

On Becoming a Culturally Responsive Teacher of Mathematics

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Abstract

This paper forms part of the activities in progress for the development and implementation of a framework for examining teachers' perspectives on culturally responsive pedagogy (CRP) in mathematics. Drawing on Ladson-Billings' three CRP elements (academic achievement, cultural competence, sociopolitical consciousness) as the starting point for our framework, we place emphasis on five integral components of teachers' perspectives on CRP: challenges, opportunities, fears, resistance, and insights (COFRI). Here, we draw on the reflective journal responses of five Canadian teachers enrolled in a CRP course and analyze them using the COFRI framework. We conclude with a discussion on how our framework could be used in future research and teaching.

Keywords: Culturally Responsive Pedagogy, Mathematics Teacher Education, COFRI

Introduction

... it does not seem easy to distinguish [culturally] appropriate from appropriation as a cultural outsider. I have often struggled with this idea of being an outsider told to tell someone else's story—it feels wrong to me on a very personal level. These stories are not mine, and I do not follow or necessarily believe in them. I also believe they are important, worthwhile and deserve full acknowledgement of their richness and importance to the people who do hold those cultural values and stories. (Felix, research participant)

This paper addresses the importance of educating teachers of mathematics on the knowledge and experiences of Indigenous and other marginalized learners. Culturally responsive pedagogies (CRP) are increasingly being recognized as a critical way forward to achieve this important focus in the field of mathematics teacher education (Greer et al, 2009; Nolan & Keazer, 2021a). Conceptualizations of CRP in mathematics education have included a focus on Indigenous education, in addition to social justice, critical mathematics, ethnomathematics, language diversity and equity-based research (Nolan, 2020). In fact, even though the published literature on research into CRP is extensive, as Young (2010) points out, “[t]he void in scholarly research is not in the

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knowledge of theories but in the knowledge of how to implement them, particularly in a way that has a wide-reaching and sustainable impact on teacher education” (p. 259).

The study informing this paper aims to make that wide-reaching and sustainable impact on mathematics teacher education through its focus on studying prospective and practicing teachers’ (PPTs’) perspectives on CRP as students enrolled in a course on CRP in mathematics. Data from the study focused on PPTs’ ideas about CRP at various points in the course. This paper draws on data from a reflective journal assignment where students were asked to respond daily to questions designed to stimulate their growth and development of CRP. As offered by Rychly and Graves (2012), “the work of becoming ‘culturally responsive’ is quite personal, and may best begin with individuals engaging in reflection as a process” (p. 48), which necessarily includes digging deeply into one’s own beliefs, preconceived ideas and expectations around students from diverse cultures and their engagement with mathematics.

We begin this paper by reviewing the literature on CRP in mathematics education, including our previous paper (Nolan & Xenofontos, *under review*) where Ladson-Billings’ (1995, 2014) three elements of CRP (academic achievement, cultural competence, sociopolitical consciousness) served as the starting point for our research. In this paper, we pick up where the previous paper left off, which was the introduction of a framework emphasizing five integral components of PPTs’ perspectives on CRP: challenges, opportunities, fears, resistance, and insights (COFRI). By drawing on the initial responses of the reflective journal assignment, the perspectives of PPTs enrolled in that CRP course were analyzed using the COFRI framework.

Theoretical Considerations

In the last 15 years, the mathematics education literature on PPTs’ perspectives on CRP has grown significantly, some with an explicit focus on CRP (Nolan & Keazer, 2021b) and others with a related focus on Indigenous education and equity-based research contexts (Crespo et al., 2022; Nicol et al., 2020). In fact, many related studies report findings from courses specifically designed

to help participants become culturally responsive mathematics teachers (see for example Averill et al., 2009; Bonner & Adams, 2012; Parker et al., 2017). Nevertheless, as we observed, there appear to be inconsistencies regarding the extent to which the development of explicit sociopolitical consciousness is addressed in these studies. For example, while in some papers the development of such a consciousness is addressed explicitly (Aguirre & del Rosario Zavala, 2013; Kokka, 2020), in other papers this is either implicit (Kelley, 2020; Parker et al., 2017) or absent (Averill et al., 2009; Bonner, 2014).

