Chapter 20
Science Teacher Education in Canada: Addressing Diversity by Living and Teaching Intersectionality

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Abstract As a Black woman of Caribbean heritage, born and raised in England, my own school science experience was focused on learning the tricks that teachers presented as intuitively graspable. I was used to pushing through and ignoring the 'outsider' feelings that I possessed. As a science teacher and science teacher educator, I came to understand that there are many students for whom the acquisition of science knowledge means compromise to their sense of selfhood, either because they are members of groups for whom Western modern science is not a central tenet of understanding or because of the esoteric mode of science instruction. In this chapter, I identify four critical incidents that have occurred during my professional experience as a science teacher educator. I explore the implications of these incidents by examining them through the equity lens of intersectionality to highlight broader concerns in science teaching and science teacher education. The analyses reinforce the need for science teachers to allow themselves and their students to be open and reflective about their own positionings in the field of science education as well as the need to acknowledge the historical and philosophical contexts of Western modern science as a body of knowledge. I hope that this chapter will be used by science teacher educators to stimulate dialogue and provide an artifact around which constructive and meaningful conversation foments in the many spaces of science teacher education.

Introduction

My fundamental professional concern is the quality of the educational experiences gained by children and youth. I worry about what and how our children are learning. As a former science teacher who transitioned to become a teacher educator in a city that has one of the most diverse populations in the world, I recognize that population

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diversification often mobilizes an array of biases, discriminations, and prejudices in society. Therefore, I consider it a priority that pre-service and in-service teachers are intentional in their response to the diversity of children and youth in K-12 classrooms. In my role as a science teacher educator and researcher, I care about the skewed demographic profile of people who represent science practice and science education; this is what drives my objective of finding ways to broaden participation in science education. My research focuses on science inclusion by exploring how science is presented to school students and how teachers position themselves and their students as scientific knowers. I have no interest in approaches that focus on 'fixing' the children of minoritized groups so that they are more compliant within a system of inherent biases.[1] In this chapter, I examine my own experience to critically probe diversification initiatives and policies. I recount significant incidents in my academic career when my racial, ethnic, and/or gender identities were foregrounded. Using an intersectionality framework, I explore my positioning as an expatriate science teacher educator, and how this has influenced notions of diversity for my teacher candidates and colleagues.

Who Teaches Our Teachers and What Are they Learning? Diversity in Canadian Higher Education Policy

Major cities in North America are increasingly reflecting the demographic trends seen in Toronto. According to Toronto's 2016 census, approximately 50% of the city's residents belong to a 'visible minority' group, with the same proportion being 'foreign-born' (Statistics Canada, 2017). In 2017, Universities Canada—the organization representing institutions of higher education across the country—published a set of 7 *Inclusive Excellence Principles*, promoting equity, diversity, and inclusion across the higher education sector (Universities Canada, 2017).[2] Among the 7 principles was a focus on broadening faculty diversity. The *Principles* also described a

[1] Throughout this paper, I use minoritized or minoritization (as opposed to minority) to signify a process of societal structuring that supports the subordination of people and silencing of voices, irrespective of their actual numerical representation in the population.

[2] Although the terms equity, diversity, and inclusion are often conflated into a single abbreviation, EDI, in this chapter I have used each of the three terms with intentionality to render significant the distinction between and relatedness of the terms. I situate equity within the notion of fairness but not necessarily sameness; the concept calls for systems of power to make judgments based on justice as a right of personhood over protocol or technicality, combatting bias and discrimination. The term diversity is commonly used (euphemistically) to signify difference relative to the dominant category of people but I use it to suggest variance in a population in any one or more of a range of dimensions including race, class, ethnicity, ability, language, gender, religion, etc. Inclusion is one of the most problematic of terms in this triad as it can be used to suggest assimilation of minoritized persons and groups, but I use it to connote processes of providing access and voice whereby participation can be freely chosen (or not) by individuals from historically minoritized groups.

