by..." or "I encourage PTs to be collaborative and responsible for each other's learning through..."

In this paper, only this framework contributes to reflection on the data for the study, to

illustrate its potential for use in growing one's own practice as a culturally responsive MTE.

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Research Study and Methods

This paper describes one aspect of a research study that I conducted while teaching a course entitled Culturally Responsive Pedagogy (CRP) in the Mathematics Classroom, offered in the University of Regina teacher education program. This course in CRP is offered as part of a Teaching Elementary School Mathematics (TESM) certificate program, in which practicing and prospective teachers (PPTs) enroll. A key aim of the course is to challenge and disrupt dominant views of teaching, learning, and knowing mathematics, with overarching goals of deepening understanding of mathematics concepts while developing a critical cultural consciousness. The course focused on developing students' (PPTs') capacities for interpreting the social, cultural and political challenges of teaching mathematics in/through CRP. As noted above, in the course design, CRP was introduced/taught through the lenses of many intersecting fields of research that can be seen to shape CRP: ethnomathematics [EM], critical mathematics [CM], Indigenous education [IE], social justice [SJ], language diversity [LD], and equity-based [E-b] research. In other words, I wanted to introduce CRP as the umbrella term (since that was the name of the course) and then demonstrate how research in each of these areas (or sub-fields as I called them) could shape and inform one's developing CRP. Assignments in the course included placing students into small groups to read a selection of research literature and then provide seminars on these readings for their colleagues in the course, all the while keeping a reflective journal about how their ideas and beliefs about CRP were developing/changing as the semester progressed.

The larger research study conducted while teaching this course aimed to explore PPTs' understandings of CRP at various points throughout the one-semester course. Data were collected before the course began (pre-course surveys), during the course (daily reflective journals) and after the course (post-course interviews). Over three offerings of the course (2017, 2019, 2021), 38 individuals took the course, of which 31 consented to participate in the study (referred to in this paper as P1 – P31). Post-course interviews were included as part of the research protocol only in the

Journal of Mathematics and Culture June 2023 17(4) ISSN-1558-5336 2019 and 2021 offerings, and nine participants in total volunteered to be interviewed. The 31

participants (hereafter referred to as PPTs) were primarily practicing teachers, with only two

undergraduate prospective teachers. Given my positionality as the instructor for the course, ethical

concerns (such as conflict of interest and power differential) were addressed through the use of

signed consent forms which I was not privy to until after the course was complete and grades

submitted.

Given the study's primary focus on PPTs, most of the data collected were concerned with

how PPTs were developing and growing in their knowledge of CRP, and some initial findings of

that research are reported elsewhere (Nolan & Graham, 2020; Nolan & Xenofontos, under review).

However, in general, these forms of data for the study (pre-course surveys, reflective journals and

post-course interviews) also served to provide me, the instructor, with feedback on the design,

content and pedagogy of the course; in other words, I used the data in my efforts to conduct self-

study research on the course while it was being offered. Specifically, one question in the post-

course interview focused on receiving feedback on my efforts to grow my own practice as a

culturally responsive MTE. In that question, I asked the PPTs to reflect on how/if I modeled CRP in

my role as the course instructor:

In addition to teaching *about* CRP in mathematics, one of my goals is to teach *through* CRP;

that is, to improve my own CRP and apply it to teaching this course. Can you think of any ways that I modeled CRP through teaching this course?

Since this question asked PPTs to comment explicitly on the modeling of CRP, data from only that

question have been selected as the focus for this paper's analysis and discussion.

Data Analysis and Findings

Qualitative thematic analysis of this one interview question, posed to the nine interviewed

PPTs across two offerings of the course (4 in 2019 and 5 in 2021), yielded several themes which

express how (according to the PPTs) I successfully modeled CRP while teaching the course. The

four key themes are presented briefly below, with supporting participant quotes.

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Distributed Expertise

I refer to this first theme as 'distributed expertise' because of how PPTs described my way of

sharing, or distributing, the responsibility for teaching (and learning) the content of the course.

PPTs noted how I incorporated many 'others' into the course, including a variety of guest speakers

who were invited to present (in person or through Zoom) on topics within their realm of experience

and/or research in relation to CRP. As P9 noted: "You brought in other people to share. You know,

it wasn't just your viewpoint, you brought in other educators to come in and talk to us. And yeah,

that was culturally responsive."

In addition, PPTs expressed how the design of the course assignments encouraged students to

become experts by digging deeper into a topic and then presenting seminars to their fellow

classmates. Not only did this provide opportunities for my students to collaborate with each other,

but it encouraged the sharing of multiple perspectives as PPTs supported each other to make a shift

toward stronger CRP-focused practices.