The absence of sociopolitical consciousness from many CRP studies is also discussed by Ladson-Billing (2014), whose work we draw on extensively. In her earlier writings, Ladson-Billings (1995, 2006) proposes three elements of CRP: academic achievement (also called student learning), cultural competence, and sociopolitical consciousness. Briefly, academic achievement is concerned with “what it is that students actually know and are able to do as a result of pedagogical interactions with skilled teachers” (Ladson-Billings, 2006, p. 34). Cultural competence “refers to helping students to recognise and honor their own cultural beliefs and practices while acquiring access to the wider culture, where they are likely to have a chance of improving their socioeconomic status and making informed decisions about the lives they wish to lead” (p. 36). Finally, sociopolitical consciousness, according to Ladson-Billings, must first begin with teachers educating “themselves about both the local sociopolitical issues of their school community (e.g., school board policy, community events) and the larger sociopolitical issues (e.g., unemployment, health care, housing) that impinge upon their students’ lives” (p. 37) and then to bring these issues into the classroom to “help students use the various skills they learn to better understand and critique their social position and context” (p. 37).

In a previous paper (Nolan & Xenofontos, *under review*), we discuss how we began using Ladson-Billings’ three elements to analyze mathematics PPTs’ perspectives on CRP before their participation in a related professional development course. The findings from that previous work

distinct elements for analyzing teachers' perspectives was not as productive as we expected it to be, since there were significant overlaps between the elements; in some cases, rendering their distinction impossible for us. Nevertheless, we concluded that there are five underlying characteristics within teachers' responses, which describe or qualify their perspectives toward CRP. We labelled these characteristics as *challenges*, *opportunities*, *fears*, *resistance*, and *insights* (COFRI). Figure 1 illustrates how we conceptualize teachers' perspectives on CRP framed by Ladson-Billings' three elements. In Table 1, we define each of the COFRI components.



Figure 1 Our working conceptualization of teachers' perspectives on CRP

Characteristic	Brief description
<i>Challenges</i>	The idea of challenge involves awareness of one’s lack or partial development of competence to address an issue. Challenge is based on a person’s perception that new knowledge, dispositions, skills, or tools (KDST) are required, which they are inspired to move forward and acquire.
<i>Opportunities</i>	Opportunity refers to the identification of space for something “good” to happen. A person sees the space as already existing; things are in place to move forward (i.e., the person has the KDST to move forward) to make good things happen.
<i>Fears</i>	The feeling that attempting something might lead to failure. A person might be inclined to stop in their tracks (or even move backward), and to rationalize this (non)movement by saying they do not have (and cannot easily obtain) the KDST to achieve it.
<i>Resistance</i>	The expression of dispositions against or disbelief in the importance, feasibility, or possibility of specific ideas. Resistance can manifest itself through “rationalizing discourses” which have the property of projecting how <i>others</i> will act or respond to a situation—an “it’s not me, it’s them” approach to resisting an idea.
<i>Insights</i>	An understanding or realization of what is currently happening and/or how things could be. In addition to seeing what is currently happening, a person will generate new ideas for extending, adapting, and/or improving. Generally, when a person has ‘insight’, this will affect the other four components. That is, an insight suggests a new direction which could create a new challenge, opportunity or even fear or resistance depending on the ‘tools’ one has. Consequently, an insight might lead to gaining new tools (challenge), moving forward with what one has (opportunity), halting/moving backwards (fear), or disbelief (resistance).

