

To Become Wise to the World Around Us: Multiple Perspectives on Relating Indigenous Knowledges and Mathematics Education

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Significant curricular initiatives in mathematics have been undertaken across Canada to appropriately and respectfully consider indigenous knowledges and perspectives. For example, the Western and Northern Canadian Protocol (WNCP 2006, 3) common curriculum framework for K–9 mathematics now describes Aboriginal learners:

Aboriginal students in northern and western Canada come from diverse geographic areas with varied cultural and linguistic backgrounds. Students attend schools in a variety of settings including urban, rural and isolated communities. Teachers need to understand the diversity of cultures and experiences of students.

Aboriginal students often have a whole-world view of the environment in which they live and learn best in a holistic way. This means that students look for connections in learning and learn best when mathematics is contextualized and not taught as discrete components.

Aboriginal students come from cultures where learning takes place through active participation. Traditionally, little emphasis was placed upon the written word. Oral communication along with practical applications and experiences are important to student learning and understanding. It is also vital that teachers understand and respond to non-verbal cues so that student learning and mathematical understanding are optimized.

A variety of teaching and assessment strategies is required to build upon the diverse knowledge,

cultures, communication styles, skills, attitudes, experiences and learning styles of students.

These initiatives call on teacher educators, teachers, administrators and students to reconsider their received understandings of indigeness. They challenge inherited conceptual frames derived from the lengthy colonial process of looking for mathematics in cultural activities and validating the activities as mathematical from a Euro-Western perspective. We wonder about the possibilities of enacting an Aboriginal perspective within our educational contexts.

In May 2009, a group of mathematicians and mathematics educators of non-Aboriginal and Aboriginal descent participated in a study group on indigenous knowledges at the Canadian Mathematics Education Forum (CMEF) in Vancouver. For three days, we engaged in authentic conversations (Clark 2001) as we investigated the following questions:

- What do indigenous knowledges offer for teaching and learning mathematics by both Aboriginal and non-Aboriginal students and teachers?
- What role does language play?
- What roles do place, community and culture play?

Narcisse Blood, who is recognized as an *litsitsskopa* (emplaced-for-a-reason, or elder), led our conversations and offered guidance and wisdom in our endeavour to better understand the relationship between indigenous knowledges and teaching mathematics.

This article continues these conversations as we draw on our educational experiences to consider the following question: What is the relationship between indigenous knowledges and mathematics education in our current research and teaching projects? We have organized the stories of our multiple perspectives into four sections: culturally responsive education, language and mathematics, learning mathematics from place, and relationships. Our hope is that you will be inspired to appropriately and respectfully consider indigenous knowledges and perspectives in your teaching and learning.

Culturally Responsive Education

What has *culture* come to mean today? *Culture* came from anthropologists and the old country. The view back then was that any society other than ours is inferior. And anthropologists started saying, “No, that’s not the case. As a matter of fact, some societies are every bit as complex as, if not more complex than, ours.” That’s where the term *culture* started from. But today it has changed. It has a different connotation, especially where I work and in the community. *Culture* has evolved into a definition of right. We’re going to work with the universities, and they say, “Oh yeah, let’s not leave out the cultural component.” You know, as an afterthought. “Let’s get Ryan and Narcisse in there to appease.” It sounds good. Because when I was in high school, Indian Affairs came up with that same kind of thing: “We’ll throw in culture. We’re going to teach them how to bead.” And they brought in Mrs Rosie Day Rider and the late Louise Cropped Ear, who knew what they were up to. In the classes, you’d be doing beadwork, and they’d be telling stories. It was not what Indian Affairs wanted—you know, “We’ll throw a bead and feather in there to shut them up.”

Narcisse Blood

For the past few years, I have had the honour of working with researchers at the University of British Columbia, as well as teachers, students and community members in two rural communities and one urban community. In each community, we are exploring what it means to live culturally responsive mathematics education.