Pushing Boundaries

PPTs commented on how I positioned myself as an inquirer and learner in the same field as I

am instructing. They discussed how I showed openness to learning about the ideas they brought

forth while, at the same time, I would point out things for students to examine and think more

deeply about. As P23 offered: "You were always good at pointing out... 'did you ever think of this,

and this? Well, have you thought of this? And here's some ways you can expand your thinking...' I

think that's just really helpful and valuable."

PPTs, like P27, remarked that the course challenged them, and pushed boundaries,

encouraging students to ask themselves questions about their own views and beliefs. "You

challenged our beliefs. You made us think," noted P27. Similarly, P12 reflected, "I changed my

way of looking at life, at everyday life, kind of... math is really embedded in life."

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Image of CRP

According to most of the PPTs interviewed, the image of CRP conveyed in the course illustrated to them that there are many ways to define and enact CRP. In other words, they observed that what CRP means and looks like is as varied as the classrooms involved. PPTs shared how this image was evident in the *way* the course was taught but also evident in the *design* of the course, in the way I mapped out the many dimensions that shape CRP. As P30 shared:

Even through the assignments... for example, I did Indigenous education and [another student] did place-based education and it's almost like they were two different sections within one strand, but then we brought them together. So, I guess it showed a lot of interconnectivity between some of the different strands within CRP as well.

Voice and Choice

This fourth theme, referred to as 'voice and choice,' was probably the most prevalent theme across the interview data. PPTs noted that I made an effort to privilege *their* voices throughout the course. As P28 shared: "... that sets the tone that like everyone's welcome, everyone's voice is important, everyone has the right to be heard." In fact, according to P28, by bringing in their voices and perspectives, I was bringing in their culture: "Bringing our voice into the classroom was definitely one way that you were, I guess you could say, kind of touching with our individual cultures or home life." This effort to include and feature student voice began with the pre-course surveys, where students were invited to share their knowledge, experience, and ideas prior to beginning the course, through to the final course assignment, which was an open-ended project where students could select a topic based on their own preference and direction. PPTs felt this was an indication of my effort to 'personalize' the course, with the following four quotes from the interview transcripts illustrating this theme:

- "You have given us the agency to do the project. It's not teacher driven. It was student driven." (P12)
- "... everybody took something different [from the course] that was important to them to do their final assignment or their project on" (P30)
- "... a lot of times it was the students that were taking ownership of the learning... involving the students to kind of shape the course" (P20)
- "I felt like I had lots of room to try and do things in a way that would make sense for me and my circumstances." (P29)

Discussion

Given that only nine PPTs were interviewed, the data are not extensive; yet they do provide a

starting point for me to return to the literature reviewed earlier in this paper to discuss possible

connections between the data and how research in the field of CRP and teacher education

describe/define what it means to be a culturally responsive teacher educator.

In reflecting on these themes with the goal of moving forward in this research, I present four

reflections to constitute this discussion.

Reflection #1: Surprise

Two particular aspects of the interview data surprised me. Firstly, I was surprised by the fact

that the language and terms which were prevalent in the design of the course—for example, funds

of knowledge, social justice, critical mathematics, equity, etc.—were not drawn on by PPTs in the

interviews to describe my practices. As a result, I consider the possibility that these words still

remain on the theoretical (definition) level for the PPTs, without an understanding of what they

look like in (my) practice. I am drawn to reflect on how, in future offerings of this course, I can

make the connections between theory and practice more explicit, without necessarily moving to

"lesson planning" activities. It is already my practice to caution students on the danger of producing

token applications of these new ideas if they move too quickly from theory to practice as they learn;

however, I am starting to recognize that these words of caution without more explicit reflection on

how and when to make these moves could be leaving PPTs without tangible ways to ground their

learnings.

Secondly, I was surprised by the PPTs' ways of describing a culturally responsive practice.

As I read through and constructed themes across the interview data, I kept asking myself why this

(theme/action) was considered culturally responsive. For example, I'd ask: 'What is it about a

distributed expertise model of teaching that makes it culturally responsive?" In fact, as I analyzed

the data and pulled out quotes to support what I was noticing, I kept saying to myself, "this sounds

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like good pedagogy but it is it culturally responsive pedagogy?", thus reminding me of Ladson-

Billings' (1995b) article "But that's just good teaching!" In that article, she clarifies, "[t]he

pedagogical excellence I have studied is good teaching, but it is much more than that" (p. 159). One

PPT (P29) actually prefaced his ideas at one point with, "and I'm not 100% sure if this fits in the

CRP category but...." and then would add such descriptors as group work, or sharing with

colleagues.