Table 1. The COFRI components—brief description

About the Research Study: Data Collection and Analysis

This study was conceptualized around a course entitled *Culturally Responsive Pedagogy (CRP) in the Mathematics Classroom*, offered as part of a Teaching Elementary School Mathematics (TESM) certificate program at a Canadian university. One of the authors (Nolan) was the instructor and designed the course to reflect the many intersecting fields of research that can be seen to shape CRP; for example, ethnomathematics, Indigenous education, critical mathematics education and equity-based research. The overarching goals of this course in CRP were to deepen understanding of mathematics concepts while developing a critical cultural consciousness.

The research study conducted while teaching this course aimed to understand more about how students interpreted the social, cultural and political challenges of teaching through CRP. Data were gathered for the study at various points, from pre-course surveys to a reflective journal assignment during the course, and then post-course interviews, during three separate offerings of the course (in 2017, 2019, and 2021). Over these three offerings, 38 individuals took the course, of which 31 consented to participate in the study. Most of these 31 participants were practicing teachers, with only two being undergraduate prospective teachers; to include both practicing and prospective teacher categories, the participants are referred to in this paper as PPTs.

As already noted, our previous paper (Nolan & Xenofontos, *under review*) sets out to describe PPTs' perspectives on CRP prior to participating in any class lectures or activities; specifically, perspectives analyzed for that paper were drawn from the pre-course surveys, where PPTs were asked about their initial understandings of and knowledge about CRP. For this paper, we draw on another key data set: the daily reflective journal assignment entries. For the purposes of this paper, and our desire to further 'test' the viability of our COFRI framework, we analyzed only the early journal responses of the students enrolled in the course in the 2019 and 2021 offerings.

We analyzed responses to the first two journal questions in the 2019 course offering:

1. What concerns you the most about today's discussions on bringing culture, responsiveness, and mathematics together? Is this the start of something different for you, as a mathematics teacher and learner?
2. As culturally responsive mathematics teachers, how do you promote culturally inclusive and culturally appropriate mathematics in your classroom? How do you tell the difference between culturally appropriate and cultural appropriation?

In 2021, these two questions were merged to create only one question, and hence one journal response for analysis:

1. What concerns and/or excites you the most about today's discussions on bringing culture, responsiveness, and mathematics together? When bringing them together, how do you tell the difference between being culturally appropriate and cultural appropriation?

The initial journal questions posed during the 2017 (the first) offering of the course were significantly different from those in the 2019 and 2021 offerings, so 2017 data have not been

included in the analysis for this paper². In total, there were 23 participants across the 2019 and 2021 offerings of the course. To increase our study's confirmability (Lincoln & Guba, 1985), we each worked independently with all initial journal entries from the 23 participants, using the five COFRI components as our guide, in the form of theory-driven coding (Boyatzis, 1998; Kvale & Brinkmann, 2009; Miles & Huberman, 1994). Soon after, we shared and discussed our individual analysis with each other, to ensure that we both understood and used COFRI as a coding scheme the same way.

After analyzing the journal responses of these 23 participants, we selected 5 specific PPTs to treat as case-study participants for the purposes of this paper: Cindy, Olive, Felix, Raymond, and Iris. Cindy and Olive are from the 2019 offering of the course, while Felix, Raymond, and Iris are from the 2021 offering. All names assigned are pseudonyms. We settled on these five case studies to present here for a number of reasons, but primarily because our analysis revealed a strong blend of the COFRI components in these participants' journal responses. The importance of this blend will be further addressed in the discussion section but, suffice it to say, a key learning for us in this data analysis was around the idea that a best approach to analysis did not involve extracting evidence of individual COFRI components from the participants' journal responses. Instead, utilizing a case study approach to analysis meant that response narratives remained intact and illustrated to us something quite significant: that COFRI components could exist side by side and even overlap/intersect. In other words, in one journal response it was possible to see evidence of, for example, participants expressing fear and resistance, while also looking ahead to the opportunities that might be available to them as they learn more about CRP. This is significant for mathematics teacher education in providing an entry point for PPTs themselves to reflect on the

² Journal questions in 2017 were specific to the assigned course readings, whereas journal questions in 2019 and 2021 were constructed to be more general in nature so that the same questions could be used across course offerings even if the course readings changed from one offering to another.

juxta positioning of very different perspectives in their journey to becoming culturally responsive teachers.

