

SHARING SPACE WITH THE OTHER TO DISCUSS MATHEMATICS EDUCATION AND SOCIAL JUSTICE

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The four of us recently attended a mathematics education conference working group on the theme of social justice [1]. There were 19 participants from six different countries (Brazil, Canada, Haiti, Jamaica, South Africa & Tanzania) and we were organised into four small groups. We met for three consecutive mornings. The focus of the discussions, facilitated by David Guillemette and Cynthia Nicol, was on learning to meet “the other” in the mathematics classroom. Given the diversity of individuals in the group, however, it became clear to us that participants first needed to work on learning to meet “the other” in the working group. This article is a reflection, drawing on our experiences of being in the working group, on how tolerance of the other, while important for social justice, is not sufficient. Our experiences of the working group leads us to argue that to achieve social justice we also need to accept the other, honour their voices and create authentic relationships.

Sean: In attending the working group, I had hoped to learn as much as I could about the implementation of social justice for/of/with mathematics. I had recently published two papers and given a plenary at a conference on the topic. I interpreted social justice as being a significant part of my local curriculum and my overall purpose in the working group was to share and learn about how others engaged with social justice and mathematics. In particular, my reading of social justice was informed by Skovsmose’s (2016) critical mathematics. But if social justice is seen as a set of principles or a list of propositions, one may miss the social justice in its didactic and dynamic form. Social justice, in its very essence is an experiment of authentic relationships: an encounter with an other.

Tanya: Positioning mathematics with respect to inclusion of social justice issues can be a powerful entry point for authentic application of mathematics for learners. I once facilitated Canadian grade 11 students through a social justice task outlined in Gutstein and Peterson’s (2005) *Rethinking Mathematics*. Prior to introducing this topic, the students practiced textbook optimization problems that directly guided them through the successful construction of mathematical models. The social justice task solicited the creation of a mathematical model for optimization of profit within the context of Indonesian sweatshops. I was disappointed when students did not see beyond the mathematics and did not acknowledge any injustice. Had they been

indoctrinated to only look for the mathematics? How can mathematics and social justice issues co-exist within the mathematics classroom? Is part of the training to avoid contextual aspects in the name of being a “good mathematician”? How has mathematics contributed to these issues?

Robyn: I decided to join the social justice working group because I wondered about mathematics (education), space, and the intersection of mathematics (education) and space with the other. What is space for social justice and how can we create inclusive space for the other in mathematics (education)? I also wondered about my own space as a teacher and researcher in mathematics education and my personal intersections with the other through mathematics.

Mamokgethi: I have attended many working groups on mathematics education and society or social justice and diversity and I have found many of them focused on theory and not much on what the theories mean for practice. We need to discuss issues of practice. This is because lately I feel desperate. The levels of poverty and inequality are too high and the increasing anger of marginalised people everywhere in the world is visible in the magnitude of protest action and violence that has grasped our attention. I feel much closer to the fire as a black African woman university executive in South Africa. Students are questioning the validity and relevance of education—what is taught and how it is taught—and are calling for the decolonisation of knowledge. My view is that we do not have the luxury of time, and so we need to ask difficult questions about ourselves, our discipline and our world.

Tanya: My participation in the working group was clouded with a recurrent feeling of myself as the “other”. My frustration was perpetuated through the broad gap I perceived between my own needs and those of my colleagues. By birth, I inherit some of the “white man’s burden” which frames a narrative of the “white, middle class, Canadian female” as being distant from the critical issues underpinning social justice. Social justice in a Canadian high school mathematics classroom is situated in a unique context when compared with a mathematics classroom in South Africa, or one in the United States, where visible social justice issues may dominate. Initially, I conjectured my hesitation to participate was the natural reaction of a newcomer to the mathematics education community, seeing myself as other, self-excluding myself as other. It was not until my experi-

ence in the working group that my perceptions shifted, as it became clear that all participants were *others*.

Sean: If I reflect on how studying mathematics has influenced me, I notice that it has taught me to be efficient and goal-oriented. I value these approaches, and, at times, they serve me well. However, at other times they cause me to be unaware of difference and in prolonged and wayward approaches, I get restless. In the social justice working group I was very restless.

