SN

ORIGINAL PAPER

Check for updates

Beyond tokenism and objectivity: theoretical reflections on a transformative equity, diversity, and inclusion agenda for higher education in Canada

Samuel Mugo[1] · Korbla P. Puplampu[2]

Abstract

Universities, the sites for objective knowledge, apolitical and legitimized to contribute to human and intellectual capacity, find themselves in a tenuous position on issues of merit, equality, and fairness. On one hand, social forces have demonstrated how universities have been institutions for the production and reproduction of systemic inequality. On the other hand, universities maintain that they are well positioned, as part of their institutional renewal practices, to address contemporary calls for Equity, Diversity, and Inclusion (EDI). Since universities are now eager to embrace EDI principles, it is appropriate to demonstrate their historical failures and provide some recommendations towards institutional renewal. Drawing on critical pedagogy, the paper examines selected academic contributions and knowledge claims that have reproduced systemic inequality, specifically on the discourse on human classification. The broader question is whether universities are simply going through the motions and hope EDI is a fad or are serious about institutional renewal and transformative changes. The study offers some ideas on how universities can pursue transformative changes grounded on EDI principles.

Keywords Science · Objectivity · Equity · Diversity · Inclusion · Canadian Universities

Introduction

The headlines of racially motivated murder of Canadians and Americans of African heritage or ancestry (read as Blacks) in the summer of 2020 sparked local, regional, national, and global outrage and prompted an unprecedented push for transformative

✉ Samuel Mugo
  mugos@macewan.ca

1   Department of Physical Sciences, MacEwan University, Edmonton, AB, Canada

2   Department of Sociology, MacEwan University, Edmonton, AB, Canada

change. One relevant question is how knowledge systems and social institutions such as law enforcement and higher education institutions have sustained systemic marginalization of Blacks, as the racialized "Other," inferior, and worth less (Apata 2020; James 2012; James and Turner 2017). Higher educational institutions occupy a privileged position in the business of knowledge production and innovation towards social development (Schot and Steinmueller 2018; Etzkowitz and Zhou 2017). In the last four decades, Canadian universities, like those in other countries, have been reeling from dramatic changes due to or in response to neoliberal globalization of higher education (Majhanovich 2020; Connell 2013). Significant aspects of these institutional changes in include operational restructuring for their financial stability, commitment to internationalization and recruitment of foreign students, and practices that demonstrate a greater social relevance and intercultural sensitivity under the umbrella of Equity, Diversity, and Inclusion (EDI).

Canadian universities, the focus of this study, have presented themselves as a site that can push forward a new agenda of knowledge production and institutional practices as part of EDI initiatives. To be fair, numerous Canadian universities, in response to federal government funding requirements, have embarked upon EDI action plans (Campbell 2021; Tamtik and Guenter 2019). The legislative requirements together with the broader social outrage at summer 2020 racially motivated headlines have loudly amplified calls for EDI and laid bare the human tragedies of injustice, thereby compelling universities to take notice of their own role in the production and reproduction of inequality (Magnan et al. 2021; Odekunle 2020Batavia et al. 2020). In any case, EDI has gone beyond the public sector (government institutions) to include the private sector (the world of business) and is now a prominent fixture in the public discourse. For example, a search of the phrase EDI in search engines such as Google Scholar and Web of Science database from 2015 to 2021 show a rapid increase in attention in the scholarly arena (Fig. 1).