Because of these questions, I returned to the literature to conduct the review presented in this

paper. I fully recognized that since the *content* of the course was focused on CRP, looking to the

literature for how to incorporate cultural content was not as helpful. I needed to understand more

about modeling CRP; that is, learn about the characteristics/dispositions of (mathematics) teacher

educators being described as culturally responsive.

Reflection #2: Timing

The post-course interviews occurred within a few weeks of course completion, which

encouraged me to reflect on whether these PPTs would have had enough time to internalize and

process for themselves what CRP might look like in their own classrooms as teachers, let alone have

the capacity to reflect at the level of someone else's classroom practices. Reflecting on the timing of

the interviews has pointed me toward the idea of conducting a follow-up interview with these 9

PPTs, months (even years) later, to learn how their ideas about modeling CRP and what CRP in

mathematics means and looks like may have changed or evolved during the time.

Reflection #3: Things Said

The literature review presented in this paper provides me with a few portraits or frameworks

for use in reflecting on my own teaching about and through culturally responsive pedagogy. The

texts offer possibilities for me to reflect on how the themes in the data from this study might

connect to the characteristics/traits that teacher educators are called on to model in their own

practice as culturally responsive (mathematics) teacher educators. Take for example, the first and

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fourth themes in the data regarding the distributed expertise model of facilitating the course and privileging the voices of students throughout the course. Both of these themes closely connect to the key reflective question in the Keazer and Nolan (in press) framework around how my pedagogical practices draw on students' mathematical discourse and funds of knowledge. In addition, the third theme, regarding the many ways to define and enact CRP depending on the classroom context, connects to the salient characteristic proposed by Villegas and Lucas (2002) that the culturally responsive educator "understands how learners construct knowledge and is capable of promoting learners' knowledge construction" and Gist (2014) who states that the culturally responsive teacher educator "utilizes constructivist approaches in teaching." The second theme of pushing boundaries also reflects, I believe, constructivist approaches in teaching while, at the same time, models Gist et al.'s (2019) principle of encouraging "preservice teachers' critical openness and reflection." These texts have been my starting point for grappling with the question of what makes a pedagogical action culturally responsive, though most of them leave much to be desired with respect to a critical component to CRP.

Reflection #4: Things Not Said

Following my reflection on 'things said' by PPTs in the interviews, I close this discussion by pointing to a few 'things not said,' which (admittedly) I had hoped to hear. Given my intention to highlight a socio-political edge to my teaching and to the content of the course, I thought I would hear more from PPTs about my critical orientation throughout the course, in pointing to, for example, how the mathematics that we learn and teach in schools should be challenged and changed; that the dominant discourses of school mathematics serve to marginalize many students and their cultural resources; that the injustices and inequities in mathematics participation need to be disrupted. These were things not said (by PPTs). In addition, while I was delighted to hear that PPTs appreciated the openness of the course and the many ways brought forth for defining and enacting CRP, I wonder now if any PPTs were able to discern my underlying reasons for this

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approach—that rigidly defining what CRP is and looks like in mathematics would only serve to replace one dominant, oppressive paradigm for teaching and learning mathematics with another.

Closing Thoughts

What seems apparent through this study is that the adoption of oversimplified versions of CRP, based in technical-rational visions for teacher educator modeling, do not provide strong support for an agenda based in social justice and equity work in mathematics education. As noted in Nolan and Keazer (2021b), "[w]e risk becoming complacent with less robust forms of CRP—versions that distract from the absence of critical components and allow inequitable and biased pedagogies to silently persist" (p. 154). Research on teacher educator modeling should take, as its starting point, the belief that teacher educators' pedagogical choices are a social justice issue (Lingard & Keddie, 2013; Nolan, 2009) and that social justice "can only be achieved in the disruption of practices which contribute to the reproduction of educational inequalities" (Beighton, 2017, p. 113). Disrupting pedagogical practices which serve to sustain educational inequities and injustices highlights a central aim of critical forms of CRP—forms that helps build "student capacity for intercultural understanding, empathy, and mutual respect" (Truth and Reconciliation Commission (TRC), 2015, p. 7) in Indigenous contexts.

As the data analysis and reflections indicate, I have room to grow in cultivating my practice as a culturally responsive MTE. Moving forward, I propose that reflections on my own practices could become a more explicit aspect of the course, sharing with the PPTs some of the characteristics/dispositions of a culturally responsive (mathematics) teacher educator and my own commitment to reflect on them and to grow. As noted earlier in this paper, a set of such characteristics/dispositions is shared in other research I have conducted (Keazer & Nolan, *in press*) and so it is timely for me to merge some aspects of these two research studies. Perhaps such an approach will help me to model the tensions and struggles involved in being/becoming a culturally responsive educator.

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