commitment to continued consultation with groups that are under-represented in Canadian university settings—identified in the Universities Canada communication as women, racialized individuals, Indigenous peoples, persons with disabilities, LGBTQ2+ peoples, and men in women-dominated disciplines. These objectives were underlined in the *Principles* by an opening statement affirming the belief that "universities are enriched by diversity and inclusion" (Universities Canada, 2017). Tamtik and Guenter (2019) explained that additional pressures exerted by funding bodies such as the Canada Research Chair Program (Government of Canada, 2018), have incentivized universities to create action plans and policies to publicly demonstrate their commitment to and progress with equity, diversity, and inclusion. The fact that there has been a need for these policies suggests that there is a problem regarding minoritization of students and faculty across the various institutions, but also that there is hope that this problem is enough of a priority to promote real change. Even though I was hired before the introduction of these diversification policies, I see myself as a participant in the *Inclusive Excellence* project, not merely because I am minoritized in a profession that is dominated by White middle-class men, but because the responsibility for enlivening these policies rests on all educators.

Commenting on the diversification agenda of universities in North America, James (2017) stated that academics of colour are often positioned as the individuals in the faculty who "deal with issues of 'diversity' – from counselling students of colour, to covering issues of race and ethnicity in courses, to conducting research in related areas" (p. 155). James continued by explaining that without a critical understanding of race and racialization (and prejudice more broadly), as embedded in social structures and norms, the components constituting the complex intersectionality of racialized and otherwise minoritized lives will be inappropriately read as distinct and equivalent units of oppression. This reductionist view of diversity encourages inclusion strategies that focus on increasing the representation (in terms of sheer numbers) of minoritized faculty and students, and helping minoritized students to navigate university structures. Rather than changing the fundamental structure of systems, and challenging the dispositions of individuals, these approaches serve to maintain the bounds of exclusion for minoritized students. In response, I remain concerned about how critical understandings of diversity will be incorporated into the education of teacher candidates, and what messages those teacher candidates will take into schools.

It is time for teacher educators of all backgrounds to embrace and embody the spirit of the *Inclusive Excellence Principles* so that Canadian teacher candidates may utilize pedagogical approaches and philosophical stances that are not only focused on doing no harm to the students in their care, but which actively confront, disrupt, and seek to combat prejudices and biases. Sleeter (2016) pointed out the error of many teacher educators who assume that their well-qualified and intellectually astute teacher candidates will readily grasp, or passively assimilate, an ability to recognise and confront prejudices such as racism. Speaking of the overwhelming whiteness of teacher education, Sleeter described the generative space created when teacher candidates' knowledge about discriminatory conceptions, such as race,

exposes inherent tensions. The challenge to expose and explore prejudice is even more acute when we prepare teacher candidates to teach the ostensibly objective subject matter of science.

The Sociocultural Context of Science Education

There appears to be some resistance to engaging with issues of power and social injustice in the field of science teacher education. It is common to teach about the benefits and challenges of intervention strategies and student-centred modes of teaching and learning for students who are marginalized in science, but teacher candidates are rarely asked to examine how achievement gaps in science arise in the first place; such an examination would lead to exposure of the potential for teachers' complicity in the maintenance of achievement gaps (Le & Matias, 2019). This inattention to deconstructing dominant narratives can leave teacher candidates inadequately prepared to teach students who are marginalized in the science education context (Underwood & Mensah 2018), which can lead to further disenfranchising of already ill-served students. Underwood and Mensah (2018) went further in saying that science teacher candidates need to uncover and examine their own biases, stereotypes, and prejudices with respect to the discipline they teach and the students in their classrooms.

The history of national systems of education in what we euphemistically call the West, combined with the positivist European origins of Western modern science have reinforced the notion that science education is the property of White middle-class men (Mensah & Jackson, 2018). Borrowing from Shizha's notion of science as "a culture for the privileged" (Shizha, 2007, p. 305), Mensah and Jackson (2018) described science as White property, stating that the Eurocentric heritage of science tends to "reify a White, male ownership of science" (p. 9). Mensah and Jackson went on to explain that this conceptualization of science as White property "limits the teaching and learning of science as a right for students of color or other marginalized groups, such as women, students of poverty, and students in low-resourced urban and rural areas" (p. 9). Indeed, Le and Matias (2019) cited data from the USA National Science Foundation asserting that "over 70% of the science workforce are White, and as such, many science faculty at college and university settings are also White". Figures are similar in Canada where fewer than 25% of full-time university science teachers are women (CAUT, 2018). A further complication is seen in science pedagogy where science is presented as an objective knowledge that is used by all developed societies such that anyone who disregards science is deemed ignorant (does not know enough) or backward (their thinking is fundamentally flawed).