Findings

In the pages that follow, we present our analysis of the five case study participants, through the lens of our COFRI framework. In aiming to find balance between participants' own words and our COFRI-based interpretations, we note that some excerpts are lengthier than others. We kept those lengthy excerpts intact to give readers a more complete picture of the identified COFRI components.

The Case of Cindy

Cindy began her first journal entry with a lengthy section expressing *resistance* towards CRP. In her attempt to justify her belief that it might be overwhelming for teachers to address all cultures in the mathematics classroom, she referred to an incident that had happened to her mother who, as a school librarian, needed to respond to a child's question about why the Bible was not in the library catalogue.

One thing that concerns me is the sheer amount of cultures that there are in the world and how on Earth am I going to do them all justice when teaching students. When I read this question as well as in class, I kept going back to this conversation I had with my mom who works in a K–12 school library. She had a grade two student ask for the Bible. Seeing as it is a school and they do not have it in the library, she had to come up with something quick to not devastate this student. She told him that if they had the Bible, they would have to have every religions version of the Bible and that would just be too many books. The student accepted that answered [sic], realizing that she was right. It would be a lot of books. I feel as this conversation could be applied to the discussions we have had in class. There are just so many different cultures that it would be a lot for us as teachers as we would have to learn and then teach about them all but it would also be a lot for the students. I am not saying that we need to not teach anything about other cultures at all. It definitely is important to educate students about the various cultures around the world. We just need to be choosy as to which ones so as not to overwhelm ourselves or the students.

The previous section occupied the largest part of Cindy's Day 1 journal entry. Nonetheless, she closed by stating "[t]his is all new territory for [her]" and that she was hoping the program

would provide *opportunities* for her “to dive more into the subject of cultural responsive pedagogy.”

In her second journal entry, Cindy referred to several tasks in school mathematics textbooks she now saw from a cultural appropriation point of view. “To make things cultural [sic] appropriate, we need to dive deeper into the meaning behind it,” Cindy wrote. She continued by highlighting an *insight* behind textbook culture-related tasks, how we do not always find the mathematical concepts we would expect: “If we think back to the question about the jingle dress... This to me is cultural appropriation as they are more focused on the specific concept. However, there is math behind the making of the jingles just not the math we expect.” Moving on, Cindy pointed out that culturally appropriate activities provide *opportunities* to see “something that can happen naturally. If for example, you are doing a unit on patterning and a student brings up the beading they have seen on a First Nations lanyard, it would be a great time to look into the meaning behind the patterning.”

Interestingly, Cindy concluded her Day 2 journal entry with another lengthy section of *resistance* towards CRP. Specifically, she wrote that mathematising every aspect of all different cultures would take too much time, for which the school curriculum does not have space. For this reason, Cindy argued, it might be more appropriate to address culture-specific topics in school subjects other than mathematics, as for example social studies.

If we went into so much detail for every single question, we would be doing math forever. There definitely is a time and a place in my opinion to bring in the math of other cultures. Math class is definitely one place to do that but we are expected to do so much already that it can get overwhelming to have to think about one more thing to do in math, when trying to get through the mandated curriculum is already time consuming. I think that to eliminate some of this overwhelming feeling we can be culturally appropriate as well as culturally inclusive by incorporating math into social studies. Social studies would allow us the flexibility to incorporate concepts from math into what is currently being studied. I feel that it would take some of the pressure away and allow students to see that math is found in more than just math class.

The Case of Olive

In her first two journal entries, Olive expressed all five COFRI components. On Day 1, she began by highlighting how *insightful* the course was, and that never before had she considered any links between mathematics and culture.