One of the problems with seeing social justice as a set of principles, or as something that can be put into practice is that it sets up a desire to see a result or an outcome. This kind of thinking is prevalent in Western thinking and can support the idea that, through study, one might come closer to the truth. But in this case, an expectation of such a goal did not come to fruition and in fact was not helpful (at least not at first). I had expectations of the group and of myself: we needed to be efficient and thoughtful and get as much done as possible in the three short meetings we had.

Tanya: The complexity of the relationship between mathematics and social justice seems incompatible with an elegant linear argument. During the working group, several mathematicians and mathematics educators tentatively asked, "Where is the mathematics?" Attending social justice working groups grounded in mathematics, where professional mathematicians in the room were nervous and apologetic about asking directly about the mathematics, felt ironic. This tension inherent in the search for the best way to connect mathematics with social justice might require viewing *mathematics* as the other. Consider why mathematics is not a natural tool for students; perhaps mathematics is the other in the student narrative. Mathematics educators could explore ways to write mathematics into the student narrative.

Sean: My goal of drawing together mathematics and social justice was echoed by others. Questions such as "Where's the math?" were raised, but other voices prevailed and the connection between mathematics and social justice was not explored. Instead, and ironically, the conversation engaged in discussing terms like *tolerance* and *empathy*.

Tanya: There is a recursive phenomenon I notice with respect to conversations of social justice in the mathematics education community. During the working group, this tendency manifested itself through attempts to simplify and define the terms of *tolerance* and *acceptance* each having inherent variability. A conversation with Munir Fasheh last year, during which he offered the term *dignity of the soul* as the central goal of social justice, quieted my own struggle to develop shared, logical explanations and definitions for tolerance and acceptance. The defining of variables and working with simplified terms seems a comfortable place for mathematicians and mathematics educators. Important for me is an assurance that the variables can be defined for each person individually. In this way, both visible and invisible diversity may be valued.

Mamokgethi: Tolerance suggests a relationship that is neither equal nor reciprocal: those who tolerate have power and superiority over those who are tolerated. Tolerance is forced action and, in the context of social justice, it suggests that the privileged are granting the marginalised undeserved favour,

which they can withdraw at any time. I argue that acceptance, understanding, respect and appreciation are more relevant words to use because they point to voluntary action that recognises the other's right to be who they are in the shared space. Someone in the working group proposed using the word *consciousness*, which challenges all of us to ask the difficult question that says, "how can I live my life in a way that acknowledges that I have this privileged life because of other people's disadvantage." This focus on critiquing how we use language did not sit comfortably with Sean, in particular, who expressed his displeasure.

Sean: To discuss what words mean and/or to propose "better" words in a large group did not seem to be an efficient discussion. My suggestions to move back to mathematical approaches, however, were shut down and I, to be perfectly honest, was frustrated. What was interesting was that there was a strong tension in the room. A tension which made some, including me, feel uncomfortable.

Mamokgethi: Like me, Sean is more interested in action rather than just talk. Our disagreement, however, put us on opposite ends of the argument. While I wanted to deal with the use of the word *tolerance* as part of what diversity and social justice is about, Sean was more concerned about making the most of the limited time we had and, in his view, focusing on the language we are using in our discussions was not good use of time. While Sean wanted us to make progress by moving on to what needs to be done, I wanted us to be clear about how we use language because in my view that is an important part of understanding diversity and social justice. After all, language is not benign, it is political. The choices we make with regard to how we use language and expression in our conversations about social justice and diversity indicate how we position the other in what we regard as "our space". As Gee (2005) explains, "Language has a magical property", because when we speak or write we create the situation but the situation also influences us in terms of how we speak. We use language every day to build aspects of reality. Even if it's not intentionally or rationally thought out, we have habits by which we use language to manage our lives, to show interest, to exclude or include others, to comply, to ingratiate ourselves into social situations, *etc.* Hence my insistence on dealing with the language we use and how we use it.

Sean: On the second morning, I rearticulated the circularity of our discussion, only to be quieted. In fact, the response to my suggestion was antagonistic. It was an uncomfortable position to be sure. I tried to relieve the tension by trying to make peace but to no avail. I waited out the second day.