The complicated history of science as motivation and mechanism of colonisation has left a legacy in 'Western' and once-colonised nations as a knowledge of the powerful (Burke & Wallace, 2020); hence, there is an incentive for students to capitulate with the science teacher, for fear of being further marginalized in society.

This means that our work, as science teacher educators, starts from a baseline that needs to be intentionally and deliberately unsettled. It is not enough to focus on helping students of colour or students who are otherwise marginalized to navigate the prevalent system of science education, nor is our work done when we call out oppressions in science education. We also need to resist and mitigate further oppressions by helping all teacher candidates to understand the origins and maintenance strategies of oppressions in science education; as asserted by Le and Matias (2019), all educators need to understand the insidious nature of prejudice in science education in order to "unmask unintentional oppression" (p. 21). As minority teachers, we need to start seeing our positions as opportunities to influence the mindsets of present and future generations. As my embodied self, I see opportunities to support the fundamental education of my teacher candidates, as I perform the dual task of combatting the personally draining stereotypes about me and people like me that the preservice teachers may bring to the learning context, while pushing for change and growth of our teacher candidates and the institution. This should be a work of all science teacher educators, not just those for whom the work is the most harrowing.

In this chapter, I explore how my minoritization, as a teacher educator, can be combined with approaches taken by colleagues in more dominant social positions to progress a more critical reading of Canada's higher education diversity agenda for our pre-service teachers. Given the significant social positioning of teachers in society, we cannot wait for the recruitment profile of teachers to shift before progress is made with respect to how diversity is 'dealt with' in schools. Our existing teachers and teacher candidates need to be supported as they develop a more critical appreciation for the socially unjust positionings that many of our school children occupy in contemporary society.

Theoretical Framework: Viewing Educational Inequities Through the Eyes of Intersectionality

Crenshaw (1989) utilized the term intersectionality to describe the compounded subordination of people who experience more than one category of societal marginalization. As an analytic framework, intersectionality has the potential to challenge and confront unidimensional explanations for the skews and imbalances observed in various social contexts. The framework asserts that oppressions based on race, gender, ability, ethnicity, and other dimensions of discrimination interact and result in different levels of political, structural, and representational minoritization. The relationship between categories is historical, socially constructed, and overlapping in ways that are not simply additive. One overwhelming strength of intersectionality (which also represents, perhaps, its greatest challenge as an analytic tool) is its confrontation of dichotomies and its resistance to reductionism (Jordan-Zachery, 2007). As a cautionary note, Rodriguez and Freeman (2016) warned against interpretations of intersectionality that allow distinct prejudices to go unnamed under the guise that

'diversity' is part of the complexity of contemporary living; in these instances, intersectionality is inappropriately invoked to distract from a specific social injustice, so that those in more privileged positions can share in experiences of marginalization. To combat this perspective, just as intersectionality highlights multiple oppressions, its focus on positioning and power dynamics can be used to illuminate compounded layers of privilege. As educators who represent those who have the social advantage of educational capital, we must leverage this aspect of our personas to exert pressure for social change on behalf of countless children who have the potential to get lost in the field that we fight so hard to support.

Methodology: Using Intersectionality to Interpret Critical Incidents

Drawing on various works of Kimberlé Crenshaw and Patricia Hill Collins, Christensen and Jensen (2012) explored the analytic strength of intersectionality, suggesting that a starting point for analysis can be "life-story narratives and the analysis of everyday life" (Christensen & Jensen, 2012, p. 109). In this chapter, I use a selection of my own professional life events (critical incidents) as points of reference from which an analysis of ways forward can be derived. Based on Flanagan's (1954) description of critical incident analysis, Butterfield et al. (2005) identified five phases to the methodology: (i) determining the research objectives and focus; (ii) setting parameters for incidents included in the study; (iii) gathering data (incidents); (iv) analyzing the data based on a pre-determined/emerging schema or framework; (v) interpreting the data and producing a report.