EDI connotes and seeks to address the unfair access to opportunities and participation for historically underrepresented and marginalized populations resulting in disparity in their achievements. Specifically, equity is focused on the promotion of social justice and fairness, and ensuring removal of partial practices that historically excluded certain groups in the distribution of socio-economic resources. Diversity
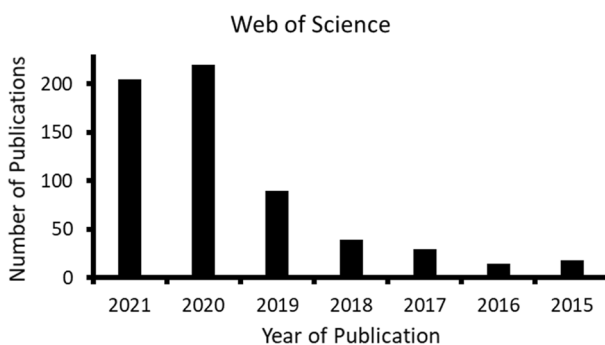
Fig. 1 The number of publications with the phrase EDI from the Web of Science database

is about the representation of different voices, particularly previously marginalized perspectives because of differences in factors like sexual orientation, gender, and multiple forms of existence, abilities and disabilities, personal traits, appearance, nationality, age, religion, socio-economic status, level of health, nationality, and ethnicity. Inclusion is the degree of participation by diverse citizenry in processes that impact society, organization, and institutions. It is currently broadly acknowledged that the lack of diversity minimizes the collective human wellbeing and experience within a community (Urbina-Blanco et al. 2020).

From the perspective of educational policy practices, critical pedagogy can serve as an insightful framework for interrogating academic institutions and EDI initiatives for success. As a frame of reference, critical pedagogy suggests the creation of contextualized knowledge through a dialogic process with the view to present a humane and critical worldview grounded in social justice, mutual understanding, and collaborations between educators and learners on one hand, and education–society relations on the other hand (Freire 1993; Giroux 1997). Critical pedagogy, when properly infused in both the physical and social sciences, can offer a useful framework to better understand academic knowledge and its impact to education and society (Lodge 2021; Macrine 2020). This is because, critical pedagogy challenges the traditional notion of academic knowledge as neutral, apolitical, objective, and instead demonstrates the intricate relationship between knowledge production and the dynamics of power in educational processes and outcomes (Marouli 2021; Jeyaraj 2020; Woldeyes and Offord 2018).

Against the backdrop of critical pedagogy, this study examines how the university's institutional renewal processes can embody the tenets of EDI. The paper argues that while universities have been complicit in fostering systemic inequality, they can also help in creating a new regime based on EDI, but only if they demonstrate wholesale institutional and structural changes in policies that go beyond tokenism, governance on paper, and mere policy pronouncements. Thus, any analysis on the momentum of EDI in higher education needs to focus on operationalization and implementation of tangible changes in the short to medium and eventually in the long term. The next section of the paper will explore the complex relationship between science and colonization that resulted in the production of racialized knowledge and the related implications to inequality. Drawing on the overview, a subsequent section will outline suggestions for a successful operationalization of EDI while also sensitive to options and challenges and finally a summary and concluding remarks.

Academic knowledge, colonization, and tokenism: selected cases from natural to social sciences

Academics and practitioners in natural science disciplines and mathematics, generally regard their work as based on the principles of science and the findings as grounded on the rigours of the scientific method (for example, experimentation, observation, testing). As such, scientific knowledge is generally regarded as objective and bias-free. What is lost or not given the required attention is that the natural

sciences and for that matter any academic discipline certainly does not exist in a vacuum and social forces do influence the crafting of hypothesis, data collection and analysis, and desired or expected conclusions. Consequently, there is always a fine line between science and pseudoscience, and hence the fundamental necessity to continuously question any claims to objectivity. In fact, it is in the interest of science, both natural and social, to be self-reflective and in all cases question whether the scientific activities and findings afford diverse thinking, equal representation, neutral outcomes, and conclusions (Wilson-Kennedy et al. 2020).

One notable area where historical academic knowledge has informed public discourse is on human classification systems. Academics in both physical and social sciences have authored findings that laid a strong foundation to produce knowledge systems integral to the subjugation and oppression of various social groups. While such findings were regarded as scientific and objective, most of them were pseudo-scientific. We below reflect on a few notable case examples. From the natural sciences, the celebrated eighteenth century Swedish taxonomist Carl Linnaeus's book *Systema Naturae*, 1758, classified human beings based on their skin color, behavior, and clothing (Linné et al. 1792). At the base of the pyramid of desirability, he classified the "Africanus"" species as "lazy, sluggish and neglectful," in contrast, the Europeans were ranked at the top of the pyramid and classified as "sanguine, wise, inventors" (Skuncke 2008; Müller-Wille 2014).