Our work is guided and informed by indigenous knowledges in multiple ways. First, our project brings together Aboriginal and non-Aboriginal scholars, school-based teachers and researchers, students, and community members to re-imagine mathematics

teaching and learning. Second, our work is informed and guided by the framework of indigenous storywork developed by co-researcher Jo-ann Archibald (2008). Working with teachers, we are exploring “the seven principles related to using First Nations stories and storytelling for educational purposes . . . : respect, responsibility, reciprocity, reverence, holism, inter-relatedness, and synergy” (p ix), in terms of our research and mathematics pedagogy.

We are exploring our awareness of these principles; how they could be used to connect mathematics, community, culture and indigenous knowledges; and what this could mean for improving students’ mathematical experiences and emotions. For example, indigenous storywork as a methodology focuses our attention on the importance of building relationships that are respectful and mindful of community protocols, of deeply appreciating the stories and experiences shared, of giving back and paying forward our work so that future teachers and students can learn from our experiences, and of considering our multiple responsibilities in the research process. Experiences with the land and nature emphasize the connection of the inner passion and heart with the environment. For us, indigenous epistemologies can be characterized as being experiential, storied, relational, contextual and holistic.

Our goal is to transform mathematics education so that it serves the diverse interests and aspirations of all Aboriginal and non-Aboriginal students in our project communities and beyond. Our goal is actualized by the following processes:

- Embracing a holistic and interconnected view of mathematical knowledge
- Exploring practical approaches to using local and traditional knowledges as resources for mathematics pedagogy
- Using local cultural values to extend the possibilities for pedagogical practices, connecting with students and learning from students

Project teachers are exploring culturally responsive mathematics education in multiple ways. One way is by developing mathematics problems inspired by traditional legends. For example, teachers designed a lesson around an audio recording of “Raven Brings the Light,” as told by community elders and youths. In this story, Raven brings light to the world after taking it from a series of nested bentwood boxes. The lesson, currently being piloted in classrooms, invites students to listen to the story and then explore the mathematics of building bentwood boxes out of paper.

A second way of exploring culturally responsive education is through developing digital storybooks.

Teachers and students have collected a series of images of the land and activities connected to the land. Together they have designed three mathematics photo books, which involved developing, adapting and writing mathematics problems inspired by the images.

A third way of exploring culturally responsive education has involved collaboration with the local museum. In this context, teachers are exploring the mathematics of the process of canoe building, from sapling to sea.

Teachers have been researching their own experiences of culturally responsive education in their classrooms, and they meet once every couple of months to share their ideas and stories.

Cynthia Nicol

During the past three years, I have had the opportunity to develop relationships with a number of Aboriginal elders and other leaders in the Aboriginal community in western Canada. I feel extremely privileged to have benefited from their sharing their knowledge.

Their knowledge has guided Judi MacDonald and me in the development of resources for teachers, students and parents in Aboriginal and non-Aboriginal communities. These resources, which are being written by education students at the University of Regina and the Gabriel Dumont Institute, have grown out of the audio and video capture of activities and conversations with members of the Aboriginal community. The use of audio and video material facilitates the inclusion of cultural context as an integral part of the resources, as well as making the content accessible to students in the early grades.

The following are three examples of events for which teaching resources are being prepared:

- Elder Glen Anaquod, from the Piapot First Nation, led students from Kitchener Community School through a teepee raising. This inner-city school in Regina has a high population of Aboriginal students. Through this activity, Elder Anaquod shared traditional Sauteaux teachings with students.
- Birchbark biting involves folding a paper-thin sheet of birch bark and putting a perforated design on it by biting. Rosella Carney, a Cree woman from La Ronge, Saskatchewan, is an artist in this art form. She is also a Cree-language instructor, and her interview includes a discussion of number words in Cree.
- Cassandra Opikokew was a student in the Indian Communication Arts program at the First Nations University of Canada and in the School of Journalism at the University of Regina, from which she

graduated in 2009. In her interview, Cassandra talks about how she uses the skills she gained in both programs, as well as the importance of Aboriginal issues and voices in the media.