As identified above, the aim of this chapter, and the focus of the incidents selected and analyzed below, is to explore how my positioning, as a minoritized teacher educator, can be used to support colleagues and teacher candidates to adopt a more critical interpretation of Canada's higher education diversity agenda. In selecting which aspects of my story to share in this chapter, I first recounted the top-of-mind work-based experiences that I have found myself relating to friends and colleagues who are insiders to my professional activities and to broader aspects of my life story. These are incidents that have positively or negatively impacted how I think about and perform my professional role, and which have caused me to assess and adjust my perceptions and practices in the workplace. This incident selection approach aligns with Butterfield et al.'s (2005) assertion that critical incidents "help promote or detract from the effective performance of some activity or the experience of a specific situation or event" (p. 483). The incidents selected are analyzed based on the oppression/privilege dynamic of the intersectionality framework described above. It is my hope that, through analysis, these incidents can be used in positive ways to help me, and colleagues in similarly marginalized situations, navigate professional contexts that, at times, can feel less than inviting of our presence.

Findings and Discussion

Below, I recount four incidents (presented in narrative form in italics). After each incident, an analysis is presented where power relations are explored, as described in the oppression/privilege dimensions of the intersectionality framework. I end the chapter with some implications for teacher educators in all strata of society.

Must Some Parts of Me Be Silenced for Others to Thrive?

At the outset of each of my university courses, I share a short biographical profile with my students. I include details of my background as a school science teacher, my perspective on science as a discipline, aspects of my philosophy of teaching, my research background of using postcolonial theory to critique science education, and my focus on broadening participation in science. My aim is to illustrate how my perspective on science education has been shaped by the many life experiences that have influenced every aspect of who I am and how that influences how I teach. I explain that there are many elements of my identity that make this educational journey novel for me and my students. I identify myself as a Black woman from England of Caribbean heritage and I invite my students to journey through the course, exploring with me what the positioning of a teacher might mean for students in various educational settings. I always address aspects of identity because I want my teacher candidates to question and challenge what it means to interact with others as their full selves, acknowledging the various biases that such interactions may reveal. I was caused to reflect on this introduction when at the end of one course, a student confided that she and her peers were initially worried about what the course would be like when I first spoke about 'race and all that' but she was pleased to report that her concerns had not been borne out, and they had all enjoyed the course.[3]

My student's congratulatory tone suggested that she had shared this comment as a compliment but, to me, it highlighted a fundamental issue of a desire for colour-blindness (at least held at the outset of the course) so that the teacher candidate is protected from the discomfort that critical, race-related conversations can evoke. I have long understood that my social positioning as a Black woman might cause others around me to question my 'fit' (and, perhaps, fitness) as a science teacher and science teacher educator. As discussed by Mensah and Jackson (2018), speaking from a United States perspective, "there are tangible aspects of life that White people claim as their own" and from which 'people of colour' are excluded (Mensah & Jackson, 2018, p. 7); science seems to be one of those areas. Although I am a

[3] Throughout this chapter I have made approximations of conversations based on my recollections.

Black woman, when I am outside of the British context, my positioning becomes more ambiguous; I occupy a professional role that is usually classified as prestigious, and I carry an accent that suggests my European birth (which would align me with the knowledge system within which I work). I speak of *carrying* an accent and *suggesting* my origins because the lines of questioning that I face in North America reveal that what was previously read as a standard 'home counties' British accent is often read as affect (as if the various facets of my life are not already incongruent enough that I would seek to affect an accent). Asher (2006) referred to such identity disjunctures as interstitial locations, "dynamic spaces between identifications and cultures" (p. 176). The enigmatic nature of my presence in my professional role presents me with many personal challenges, but this ambiguous positioning provides numerous opportunities for me to be an impactful influence on the lives of teacher candidates with whom I work.