It is truly fascinating that in such a short time of unpacking culturally responsive pedagogy in mathematics it has become so thought provoking. After a short period of time in class, I already feel the need to further understand and explore the theme of this course. Prior to these discussions, I can honestly admit, I had a disconnect between culture and math. I wondered how such a traditionally concrete subject such as math, could be connected to being culturally responsive.

Nevertheless, immediately after this insight, Olive wrote about the difficulties teachers might face in their day-to-day professional lives, which might make the adoption of CRP difficult. She commented on how the overloaded curriculum might not allow space for CRP, something we saw as *resistance* of the form “interesting ideas, but...”.

Though I am only beginning my understanding of this, immediately some concerns arose. Being a teacher, with many responsibilities and demands, it is hard to imagine adding one more thing to the pot per say. The first concern that came to mind was, of course, the curriculum. A document that has been forced, squished, and squeezed since the second I entered the doors of the university upon my educational journey.

Subsequently, Olive indicated a personal *challenge* by referring to her current lack of knowledge of “how to authentically integrate culture into the curriculum, while still making it authentic, meaningful, and without negative permutations, such as tokenism or cultural appropriation.” As a result of expressing such an awareness, she continued by discussing a *fear*, that of her practices being led by tokenism, as she is not expert on cultural matters: “Next came fear, I am no expert on culture, immediately my mind went to, ‘how do I ensure I am not using tokenism?’ which I see frequently done with treaty education.”

Olive’s Day 2 journal entry was characterized by insights and an indication of opportunities to develop her knowledge and skills as a CRP-informed teacher. For example, she expressed an *insight* by commenting on the need for one to make the conscious decision to become a CRP mathematics teacher:

I believe the first step to becoming a culturally responsive mathematics teacher, is to make a conscious decision to become one. I do not believe it is something that is always instinctual based on the societal pressures and ideologies that are persistent in our communities. It takes a conscious step back from ethno-normative perspectives to open yourself to the understanding that this is not a reality for our learners in our classrooms.

To become a CRP mathematics teacher, according to Olive, professional development programs such as the one she is enrolled in, provide *opportunities* for teachers to challenge their ideological standpoints and develop ideas on how to apply CRP in practice:

This can be done by taking courses such as this, by doing topic related readings, getting to know our learners unique family backgrounds and worldviews, by doing these things begin to open our perspectives and deepen our knowledge to become more culturally inclusive and then you can find ways to integrate this into your classroom. I do not believe a person is one day just going to become culturally responsive, as discussed like a checklist.

The Case of Felix

Felix's journal entry addressed four of the five COFRI components. In acknowledging his own white privilege, Felix admitted his *fear* of not doing a good job as a CRP mathematics teacher:

I think my concerns weigh heavily on me and make it difficult to get excited. I try to be reflective of my privilege and place in addressing social inequity as a white man in modern society. I have often struggled with my place in this narrative, and how I can appropriately uplift the voices of those who need to be heard without overstepping or filling the cliché “nice white person” role. Concisely, I am concerned about doing a poor job of bringing culture, responsiveness, and mathematics together and similarly concerned not doing ANY job out of fear of doing it poorly.

Yet, Felix continued by responding to his own fear by stating that he saw this as an *opportunity* for him to develop his knowledge and skills in this area, something that would eventually “increase engagement and fulfillment for [his] students.” In his own words,

My excitement is that there are many knowledgeable and caring voices out there who seem to have tread this ground with my same fears and have wisdom to share. I hope that I can learn actionable skills that are realistic within my context. I am excited to get to dig into the idea of ‘tokenism’ and cultural appropriation and to hone my critical evaluation skills for what is or is not appropriate.

Felix continued discussing the same topic, that of him being a “cultural outsider.” As presented in the opening of this paper, he elaborated on this, by expressing the *challenge* of

distinguishing between cultural appropriate and cultural appropriation, in regard to telling other people's stories.