Harley Weston

Language and Mathematics

What we're talking about is a language that was built over thousands of years. So one of the barriers to learning is time—concepts of time, constructs of time. We work with the museums and some of the parks, like Writing-on-Stone Provincial Park. We have something similar about preserving sacred sites, but their concept of preserving is that it's in the past. Our being there, speaking the language and looking at the petroglyphs, takes it out of that model and brings it to the present. To get that across is quite difficult, but there's movement along that line. And, therefore, when we open a bundle, it's—if you want to put it this way—it's history happening right there. So the language is that it's evolved over thousands of years.

Narcisse Blood

I began my teaching career in the We'koqma'q First Nation, which is a Mi'kmaw community on Cape Breton Island in Nova Scotia. Mi'kmaw communities in Nova Scotia have a unique jurisdictional agreement with the Government of Canada that gives them control over their education system and collective bargaining power. These schools live within the tension between the desire to provide culturally responsive and language-rich programs for students and the legal requirement to offer provincially approved curricula.

Student disengagement from mathematics and science is a concern for many teachers in these schools, as they grapple with the tension between school-based mathematics and Mi'kmaw ways of reasoning about things seen as mathematical. Having taught secondary mathematics for 10 years, I have experienced this tension myself. It was this experience, and the related learning from community members, that brought me to my doctoral work. My goal was to work toward the development of culturally responsive mathematics curricula with participant schools; however, it soon became evident that a necessary first step would be to investigate the tensions between Mi'kmaw cultural ways of knowing and school-based mathematics.

My research took place in two schools and involved after-school discussions with teachers in the form of *mawikinutimatimk* (coming together to learn together).

This traditional community practice values the contributions of all participants and acknowledges that we each have something to teach and something to learn.

In our conversations, four key areas of concern emerged as themes:

- The need to learn from Mi'kmaw language
- The importance of attending to value differences between Mi'kmaw concepts of mathematics and school-based mathematics
- The importance of attending to ways of learning and knowing
- The significance of making ethnomathematical connections for students

Although interconnected and interdependent, each of these themes can be tied to the need to learn from Mi'kmaw language.

The important role of indigenous language in understanding mathematics was demonstrated by Denny (1981), who used a "learning from language" approach while working with a group of Inuit elders in northern Canada to explore mathematical words in the Inuktitut language. Rather than developing a curriculum and translating it into Inuktitut, they used the Inuktitut mathematical words to develop the curriculum and associated mathematics activities. More recently, Barton (2008) has shared his similar struggles in translating mathematics concepts into the Maori language. He argues that mathematics evolves with language and that

A proper understanding of the link between language and mathematics may be the key to finally throwing off the shadow of imperialism and colonialisation that continues to haunt education for indigenous groups in a modern world of international languages and global curricula. (p 9)

This connection between language and the decolonization of education was certainly evident in my conversations with participants during my doctoral work.

The principal of one of the participant schools arrived at our session one day and told me that I should call my dissertation "Lost in Translation." She proceeded to talk about the difference between *Inuitasi* (our people's ways of thinking) and *aklasiweitasi* (anglophone ways of thinking). Many difficulties arise for children when their ways of thinking come into conflict with the teacher's ways of thinking. Something is lost in the translation of world views, ways of thinking and styles of communication. This principal was seeing conflicts arising daily as the students in her school struggled to find their way through a colonizing curriculum. She was searching

for ways to resolve these challenges. The Mi'kmaw language holds the key to *Inuitasi*.

Three key pieces emerged in our discussion about the role language plays in understanding the link between indigenous knowledges and mathematics. First, there was an expressed need to include more Mi'kmaw language in the mathematics classroom. This group stressed the importance of reclaiming mathematical words and supporting Mi'kmaq-speaking teachers in developing a lexicon of words for use in their classes. Many participants shared their belief that using the Mi'kmaw language as much as possible could only benefit students. Several participants noted how much more responsive their students were when they were asked in Mi'kmaq to complete a task or do more work. One teacher commented on how her students often didn't understand what she meant when she asked "How many?" But, as she noted, "Say *tasikl* (how many—inanimate), and they get it."