Solomon et al. (2005) referred to their numerous encounters with "the level of discomfort that is experienced on the part of the candidates when discussions of oppression, marginalization, colonization, racism, etc., are initiated" (p. 154). They caution that "in attempting to engage discussions of whiteness among white teacher candidates, teacher educators must remain aware of the ways in which the anger, frustration and general sense of uneasiness among participants can lead to the opposite effect" (p. 156). This is likely to be true when discussing discrimination with any group of socially privileged individuals, as is often the case with graduate teacher education programs such as the one within which I teach. Although I am intentional in my teaching approach, I do not have a specific agenda to 'tackle' race, ethnicity, and gender issues with my teacher candidates. I am just trying to prepare them for teaching science to all children; so, diversity cannot be ignored. For me, these are just natural considerations, not forced or laboured, just the reality of contemporary science education in Canada. As identified by Solomon et al. (2005), the unique vantage point that membership of a racialized group brings provides "multiple lenses through which the world is seen" (p. 152). The authors describe this as providing access to the double-consciousness described by DuBois (1973). While the situation of understanding the professional culture of the dominant while having the privilege of cultural connections with the marginalized may be read as somewhat disjointed, I believe it is a position from which we are well equipped to support our teacher candidates as they grapple with the various disparities we see in science education. This includes helping teacher candidates to move beyond meritocratic explanations in order to explain the complexities associated with differential achievement in our school communities; understanding these complex issues starts with examination of our own histories and positionings, rather than the 'diversity' of school students (Le & Matias, 2019). I appreciate that, while I model this examination at the outset of my courses, I need to provide my teacher candidates with explicit opportunities to conduct such self-examination.

The Embodied Self Can Signify Hope

Each year, I attend one of the graduation ceremonies for our range of degree programs. A couple of years ago, I had the opportunity to be a faculty participant during the convocation ceremony for our graduating teacher candidates. As is often true of university graduation ceremonies, the occasion was an elaborate event with strict dress codes, precision timing, and an array of Latin utterances. The students were in positive and jovial mood. So much so that, despite warnings to the contrary, several of them brushed past the flowers and the ceremonial mace on the stage to hug their professors. At the end of the ceremony, a Black woman, who was part of the officiating team at the event, came over to me and whispered "I have been noticing who comes over to hug you, you are doing an important job here!" I smiled politely, thanked her for her encouragement, and felt somewhat energized but, in that moment, I did not grasp what she had meant. Later, when I reflected upon the events of the day, I recalled that most of the students who had defied protocol to come and hug me were students from racially minoritized groups.

A body of literature has established a positive correlation between the academic performance of minoritized students and being taught by teachers who have similar backgrounds (E.g., Dilworth & Coleman, 2014; Easton-Brooks, 2015; Villegas & Davis, 2008). In addition, Brown (2014) cited numerous studies confirming the idea that teachers of color do not just see themselves as role models for minoritized students, they also seek to be transformative change agents. Nevertheless, being taught by a Black teacher educator, particularly in science education, may be unexpected for most teacher candidates in Canada, particularly those for whom racial and ethnic diversity of educators has not been a significant feature of their prior educational experience.

For the minoritized student trying to navigate through their introduction to the teaching profession, Brown (2014) explained that preservice teachers of colour often identify their teacher education programs as lacking in knowledge that is socioculturally relevant, critical, and humanizing. I find that students from racially minoritized groups will often find ways to spend time with me, discussing issues and taking my elective courses that will provide spaces for them to openly express concerns about science education that have been brewing for some time. Students tell me that there are few places where they can discuss some of the oppressions they have faced in their own science education, and some come to a realization that they are not personally to blame for much of the negativity they have encountered while receiving a science education. I hope that, by providing such spaces to intellectually engage with challenges experienced as racially minoritized students, my teacher candidates are able to echo the comments made by 'pre-service teachers of colour' in the study conducted by Mensah and Jackson (2018): "I was able to find my voice and place in science education" (p. 25), "I had a teacher I was able to relate to … and this made me a lot more comfortable during the semester" (p. 24),

and "I see myself as a science teacher" (p. 25). More importantly, I hope that my teacher candidates, irrespective of their ethno-racial background, can create science classroom climates for their own students so that the science classroom will be an inviting, engaging, and inclusive space of learning for all students; this is unlikely to happen if my teacher candidates are afraid to participate in challenging conversations about bias and social positioning in science education.