When these ideas are brought together it does not seem easy to distinguish appropriate from appropriation as a cultural outsider. I have often struggled with this idea of being an outsider told to tell someone else's story— it feels wrong to me on a very personal level. These stories are not mine, and I do not follow or necessarily believe in them. I also believe they are important, worthwhile and deserve full acknowledgement of their richness and importance to the people who do hold those cultural values and stories.

This challenge has been something he was aware of before his enrollment in the program. In addition, Felix provided an *insightful* comment which emerged from his engagement with the program's activities and readings. Specifically, he wrote "about the danger of mathematizing/personalizing too," which "sparked some riveting ideas in how to approach the role of western and other cultural math processes."

The Case of Raymond

For Raymond, learning about how CRP and mathematics are connected was an overwhelming endeavour, and this contributed to his *fear* and reluctance to begin to explore this area. As he wrote, "[w]hen I look for things that are concerning or exciting about bringing culture, responsiveness, and math together, I'm afraid I mostly come up with concerns. Which is a concern in itself, I suppose. It feels like such an enormous goal, and I'm worried I'll find myself reluctant to begin."

When reflecting on issues discussed in the program, he offered some interesting *insights* regarding the balance between the mathematical and the cultural aspects of tasks.

When I consider the textbook examples of "cultural math" that we saw in class today, it was easy to identify that some math questions were good math questions (rich, multi-level, extend-able, connection-building scenarios), and some were more trivial (requiring low-level cognitive processes, or simple repetition of algorithm). I found that my impulse was to identify "good" math questions as "good cultural math" questions. But I can see that even the "good" questions tended to mathematize (trivialize) the cultures in question rather than explore that culture's approach to math.

In discussing the insight reported above, Raymond admitted a personal *challenge*, which he called "bringing math to bear." Quite often, he argued, teachers tend to mathematize situations that were not initially meant to be mathematical (or the actors in those situations were not concerned

about mathematics). Raymond gave the example of “a 3-act task (...) where a man climbed a set of stairs, and then a set of super-stairs,” for which solvers are supposed to look “for ways to bring math to bear on that situation (even though the runner in the situation would not likely have been thinking about this math).” Tasks of this type require solvers to sort “through [their] box of generalized math tools to try and represent this situation so that [they] could reinforce connections between underlying math concepts that were present.” As Raymond pointed out, things become much more challenging when “we use cultural context or stories in this way,” as “we are in danger of trivializing that culture of propagating inequality.”

In closing his first journal entry, Raymond presented an *insightful* comment about his current practice involving “western” mathematics, something he was looking forward to questioning though the program. In his own words, “[m]y sense at the moment is that the ‘western’ math I teach is largely about developing general tools to apply in a variety of situations, while the intersections of culture and math that I hope to explore in my classes is very specialized (igloos, tipis, woven baskets, and so on).”

The Case of Iris

In introducing her Day 1 journal entry, Iris highlighted her excitement for the program’s provision of *opportunities* to develop her CRP knowledge and skills. As she wrote, “[w]hat excites me the most is that I feel like I am on the right path in my understanding that culturally responsive pedagogy should be authentic and meaningful, as opposed to simply included to satisfactorily check off a box.”

Iris acknowledged her white privilege and located her own upbringing in “a very Eurocentric world-view.” Therefore, she expressed her *fear* that this might compromise her “effectiveness in teaching about other cultures in an authentic way that is appropriate, and not appropriation.” In a more detailed unpacking of her fear, she shared:

I definitely feel a level of concern and anxiety in embedding different cultures into the classroom. I hope this is taken as me expressing my vulnerability rather than ignorance

and privilege, but I grew up in a predominantly white, upper middle-class community. My exposure to any culture different than that of my own was not overly emphasized, same with my understanding of any social/economic injustices as well. Now to be teaching in the exact same community, I do fear that I will often “come up short” in delivering enriched lessons in cultural diversity (for one, but along with many other branches including social justice).