Second, there is value in asking questions such as "What's the word for . . .?" or "Is there a word for . . .?" Through raising such questions, we began to gain new insight into the ways of thinking (*Inuitasi*) embedded in the language. It was interesting to discover that certain words that we assume to be understood by children in school-based mathematics perhaps do not even exist in the Mi'kmaw language. *Flat* is one such word. There is no equivalent word in Mi'kmaq, yet *flat* is commonly used in mathematics. When I asked elders in the community how they would describe the bottom of a basket (which is flat based on an anglophone world view), they said, "It is just the bottom of the basket. It's what lets the basket sit still." And when I asked them about a flat tire, I was told that the tire was "out of air." If *flat* has no equivalent word in Mi'kmaq, what happens when *flat* is used in the mathematics classroom, with the assumption that there is a shared understanding of its meaning?

Third, there is a sense of motion embedded in the Mi'kmaw language that is not apparent in school-based mathematics. In Mi'kmaq, shape and space words act as verbs and are dynamic. For example, to describe something that is straight, Mi'kmaq speakers might say *pektaqtek*, which means "from here to there, it pretty much goes straight." This dynamic nature of mathematical ideas comes into conflict with the tendency in school mathematics toward nominalization—turning actions and processes into nouns. Our group wondered what might happen if we drew on the verb-based discourse of Mi'kmaq rather than the noun-based discourse of school mathematics to engage our Mi'kmaw students in the learning of mathematics. Such "verbification" (using verb-based discourse) may provide Mi'kmaw students with

increased understanding of and connection to mathematical concepts.¹

While there is much more work to be done in exploring the connections between Aboriginal languages and indigenous knowledges for mathematics education, this area of investigation certainly seems to be important in supporting the development of culturally responsive mathematics education.

Lisa Lunney Borden

Something unique has happened in Mount Currie, British Columbia. Xit'olacw Community School is proud to be one of the oldest band-operated schools in Canada, and a group of dedicated elders and parents have worked tirelessly to ensure that it is one of the leading schools in First Nation language education. Reclaiming and protecting the language of the community is a priority. The school has one of the few immersion programs in the area, so students can learn and understand St'at'imcets, the Lil'wat language.

A teacher in the Clao7alcw (Raven's Next) program, Terri Williams, invited me into her classroom so that I could model some effective math strategies for teaching young children. It struck me that we should teach the same math program being used in other classes at the school, but translate it into the Lil'wat language. Everyone was excited by the idea, so we contacted the author of the math program, who was supportive of the idea and gave us permission to start translating the Grade 1 books.

This was the start of a language and math adventure. Lois Joseph, team leader of the Lil'wat7ul Culture Centre, used funding received from First Voices to bring elders together for intense discussions about what language would be best for describing mathematical concepts. New language had to be created to describe squares, rectangles, triangles and core patterns—a collaborative, living process of embracing and agreeing on new words that could and should be used.

What was interesting for me was watching the process unfold and observing the respect the elders showed toward each other throughout the discussions. This was and still is a mammoth team effort, and I wish to pay tribute to the team: Mary James, Laverne James, Priscilla Ritchie, Georgina Nelson, Veronica Bikadi, Jean Andrew, Vera Edmunds, Theresa Jones and Dixie Joe. Tanis Grandbois helped capture the data electronically, and Burt Williams is helping to edit the text. We thank Lois Joseph for all her support of the project, and we look forward to seeing other communities following Mount Currie's lead.