Challenging and Confronting Without Uttering a Word

A few years ago, during a teacher candidate group presentation, an incident occurred which shifted the entire tone of the class, and my subsequent approach in the course. The group member leading the presentation, advanced the slides to reveal a monochrome image of a flock of caged birds being liberated by a single bird. The presenter used the image to illustrate the teacher's role in science education. Unfortunately, the liberating bird was white, and the encaged birds were black. As soon as the presenter appreciated the potential interpretation of the image as being racially loaded, he paused, seemingly very conscious of my presence, and started apologizing for the image, stating that they had not previously thought about other connotations that the image might have beyond the idea of children being free to express themselves. As the composure of the teacher candidate (usually very calm, collected, and in control) started to unravel, the apology continued; he explained that when they picked the image they had not thought about the colours and now they feel terrible that the bird in charge of liberation is a white bird acting as 'savior' to the black birds. He referred to my research using a postcolonial framework and, as the explanation went on, I remember trying to avoid any display of emotion, I could see that the student was in evident discomfort and I felt my own level of frustration rising. I realized that, had my body not been in that room, that teacher candidate would not have had that moment of confrontation; a moment when, what was taken for granted was confronted with different/imagined perspectives because I was sitting in front of him and my approval would influence his grade. I resolved to be more intentional about approaching and deconstructing challenging ideas as they present themselves in class.

Reflecting on the incident above, I wondered if my teacher candidates would second guess themselves in the same way if they had made a similar representational faux pas in front of a classroom full of school children. Would there be the same level of consciousness about subliminal messages in the pedagogies they employ in their own classrooms? It was important for me to follow up with questioning and constructive challenging that would model approaches they could use in their own classrooms. We needed to add some additional elements to our community agreement. I encouraged the students to identify and try to eliminate euphemisms such as 'diverse students' from our conversations. We spoke about challenging the indeterminate 'they' when referring to a marginalized group, prompting each other to clarify meanings when such comments are made. Finally, we spoke about

the power of labelling and explored noun placement in descriptions of groups (as with my own work with children from low-income communities, as opposed to low-income children). It is important for teacher candidates to see how their own social positioning influences the messages they send about science education to their students. As Banks (2001) stated, teacher candidates "must be helped to critically analyze and rethink their notions of race, culture, and ethnicity and to view themselves as cultural and racial beings" (pp. 11–12). Banks also went on to speak about seeing how these concepts position the teacher socially, economically, and politically. A greater awareness of these positionings may help teacher candidates to be more cognizant of how their actions and attitudes can serve to maintain achievement gaps that are highlighted in the academic literature.

All Educators Need to Engage Authentically with the Work

I am disheartened when I reflect on so many instances when I have voiced equity concerns to my colleagues, only for those issues to be devalued or simply ignored. Sometimes I think that I may be too indirect in my approach as I am often acutely mindful of the potential to elicit responses that are based on emotional defensiveness rather than reflective engagement. One such example of this occurring was when, in casual conversation, I referred to the teacher candidate presentation incident above to make the point that our teacher candidates are not used to being challenged to think beyond their own positions of privilege. I suggested that the absence of peers of colour, particularly Black teacher candidates, meant that confrontation of deficit ideologies about race were not common. My concern was met with a response of bewilderment from a senior faculty member who stated, "How can that be? I thought we put a Black teacher candidate in each cohort!".

My colleague's assertion reinforces the belief that gaining a complex understanding of diversity that challenges prejudices and biases will occur passively, just by association. My colleague might as well have said: "How can that be? Each teacher candidate has a Black friend!". Framed in that way, the absurdity of the comment becomes clearer. It suggests that explicit and intentional work (beyond the academic examination of literature about diversity) is not required since all teacher candidates are being exposed to diversity in their teaching cohorts. This, indirectly, places the onus on teacher candidates who identify as marginalized to educate their peers into a state of critical consciousness. This expectation, even if common, is unsupported by the literature which states that "teacher candidates of color report high levels of alienation, a disconnection from the larger program community and a sense of not 'seeing themselves' in their programs" (Brown, 2014, p. 334). With such alienation, the pressing matter at hand is self-preservation rather than education of peers. In addition, Le and Matias (2019) indicated that the way diversity and inclusion are addressed in teacher education tends to emphasize a "safe multiculturalism" (p. 18) that neglects specific naming of oppressions and critical examination of complicity, leaving personal perspectives unchallenged. According to Le and

Matias, these approaches to teacher education keep minoritized teachers and teacher candidates silenced. The silencing of already minoritized teacher candidates was described by Sleeter (2016), where she referred to a study conducted by Amos (2016) explaining that:

> White teacher candidates enacted whiteness (such as joking about racist remarks, and avoiding learning by claiming to already understand another culture) in a class taught by a professor of color, and how these enactments silenced the few teacher candidates of color in the class who worried about consequences of confronting White peers not only in class, but also later on in schools where they might be hired. For candidates of color, this prevalent whiteness was agonizing, even terrorizing (Sleeter, 2016, p. 1066).