Iris’s entry concluded with an *insight* concerning the difference between cultural appropriateness and cultural appropriation. In doing so, she reflected on one of the program’s readings. As she wrote,

I understand, through our conversations today, that when combining culture, responsiveness and mathematics together we allow for an authentic, meaningful, and insightful learning experience where students are able to appreciate and celebrate the mathematics naturally embedded in varying cultures. Cultural appropriate [sic] is the malpractice of culturally responsive pedagogy. As Wiest describes “culture content is inappropriately added to instruction if it is merely grafted onto a topic, included as an optional or extra feature, or treated in a superficial manner” (Wiest, 2001). I find this true when discussing cultural appropriation as it pertains to the notion that culture can be used as an added component for some lessons, when in actually [sic], culture is not merely an addition to something, it is life itself.

We consider the above excerpt from Iris’ journal to reflect an important insight for her into the difference between culture as part of life and culture “grafted onto a topic” when planning lessons in mathematics. The presence of the specific COFRI component of insight in Iris’ reflective journal entry above suggests to us that Ladson-Billings’ elements of cultural competence and sociopolitical consciousness are growing and intersecting in very important ways for Iris.

Discussion and Conclusions

A key learning for us in our COFRI-driven analysis was how expressions of challenges, opportunities, fears, resistance, and/or insights could exist side by side, potentially even overlapping/intersecting with each other within one journal response. Take, for instance, the case of Felix. In one journal response of scarcely more than 300 words, our analysis yielded four of the five COFRI components: moving from fear, to opportunity, then to challenge, and finally to the expression of an insight.

With regard to becoming a culturally responsive educator, Rychly and Graves (2012) support the need for “a structured process to both facilitate and assess reflection that guides practice” (p.

49). Viewing the reflections of PPTs on their developing perspectives on CRP through the lens of the COFRI components provides us, as mathematics teacher educators, with this structured process for reflection. While we fully embrace the goal of PPTs developing Ladson-Billings' three elements of CRP, we propose that asking PPTs (and, indeed, mathematics teacher educators) to first identify challenges, opportunities, fears, resistance, and insights in their perspectives presents a promising way forward for PPTs to center their growth and development of these CRP elements. In fact, we propose that, for future course offerings, integrating into the reflective journal assignment an explicit reflection by PPTs on the COFRI components could have positive implications for the field of mathematics teacher education and being/becoming a culturally responsive teacher of mathematics. One idea we have is to ask the PPTs to analyze reflective journal entries (their own and/or others') using the COFRI framework, in the same way as we did for our analysis presented here. In this way, we could be more proactive with our PPT students in addressing, for example, challenging concepts or areas of resistance that emerge during the course offering, thus providing timely (in-the-moment) opportunities for growth as culturally responsive teachers of mathematics. Also, in future offerings of the course, PPTs could be asked to address each COFRI component more explicitly in relation to specific Indigenous and migrational populations, and link their journal reflections to the diverse cultures and funds of knowledge flourishing in their mathematics classrooms.

In this paper, we presented the cases of five teachers, by focusing on their first (and, for those who participated in the 2019 offering, second) journal entries. Given that our analysis thus far has been conducted using data from only the first one or two classes, we were not surprised when we identified, overall, more challenges, fears and resistance in the PPTs' responses than the components of opportunities and insights. As the analysis continues, tracking PPTs' journeys through the semester, we expect to notice a different balance across COFRI components. Our plans involve examining all journal entries through the lens of our COFRI framework, with an aim to understand how each component develops for each PPT throughout the professional development

course, as well as how these five components could be interrelated, or even possibly divided into sub-components. Interestingly, even though the COFRI components had initially emerged through our attempts to understand, explore and analyze CRP-related data, they are not specifically bound to CRP. We would, therefore, like to encourage other researchers working in the field of teacher professional development to consider how other courses (within and beyond mathematics education and/or CRP) may address teachers' perceived *challenges, opportunities, fears, resistance, and insights*.

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