Liz Barrett

Nitawahsin-nanni: Learning Mathematics from Place

My colleague and I were asked to come and share at the university. But what stayed with me is, here are the buildings and there's a parking lot. And here are trees that go down to that environment. What struck me is the dissonance in terms of learning. What transformation will take place for the university to acknowledge the place and how tragic that can be. Because we're sitting up there overlooking the harbour, and you have all these ships and all these raw materials that are going to be shipped away somewhere. And how unsustainable that is.

Narcisse Blood

Alberta teachers are now required to infuse the curriculum with Aboriginal perspectives. Over the last two years, I have taken on this challenging but important endeavour in my middle school mathematics classes. I teach in Siksika, Alberta, one of the member nations of the Blackfoot Confederacy. I am of Cree and Irish Canadian descent.

In my classroom, I have observed that silent struggles with identity create the greatest barriers to success among my students. They long deeply to learn more of their proud history and accumulated knowledge, while also being profoundly involved and invested in a global world.

My experience has taught me that teaching from an Aboriginal perspective is best accomplished by focusing on the perspectives of the Siksika people. Because their knowledge has accumulated over the millennia in one place, it is fair to suggest that Blackfoot perspectives arose from their interaction with the land now labelled southern and central Alberta, eastern Saskatchewan and northern Montana. Their knowledge is rich in mathematics. I have come to see my job as a teacher as empowering Siksika students in recognizing their intuitive mathematical abilities. This is partly done by making time in the schedule for learning from place.

Learning from place continues to be a valid and meaningful method of interpreting and understanding the world, including mathematics. As most mathematicians know, mathematics can be found everywhere, and nature is no exception. Therefore, I decided not to rely solely on mathematics textbooks. Instead, we explore mathematics in the world, as well as in the textbook. The two complement each other well. For example, I taught part of both the shape and space units using the spokes, angles and circular geometry of the Majorville Medicine Wheel site. Students

learned the concepts with help from the textbook; then, we explored those concepts through activities at the site and through the creation of models in the classroom.

By visiting sacred sites within the Blackfoot Confederacy and bringing some lessons outside, we soon realized that the land had become a very present third party. When taught outdoors, lessons don't follow the schedule a teacher has carefully planned. Suddenly other factors arise, such as weather, animals and other unexpected guests, and an abundance of student curiosity. This alternative method of teaching mathematics is challenging because it requires a plethora of planning, a field trip budget, an awareness of protocols, support from culturally knowledgeable staff and community members, flexible and supportive administration, and a willingness to relinquish some power and structure in teaching.

How each teacher meets the new goals set out by the province of Alberta will be varied and unique. For me, *infusion* is the wrong term. Teaching from an Aboriginal perspective is simply finding what is meaningful and relevant to students, and what honours the ancestors of the host territory in which teachers live and teach. It means teaching the curriculum and simultaneously addressing silent identity issues by revering the land and the people from which the students have come. This can be accomplished by continuing to find meaning in places and by inviting students to see the world mathematically and intuitively.

Theresa McDonnell

Working alongside my Aboriginal colleagues and friends, I am coming to understand my unique role as a person who can provide bridging experiences between teachers at federally and provincially funded schools. Perhaps this is best illustrated by a story of one such bridging experience.

In my role as a mathematics teacher educator, I have been invited to work in partnership with teachers in several First Nation communities. At one nation high school, we are investigating how learning from place might be enacted. To date, we have taken students on two field trips to sacred Blackfoot sites, including the Big Rock. Located west of Okotoks, Alberta, the Big Rock is the largest glacial erratic in the world and is part of a series of boulders stretching from Utah to Jasper. This site is significant to the Blackfoot community, and the splitting of the Big Rock as a result of the actions of Napi (a supernatural trickster of the Blackfoot peoples) is a familiar story.

On our field trip to the Big Rock, the elder who was with us began with an offering and stories of

Napi. While we were there, elementary students from the Big Rock School, in Okotoks, arrived to investigate the meaning of their school's name. I knew one of the teachers, and once I found out why they were there, I suggested that her students might want to hear the Napi stories being told by the elder. Following protocol, I asked the elder if he could share the stories with them, and he was very excited about doing so. The elementary students were very respectful when listening to him. The principal of Big Rock School wrote an affirming piece about this experience, which was published in a local newspaper.