Not only did prominent White students try to silence the teacher candidates of colour, they were described as preying on the minority instructor. This emphasizes the fact that the work is not just for teacher educators of colour, indeed, it cannot be carried out by us alone as we are often unable to validate our own voices. If there are no benign positions in systems of education, then we are all doing something to either confront or maintain inequity and discrimination.

Conclusions

Returning to the focus of Universities Canada's *Inclusive Excellence Principles*, it is all to easy to see how the policy document might be used superficially to ensure that representation (in terms of the numbers) of faculty of colour in teacher education positions might be used to mitigate 'bad press' or litigation (as discussed in Henry et al., 2017). This focus can, at times, obscure a true commitment to the work of deconstruction that undergirds social justice initiatives; consequently, there is a need for institutional structures and mechanisms where new faculty hires are made on the basis of faculty being equity minded, and not just equity seeking. There needs to be a drive for shifting the profile of dispositions of institutional members; this will impact the expectations placed on our teacher candidates and, ultimately, will be carried into schools by the new generation of teachers. We cannot afford to relax when the demographic profile of teacher candidates in our teacher preparation programs starts to approximate the diversity of the given population, since oppression is a matter of power, not numbers. If the hard work of confronting deeply embedded deficit ideologies goes unchecked, particularly in teacher education, then we are using a band-aid to fix a heart attack in our education systems. The responsibility for promoting equity and inclusion sits with everyone in our teacher education programs: all teacher educators and all teacher candidates. This is particularly important when we consider the history of oppressions associated with the field of science education.

In this chapter, I have suggested that using critical interpretations of diversity (as are facilitated by the intersectionality framework) can support a more complex reading of diversity for faculty and teacher candidates. I want my teacher candidates

to own that they, just as I, carry assumptions about people based on their backgrounds, accents, appearance, etc. I want them to be able to acknowledge this and continue to second guess themselves, asking the "what if I'm wrong" question. The physical trigger of a minoritized faculty member can support the process and provide important support for difficult conversations but all faculty members must face the issue of discrimination with humility so that learning can occur at all levels within the university institution. As illustrated in Crenshaw's (1989) discussion of the complexity of employment policies and laws in addressing the rights of Black women, the embodied intersectionality of minoritized instructors in teacher education can support students as they start to contextualize diversity and facilitate consideration of "how different social categories mutually constitute each other as overall forms of social differentiation or systems of oppression" (Christensen & Jensen, 2012, p. 110). The somewhat enigmatic nature of a Black woman in science education could be a means of stimulating conversation that begins to challenge stereotypes.

Difficult conversations challenge the White property status of science education, but those conversations need to start with an understanding of science in relation to its history and what that means for who is included in the field of science education. When teacher educators ask science teacher candidates to question the meritocratic strength of systems of education, the teacher candidates are often defensive because they feel that they have worked hard to get to where they are today, they feel that they have earned their academic accolades and, if we challenge the system, it calls into question their hard work. There is often a visceral response to such confrontations which can manifest itself as hostility towards the instructor. Solomon et al. (2005) reminded teacher educators that sometimes, merely attempting to engage in such challenging conversations with teacher candidates can shut down and reverse attempts to broaden perspectives. Nevertheless, if only to support teacher candidates of minoritized social groups, all teacher educators must commit to the task of working to disrupt this knee-jerk response to ethical discomfort; as described by Sleeter (2016), "given the many studies of whiteness in teacher education extending back at least 20 years, teacher educators cannot claim ignorance about White candidates collectively victimizing peers (and faculty) of color." (p. 1066).

For minoritized faculty members, this is painful work. Although pain is never welcome, it is important that the pain of prejudice does not get so normalized that we fail to recognize it or, worse, start to accommodate it. As recounted by Nina Asher, who identifies as a South Asian woman academic in North America, "at least, over time, I have acquired some where withal to deal with such shocks … I have not become numbed to the pain. Because, if I were 'unable to feel the pain, unable to make it conscious,' then, of course, I would be 'unable to engage the possibility of transformation'" (Asher, 2006, citing her previous work Asher, 2003). I sometimes marvel at the fact that the pain does not get any less acute; perhaps I should start to see this as a blessing.

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