

Communications

Necessitating teacher learning in teaching mathematics for social justice to counter anti-Black racism

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Martin (2019) notes that “the current system of mathematics education must be replaced by a new system that allows Black people to flourish in their humanity, free from antiblackness” (p. 473). This call to action resonates with the global protests following the death of George Floyd in the United States. In this commentary, at this important moment in our global history, I want to offer some thoughts and concerns I have in order to avoid teaching and learning mathematics for social justice (TLMSJ) becoming yet another ‘slogan system’ (Apple, 1992) and reform effort in mathematics education that yields no meaningful change. I argue the current focus of TLMSJ does not go far enough, as others have suggested (e.g. Larnell, Bullock & Jett, 2016). In this commentary, situated specifically in racialized contexts, I focus my argument on the grounds that TLMSJ should be expanded to push for a shift in TLMSJ to working *with* students, teachers of other school subjects, and community members because to really do TLMSJ meaningfully, mathematics teachers have to become a part of the community and listen to the voices of those *from* the community.

What is TLMSJ?

TLMSJ has taken on different definitions but I focus on that offered by US scholar Rico Gutstein (2003). Gutstein, whose work draws on that of Paulo Freire and Marilyn Frankenstein (1983) contends that young people should be enabled to use mathematics to read and write their world. Essentially, TLMSJ has three goals, “helping students develop sociopolitical consciousness, a sense of agency, and positive and cultural identities” (Gutstein, 2003, p. 40). TLMSJ’s enactment has focused largely on teachers posing questions or a more involved project that center a social injustice topic by which students might further read and write their world. The theory of change therefore suggests that through these projects, marginalized students would be able to better understand the injustices they face and make a plan to effect change. What often occurs though are cookie-cutter projects that are inauthentic and largely do not derive from an actual issue within the community. As Larnell, Bullock and Jett put it, TLMSJ should be “more than just a collection of curricular tasks” (2016, p. 27).

More recently, Gutstein (2016) re-visits the possibilities and challenges of TLMSJ and calls on “teachers and teacher educators [to] cultivate critical knowledge, sociopolitical consciousness, and dispositions. If we want students [...] to develop critical perspectives on reality, we have to do the same” (pp. 491–492). How then can we ensure that teachers are intentional in developing their own critical perspectives and consciousness—particularly teachers from the dominant racial group? In literature, the focus has tended to be on the teaching done by the teacher and not the learning by the teacher. In this short commentary, I suggest some ways teachers can make their own learning visible to their students.

Why TLMSJ?

Mathematics is a politically charged subject given the status it is assigned in most societies. Against the widespread view of mathematics as neutral, scholars have documented the status of mathematics as a largely white, Eurocentric space (see, e.g., Valoyes-Chávez & Martin, 2016). TLMSJ therefore aims to counter this notion by usurping the mathematical space and cultivating critical consciousness especially amongst young people. However, TLMSJ runs into conflict when the teachers doing this work attempt what I name ‘TLMSJ lite’ because they themselves are unaware of the full scale of issues to be unpacked with their students.

TLMSJ *with* students

More often than not, TLMSJ has focused on how teachers or teacher-researchers enact TLMSJ in mostly formal school spaces. However, if one goal of TLMSJ is to enable students to have agency within the mathematics space (and out of it), then the process of creating the social justice math project should also be collaborative. For instance, Gutstein (2016) engaged in a participatory approach in his teaching, because TLMSJ, like other forms of decolonizing pedagogy, should be relational (Chilisa, 2012; Patel, 2015). In TLMSJ, we need to foreground that “teachers and students need to learn—together— how to navigate change” (Gutstein, 2016, p. 487) in participatory and relational ways.