In this particular situation, my comfort with both federally and provincially funded school communities facilitated a bridging experience. For me, this was a profound experience, as I came to better understand the importance of creating opportunities for sharing knowledge between Aboriginal and non-Aboriginal communities and my possible role in this process.

For me, relating indigenous knowledges and mathematics education is focused on the act of listening. As a non-Aboriginal visitor, I am respectful of protocol, always mindful of my place within this place. Learning from place recognizes the intimate relationship indigenous people have with the land. In our visits to sacred places, the land has spoken to me as I have listened. Stories of place have grounded our visits, and our response to knowing the land has informed our acts. Carbaugh (1999) describes listening as "dwelling-in-place." He suggests that Blackfoot listening is a "highly reflective and revelatory mode of communication that can open one to the mysteries of unity between the physical and spiritual, to the relationships between natural and human forms, and to the intimate links between places and persons" (p 250). Through the stories told to us by cultural elders, I am learning to dwell-in-place.

Gladys Sterenberg

Relationship—Responsibility— Recursion

Really, what it is for my people, and I think all of us—and sometimes we forget—really, what it is all about is this relationship. Ultimately, that's who we are. It's relationship. If you want to learn about the Blackfoot, it's about relationship and relationship and relationship. About everything. Those that we see, and those that we don't see. So with that, I'm starting to get to know a lot of you. It's good to see you. And that's important. In our world, we don't take that for granted.

Narcisse Blood

"Florence, ohmigosh, this is FOIL! Why didn't anyone ever tell me that there was a relationship? I knew how to multiply, but I could never figure out FOIL!" These were the words of Cindy, a student in a mathematics education class for preservice elementary teachers, seven years ago. Cindy and her peers had been exploring the underlying concepts behind the multiplication of two two-digit numbers. In Cindy's work with base-10 blocks and the subsequent numerical representations, she came to realize that the multiplication of two two-digit numbers is the distributive property of multiplication, or FOIL (first, outside, inside, last). I now hold Cindy's words with me in my teaching and learning, and have held her words as I've come to know and acknowledge myself as an Aboriginal person in teaching mathematics.

When I consider Aboriginal perspectives in the mathematics classroom, I think about the importance of relationship. In my experiences as an Aboriginal person, I've come to understand the importance of acknowledging relationships in all aspects of life. For example, we have a relationship with the land (some call it Mother Earth) as we draw sustenance from it, and once we acknowledge our relationship with the land, we then have a responsibility to sustain that relationship and sustain the land. A second example is our relationships with our family: we draw sustenance from our family, and when we acknowledge that we draw sustenance from our relationship with family, then we also have a responsibility to sustain that relationship and sustain the family. Once we acknowledge the relationships we have with the land and with our family, and act on our responsibility as being a part of that relationship, then our relationship is now different from how it was. Hence, we are in a continuous cycle of acknowledging relationship, acting on our responsibility, and reliving or retelling the relationship (recursion).

What does this mean for a mathematics education class? Most of my teaching now involves teaching preservice teachers about what it means to teach mathematics. The planning work I do in my classes focuses on this notion of relationship-responsibility-recursion. In a classroom, there are multiple perspectives on relationship that a mathematics teacher holds in his or her practices. Teachers have relationships with mathematics; with their own experiences in learning mathematics; with their colleagues in the school; with the community in which the school resides; with their view about what it means to learn, to teach and, specifically, to teach and learn mathematics; with their family; with their students; and with themselves. I also believe that a teacher must

acknowledge that within each of these relationships are other relationships that can be named. For example, within the relationship one has with mathematics, one might be aware that there are relationships within the content of mathematics itself.