Mamokgethi: On the second morning, we read a paper by Fasheh (2015), in which he expresses his greatest worry about those who are driven by good intentions but unwittingly perpetuate the oppression of the marginalised. He explains that the best lesson he gives when teaching the disenfranchised is:

not to feel less in the face of high-sounding titles and arrogant attitudes. Anyone who comes with the intention to help you change, I would recommend you ask him to leave or you yourself leave. Any help that is not reciprocal is demeaning. (p. 43)

This paragraph became a point of disagreement, with some people disagreeing with Fasheh, while I expressed my agreement. My support for Fasheh's argument is based on the understanding that simply because people are poor it doesn't mean they should remain subordinate to us. Reciprocity is important and it starts with the realization that our intervention in other people's desperate situations is not just about them but also about us; in helping them we are also helping ourselves. So we have to treat the other as an equal, rather than want to make them change or be like us. If relationships are reciprocal, then working with the other should change us as much as it changes them and we should be open to this also changing the power relations. We cannot get into the situation to change others while we remain the same, because that will be oppression of the other.

By the end of day two Sean and I were clearly on opposite sides and the working group was clearly polarized. Sean and I were getting frustrated and while I continued to express my views passionately, Sean, in my observation, became more withdrawn. There was tension in the room and a few people withdrew from the whole discussion. I was sure that if Sean and I resolved the matter then it would be resolved for everyone. Unfortunately I could not find an opportunity when Sean was alone and so the second day ended with tension.

Robyn: My initial wonderings were influenced by notions of space. Two common ways to think about space are as "gaps between things, as it were, keep them apart" or as a "larger container into which all things are inserted" (West-Pavlov, 2009, p. 15). Both ways of thinking about space have the effect of othering another. The first way of thinking about space creates a duality between the two sides of a gap: I am either on one side of a space or another. Therefore whoever is on the opposite side to mine becomes the "other" in relation to my position. The second way of thinking about space as one large enveloping container, creates the illusion of unity by way of equality while still constructing the other. But these two conceptualizations of space leave little room for the type of social justice I would like to be a part of as a researcher and teacher.

I wondered whether in my role as a researcher and teacher I could create a larger mathematical container that would allow access to everyone. And underlying my wonder was a fear. I feared entering a space belonging to the other and having my space envelop the space of the other. I am not alone: these ideas about space underlie some pertinent topics in mathematics education—research topics such as "achievement gaps" (gaps between things) and "opportunity to learn" (enveloping container). These conceptions of space were also present in our larger and smaller group discussions as well. There were a number of instances where people spoke about explicitly responding to a difference in the space of the room or a feeling that ideas that did not fit into the group's "container" were being rejected.

Sean: On the third morning, there was movement. There was a change of seating arrangement instigated by Mamokgethi and an outward attempt at reconciliation. The initial few words between Mamokgethi and myself were tense and awkward. On the surface, the conversation was superficial but it was an encounter. I admitted my challenges

and acknowledged the action of the other. In this act, I came to realize all that had happened was necessary. It was a special moment, one of vulnerability.

Robyn: The third day of our working group was a pivotal experience for me. On the third day, Sean was no longer to my left, instead he was to my right. Mamokgethi, no longer across the room, was now inhabiting Sean's previous space to my left, and Tanya seemed to inhabit the same space. On that third day, the movement of bodies within space had changed—but what had really changed?

Mamokgethi: On the third morning, the last day of the working group, I decided to join Sean's small group. I thought that being closer to him would make him realize that while we do not agree on the finer detail, we actually agree on the big idea of mathematics education for social justice. So I went to the room about five minutes before the starting time and occupied the seat that he had been occupying the past two days. People were surprised to find that I had changed groups. There were a few who did not support my move and wanted me to move back to my group. Then Sean walked in and I was happy that he came straight to the table and sat right next to me. I made the first move: I leaned forward to shake Sean by the hand and introduce myself; he returned the favour. That broke the ice and what happened from then on was positive body language, as well as recognition and affirmation of each other's ideas and thinking. While Sean and I were warming up to each other, there was a different kind of tension developing in the room, expressed by one of the members of the small group I had been working with for the previous two days. She said, "It doesn't feel safe anymore". So after the tea break, the working group leaders created an opportunity for reflection by each one of us and that is when we told our stories.