To avoid TLMSJ lite, it would be wise to heed Frankenstein’s (1983) words that “emancipatory content presented in a non-liberatory way reduces critical insights to empty words which cannot challenge students’ taken-for-granted reality and cannot inspire commitment to radical change” (p. 320). Thus, enacting TLMSJ in ways that centers the teacher as the sole voice diminishes TLMSJ’s goals. Furthermore, doing TLMSJ authentically with students demands a level of vulnerability. Doing this allows teachers to be ‘worthy witnesses’ (Winn & Ublies, 2011) to students instead of positioning students as “parking lots for emotionality” (Patel, 2016, p. 83). Given that the large majority of the teaching workforce in racialized spaces are white (Miller, 2016; Geiger, 2018), it is imperative that math teachers consider that they might inadvertently harm marginalized and minoritized students when they purport that being anti-Black in mathematics education means only using mathematics projects to highlight injustice.

Doing TLMSJ *with* students allows mathematics teachers to re-envision the end goals of TLMSJ that centers the

student's own imaginings. In my research with Sub-Saharan African youth (Osibodu, 2020), I found that working with them resulted in a new understanding of what they saw as the goal of TLMSJ in their contexts. In their Sub-Saharan contexts where local and indigenous knowledges had been decimated and devalued, they believed starting from a place of using school mathematics to understand a social issue was not sufficient. Instead, they wanted to highlight indigenous practices that could be brought into mathematics spaces both to make math more relevant but more importantly, to teach young people about their own histories. Though this shift in how the youth saw the role of TLMSJ came into conflict with my own understandings, I honored their perspective and supported their research. I noticed that they were turning away from a trauma-filled focus that inherently focuses on the perpetrator to a focus on honoring their communities.

TLMSJ with teachers of other disciplines

Social justice issues are complex and often require taking an intersectional lens to fully understand said complexities. Consider, for instance, if students in a mathematics classroom in Johannesburg want to study the dearth of Black-owned wineries in South Africa. While the students can use mathematics to contextualize the data, understanding the lack of Black-owned wineries would be better served if they can understand the historical context paired with the geography and economics of the wine industry. Therefore, expanding TLMSJ outside of the mathematics space, and even further outside STEM, would push TLMSJ closer to its intended goal.

Of course, this will necessarily upend the ways that school mathematics is organized but is this not worth the end goal? Limiting explorations of social justice to mathematics classes only runs the danger of proliferating the idea that quantifying issues is the best way to understand an issue. I would argue that this is just one way but understanding the full complexities of issues by providing full stories raises students' critical consciousness. TLMSJ must necessarily go beyond the mathematics context to engage the complex web of racial injustices that have been embedded in racialized societies since white 'settler colonialism' (Tuck & Yang, 2012) began.

TLMSJ with community members

I have discussed the necessity for teachers to do TLMSJ with students, with teachers of other disciplines, and in this last section, for teachers to do TLMSJ with community members. It is important to recognize that expertise does not lie in formal education spaces alone. Moreover, in the fight for racial justice, community organizations such as Black Lives Matter have made important strides towards justice.

TLMSJ is a way of being that requires teachers to continually focus on being expansive and reflexive as they grow in their understanding and mission of social justice. A challenge offered by scholars asserted that for TLMSJ to be done well, teachers need to be grounded in political activism in their communities (Frankenstein, 1983; Gutstein, 2016). This type of knowledge is not grounded in any conceptualization of teacher knowledge (e.g. mathematics knowledge

for teaching or pedagogical content knowledge) in mathematics education. Some scholars, like Gutstein, have acknowledged being activists in their communities, which allowed them to have a knowledge base that could be brought into this work. Thus, it is necessary for mathematics teachers to not only develop deep knowledge of the historical and cultural social movements in their communities but to also be part of the current movements for justice within their local communities as well.

This assertion implies that TLMSJ would be highly ineffective if teachers do not have any inclination to learn about social and political activism in their communities. Even James Baldwin (1963) spoke of the importance of citizens being politically active to really enact positive social change in society. If teachers are going to do this important work, they must be fully committed in and outside of classrooms to dismantle injustice and inequity in society by naming injustice in their classrooms and by advocating for their students, particularly students of color within and outside of their schools.