My development as a mathematics teacher and a mathematics teacher educator, then, becomes a life-long journey, as I will continue to come to know about the multiple relationships that exist within my classroom and will continue to have multiple responsibilities. In other words, as I attend to or notice (Mason 2002) the complexity and the responsibility of the relationships that exist in my classroom, my teaching continues to focus on sustaining relationships. My life as a teacher, then, is a series of recursive acts in sustaining relationships.

What might be an example? Suppose I am teaching about the multiplication of two binomials in a Grade 9 or 10 mathematics class. To focus on relationship, I might ask myself the following questions:

- How is it that I understand the multiplication of two binomials?
- In what way is the multiplication of two binomials related to the multiplication of two two-digit numbers?
- How can I invite my students to see that relationship?
- What were my experiences in learning about the multiplication of two binomials? How have those experiences informed my understanding?
- How does learning the multiplication of two binomials contribute to my students' deeper understanding of mathematical ideas?
- In what way will my actions as a teacher in teaching about the multiplication of two binomials sustain my relationship with my students? In what way will they sustain the relationship my students are developing with mathematics?
- In what way does how I see myself as a learner of mathematics influence the decisions I make as a teacher of mathematics and the tasks I ask my students to engage in while learning about the multiplication of two binomials?
- How do I share my understanding of the relationships within mathematics with my students in a way that sustains the relationship I have with them?
- How do I share my understanding of the relationship between the multiplication of two binomials and other areas of mathematics with my colleagues?
- How do I participate in the development of a shared understanding of these mathematical ideas within the community in which I teach?

In this way, mathematics teachers might begin to focus on the relationships between or the interconnectedness of our content, our lives as teachers, the lives of our students and the context in which we teach. Bopp et al (1988, 62) write that “the great lesson of the sacred circle is always that separate entities, when seen in light of the universe, are equal and necessary parts of the larger whole. It brings out the ancient teaching of the interconnectedness of all things.”

Florence Glanfield

Conclusion

Colonization was an intentional act. If we try to convince our students that the only mathematics that exists and is worth studying has its roots in Euro-Western traditions, then we are engaged in such an intentional act. By honouring multiple perspectives on mathematical thinking and knowing, we can come to know mathematics and ourselves in a different way.

The WNCPC's (2006) common curriculum framework for K–9 mathematics states that “the strategies used must go beyond the incidental inclusion of topics and objects unique to a culture or region, and strive to achieve higher levels of multicultural education.” While we agree that token gestures of inclusion are inappropriate, we believe that relating indigenous knowledges and mathematics education is context-specific. Multiple perspectives are necessary and embraced. Moreover, any project must be initiated by the community.

At the end of our time together at CMEF, we were left with many questions: How do we teach in ways that are responsive to students and that challenge systemic inequities? How do we invite others to think with us in similar kinds of critical reflexive research? How do we engage in our own decolonizing? In this article, we have shared our stories and challenged others and ourselves with our questions. As we reflect on our experiences within this working group, we contemplate the next steps to be taken and invite others to walk alongside us as we attempt to live our lives differently.

Take our stories. They're yours. Do with them what you will. Use them in your planning. Tell them to other educators. Forget them. But don't say in the years to come that you would have lived your life differently if only you had heard our stories. You've heard them now.²

Notes

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1. See Lunney Borden (2009) for a more detailed discussion.

2. Adapted from the words of Thomas King (2003, 151):

Take it. It's yours. Do with it what you will. Tell it to your children. Turn it into a play. Forget it. But don't say in the years to come that you would have lived your life differently if only you had heard this story.

You've heard it now.

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Narcisse Blood (Ki'naksaapo'p, Iitsitssko'pa) was a coordinator of the Kainai studies program at Red Crow Community College, and has been recognized as an Eminent Scholar (KPhD) by the college. He currently teaches in the Kainai studies program, Department of Education, University of Lethbridge, and in the International Indigenous Studies Department, University of Calgary. Narcisse has served as chair of the Mookaakin Cultural and Heritage Foundation of the Blood Tribe and on the Blood Tribe Chief and Council.

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