Sean: There are no short cuts to an encounter. One has to be honest with oneself and others and one has to be authentic. To engage with people, particularly those who share a different set of cultural sensibilities, as well as individual sensitivities, is not about implementing an agenda. In particular, a social justice approach interacting with people begins with relationships and establishment of connections. Little did I know at the time that the mathematics I was longing for was only available to me through a connection with the people in the working group. Without an authentic connection and understanding of others there is no new place that can be explored. An encounter demands time, investment of energy, openness and a commitment to others; it is not an attempt to construe, to manipulate or even to extract meaning. It is to live in the materiality of the moment (Ingold, 2011). Mathematics is so often framed as a linear, efficient and a progressive model that to engage in other forms of relations can often seem frustrating.

Robyn: This moment brought all my ideas about space, the other and change together. Physical spaces had changed, but it was what happened after the physical change of spaces that brought me to my new understandings. Mamokgethi made a very public explanation as to why she purposefully orchestrated a spatial change within our small group and how she did not receive the response she expected. Mamokgethi's intentions were not aimed at me, they were aimed at Sean. There surely was an intimate struggle of

ideas between Sean and Mamokgethi, but I was suddenly propelled into experiencing that space of tension. For me, space metamorphosed from an idea of gaps and containers to something experiential, social, and full of tension. Together we had experienced a space: brought together by some common goals or understandings, we still remained an other in some way. The realization that I, an other, and they, also others, actively created a space, together, while still remaining others, was a powerful experience in social justice and change.

Tanya: My ideas about the complexity of social justice and my mathematical habit of simplification coalesce in a dichotomous personal narrative. This dichotomy constrains my own ability to participate in a common dialogue. My narrative is a barrier to making space for interactions with colleagues, reflected within this conversation as a lack of connection with the *others'* work. After deep consideration, I am left where I began. I depart with the same uneasy feeling with which I commenced, but I am now aware that moving social justice forward into invisibly diverse Canadian mathematics classrooms requires a change to my own narrative about my participation. This conversation is my first step into this new narrative.

Mamokgethi: Talking about and dealing with issues of social justice and diversity is no easy task. For those of us who are much closer to the fire, it is not just about creating a better future for our students, but also about our own freedom and a possibility to reimagine the world. There is definitely no comfort in dealing with issues of social justice and diversity and we do not have the luxury of time.

Sean: What I notice now is that I entered the group as an “I” and not as a “we”. Growth and change, however, are based in the “we”, for knowledge is a co-construction with others. We teach relationships, not mathematics. If we accept the social dimension of learning and the social construction of the discipline of mathematics, and highlight the relationships that include communication, collaboration, negotiation and justification, we may see the social and the relational as being first and foremost aspects of learning mathematics (not to mention the relational qualities of mathematics itself). I wonder how much this experience communicates about mathematics as a discipline. Mathematics as a subject in and of itself is an on-going event and not something pieced together. Can one do mathematics

without establishing an authentic relational connection with the people one is working with? Can there be content without relationships?

Conclusion

We do not advocate for a linear progression of understanding in our contributions. Social justice is neither content nor a trajectory toward an ideal, or even a context in which to point. For us, social justice is a coming together in our awkward ways, with all our interests, hopes and needs, with an openness and willingness to connect with others. In this way, we are always in the process of becoming. It is this approach that causes us to use the term recursive as opposed to linear. Recursivity does not encompass a direction but a continued re-experiencing of relationships. The lessons learned have been learned before, but re-emerge in new framings and these experiences will continue into the future.

We are each an other to others, so to think we can epitomize a general way of being that is efficient or direct is to misunderstand the notion of an authentic relationship. For authenticity is grounded in difference, not similarity. There are no generalities in connecting with others. Social justice is a becoming with others. Or at least this is the first step.

Notes

[1] The working group on Mathematics Education and Social Justice was part of the 2016 annual meeting of the Canadian Mathematics Education Study Group (CMESG), held at Queens University, Kingston, Ontario, Canada. The working group was led by David Guillemette and Cynthia Nicol (see the accompanying set of communications on pp. 38 - 45).

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There is neither a first nor a last word and there are no limits to the dialogic context (it extends into the boundless past and the boundless future). Even past meanings, that is, those born in the dialogue of past centuries, can never be stable (finalized, ended once and for all)—they will always change (be renewed) in the process of subsequent, future development of the dialogue.

Bakhtin, M. M. (1986) *Speech Genres and Other Late Essays*, p. 170. Austin, TX: University of Texas Press