Concluding remarks

The global (re)focus on anti-Blackness has increased awareness within some white mathematics teachers to engage in TLMSJ. I call on these teachers to do much needed learning. Moreover, I challenge them to approach social issues in their mathematics classroom not as a space for simply teaching their Black students about injustices they are likely aware of, but about engaging in larger discussions about the embedded thread of these injustices to larger societal issues. I bring this issue forward because I want to ensure that TLMSJ does not become another opportunity for white teachers to 'feel good' about the work they are doing without truly recognizing that fighting for justice is a lifelong pursuit marked by small, yet meaningful, changes. We need mathematics teachers willing to fight for justice within their mathematics classrooms and outside of it. Moreover, mathematics teachers should consider if they are bordering on voyeurism when putting Black pain at the forefront (Patel, 2016)—Black pain that has been lived by the Black students in their classroom prior to this moment in our global history. Thus, mathematics teachers must necessarily learn to unlearn in order to relearn what it really means to fight for and normalize social justice particularly in the context of anti-Blackness.

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Twenty years on: revisiting David Wheeler

DAVID PIMM

Twenty years ago, I edited 21(2), an issue “dedicated to the memory of David Wheeler” (p. 3). Periodically, I still feel an acute sense of his absence and engage in re-entering memories, retelling tales, re-reading articles (both by him and about him, such as Lesley Lee’s in 21(2)).

As I myself am getting very close to (re-)retirement later this year, over the past few weeks I have been going through forty years of records, documents and papers. Among the things I came across were a decade and a half of letters and emails between David and Dick Tahta, along with David’s editorial letters to me about my first two published academic articles—in 1(3) and 3(1). I shall return to both of these things shortly.

As a result of us all endlessly getting older, there is perhaps a greater awareness of the field of mathematics education itself prolonging, changing and ageing. Our field has only really begun to develop in detail since after the end of the second world war. There are certainly a considerably greater number of significant figures who are now no longer working in the field or even alive. A subsequent and specific consequence of being another twenty years on is far fewer people will have ever met Wheeler himself or, in particular, encountered the magnificent letters that he endlessly wrote. His published academic writing, though important and highly engaging, was not that extensive. But I believe his presence among those who did know him was both abundant and profound.

Born in 1925, a couple of years younger than my father, before moving to teach at university, Wheeler taught mathe-

matics in a secondary school in Willesden (in NW London), less than a mile from where I grew up as a child (though he never taught me there, but I learned a huge amount from him subsequently). David had a really strong intellectual-social presence (a significant hybrid) as a person. And, on more than a few occasions, he was an unquestionable gossip.

The final fifteen years of letters between David and Dick was a striking juxtaposition of the personal and the academic, the private and the cultural, about Gattegno and FLM, music and philosophy, diverse interactions and challenges between such close friends who had worked together for decades and had significant differences that were highly present. In one small instance, David wrote to Dick:

What I think you ought to be doing, instead of midwifing other writers into publishable form, is to start on a project of showing all of us what a history of mathematics as a history of awareness would be like. Of course you wouldn’t complete it, but you could write some case studies.

Dick was unable to be at the memorial event for David held at CMESG in May 2001, but wrote me a short email to read out. Here is an excerpt:

I have been enjoying the thought of what David would have written to me about the things people may be saying about him at this CMESG meeting.

He would have squirmed. And be secretly pleased.

I am reminded of a time when he wrote that he preferred my having called him admirable to an occasion when I had said that he was lovable. But I think he was also secretly pleased to know that people found him lovable. As he was.

Sean Chorney, a friend and colleague at SFU, was taught in his master’s degree by Wheeler in 1996, when David engaged in post-retirement work for a couple of years at Simon Fraser University, having moved to British Columbia after working for fifteen at Concordia University in Montréal. Last year, Sean wrote about David’s teaching and commenting in a piece that will appear in FLM Monograph 2, to be published later this year, and he drew significantly on copies of David’s feedback comments to his student submissions. David always commented on his world, at length and in detail, both intellectually and personally. It was also good to see Wheeler’s handwriting once again.

Below are some extracts from a letter I received from David in his role of FLM Editor, dated February 4th, 1981. It is extensive (some 1500 words), and I thought I would include some parts of it here, both for its content, but also as an example of his manner of letter-writing.

Dear David,

I would be delighted to have something cogently sniffy about Skemp *et al.*’s ruminations on “understanding”. However, I think it is quite a tough question to tackle and it *may* be one that you shouldn’t rush into (where angels fear, etc). I guess the main thing *I* would throw at them is the question of whether a taxonomy of understandings can actually be achieved, and if it can, what

use this is. It seems to me that they don't stop at classifying understandings, but immediately make inferences about how "desirable" understandings can be produced. At that moment they fall a-over-t into the assumption that understanding is a (known) function of ways of teaching mathematics. [...]

However (and I'm just thinking this out so I don't know whether I've got it right yet) the main point about the need for an appropriate epistemology of mathematics is a big one and worth writing on. (Do you know, by the way, Gattegno's article "Notes on a new epistemology: teaching and education" (Math Teaching 50)?)

One further little gloss—I'm a little apprehensive that the word "meaning" if not kept in check will acquire all the grandiose fuzziness of "understanding". My main tenet would be that neither word should be called on unless there is *absolutely* no other word that will do for what one wants to say. [...]

I wanted to argue with parts of your article, which is always a good sign [...]. Please take all that follows as personal comment, not in any sense implicitly instructions as to what to change. In fact, I'd take it "as is", but I just want you to have a chance to revise again *If* you want to. [...] For my own thinking, and conscious that any structuring loses something, I find myself thinking of the different things that history and philosophy can bring to us, and then of the different roles that we may play. To take the latter first, it seems to me that history (to confine myself to that) is useful to the mathematician, to the teacher, and to the student. The most difficult question here, I think, is (fairly precisely) what we might expect history to do for the student who is learning mathematics (and I am mainly thinking of high school students rather than undergraduates). Perhaps we can't answer that until we have looked at what history can do for the teacher; but I don't think we can leave on the individual teacher's shoulders the responsibility for deciding entirely what he will attempt to pass on to the student. However, I honestly don't think we (you, me, anybody) are ready for that problem yet. [Forty years on, has this changed?] I raise it mainly for its negative value—that we shouldn't automatically assume that what might be "good" for the teacher is necessarily "good" for the student. (In some ways I find a tentative analogy with the musician composer who learns classical harmony and fugue composition only to forget it—but the "forgetting" allows for a permeation of his way of looking at music *and* gives him some boundaries to rebel against. Perhaps the teacher should learn history and then when in the classroom "forget it".)

He then gives three instances in response to his asking 'What *does* history of mathematics teach us?'

- (1) That mathematics comes to use from people working in a social context. [...]
- (2) By looking at a span of mathematical creativity one gets some idea of the overall methodology (and philosophy), what proves to be acceptable and what

comes to be questioned (I like your stuff on this). [...] One sees that the axiomatic method is but one methodology—powerful and generative in the hands of Euclid and Bourbaki, say, but sterile as a dogma.

- (3) History shows up certain difficulties in mathematical conceptions—why did some things take so long to happen even when the conditions were favourable? [...]

I had no idea when I started that I would go on like this! Please use this for writing notes on the back of. [...]

Thanks for the article. Let me know if you want to touch it up at all.

Best wishes,

David

P.P.S. Another thing about the genetic principle [discussed in (3)]—it ignores the possibility that because student can mathematise (and be educated in this ability) it is quite possible that they can apprehend math in a different way (order) than the way in which it was originally generated.

When David died, I had known him for 20 years. And now, another 20 years further along, he is still a significant part of me. Re-reading that letter from 1981 that so recently re-surfaced means so much more to me now than it did when I was 27 (and I am keeping my reply to him firmly to myself!).

Finally, there are various ways of keeping someone alive as the present moves forward, seemingly leaving the dead behind. Below is a photograph of the two of us, taken in 1994 in Vancouver, by my then partner. It provides another means to bring a past present into this present one (and needless to say it looks more like him to me than I look like me).



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