In 1839, Samuel George Morton, an American anatomy scholar published a book entitled *Crania Americana,* with claims that Caucasians had the biggest brains, while Africans had the smallest, indicative of relative contrast in intellectual capacity (Poskett 2015; Mitchell 2018). J. Marion Sims considered the 'father' of gynecology, between 1845 and 1849, operated and experimented on Black women with no anesthesia (Ojanuga 1993; Lerner 2003). The thinking or rationale was that the Black woman either do not feel pain or they like the pain. The work of English philosopher, Charles Darwin, *The Origin of Species and the Descent of Man*, published in 1859, advanced an argument that in conjunction with Herbert Spencer, emphasized evolution of human species and accorded pride of place to differences in skin color. This line of thought was further advanced by Francis Galton in 1883 to ideas on human heredity, breeding, and ultimately eugenics. Academics in North America bolstered eugenics as an area of study in psychology (Moss et al. 2013; Puplampu 2008). The central argument is that Darwin and Galton, in many ways, accepted and promoted notions of inherent differences in the wealth of human races based on skin color (Melange 1999).

In 1905, Robert Koch received the Nobel Prize for Physiology or Medicine for his path-breaking research in tuberculosis (Nobel Prize, 2021). Koch took his research on bacteriology to the next level when he traveled with a group of scientists to East Africa in 1906 where they tested an arsenic based compound, Atoxyl, as a therapy for sleeping sickness. The chemical compound was too dangerous to test on Europeans, but Koch and his research team had no qualms to test the toxic compound on Africans, which led to blindness and even death to many East Africans (Eckart 2002; Echenberg 2001). Koch and his research team did not consider the ethics of this research and the misery it caused on "lesser human types," perhaps because the findings contributed to the wellbeing of the assumed "superior"

or "normal" Europeans, with Africans, the assumed "inferior" or "abnormal," as merely collateral damage.

Academic knowledge in the social sciences, often in conjunction from 'objective' natural sciences, have also provided findings that support an understanding of human classification (Dupree and Boykin 2021). University research legitimized both the mythical notion of a "pure" Aryan race that underpinned Nazi rule in Germany in the 1930s and South Africa's apartheid policy that elevated some sections of the Afrikaner population in order to justify the consequent treatment of "inferior" groups (World Bank 2002). Parenti (2000) reminds us about how in the USA, some influential academic faculty, particularly in the deep south, were at the forefront in legitimizing slavery and infusing white supremacy ideas into systems of learning and knowledge production. The above 'scientific' findings laid the foundation to rationalize unethical practices meted on the "inferior race" as guinea pigs for scientific experimentation in the case of the Tuskegee Syphilis study in the USA from 1932 to 1972 and other abhorrent medical practices (Washington 2006; Brandt 1997).

In view of the above historical cases and the cumulative nature of knowledge, it is not surprising that Callahan's, 2017, a textbook for nursing students, *Nursing: A Concept-Based Approach to Learning*, second edition published by Pearson Educational Press, was riddled with stereotypes that were paraded as scientific knowledge regarding the relationship between pain and various ethnic minority groups. Recently, at the height of the COVID-19 global pandemic in 2020 which triggered concerted research in vaccines, racial hierarchies of experimentation and racial segregation by scientists were on full display. In a TV show in April 2020, Jean-Paul Mira, the head of the intensive care unit at the Cochin Hospital in Paris, in a response to a question on the search for research subjects to try COVID-19 vaccines did not hesitate to identify Africans as best specimens for experimental trial. Mira argued, "why not do this study in Africa where there are no masks, no treatment or intensive care, a little bit like it's been done for certain AIDS studies, where among prostitutes, we try things, because we know that they are highly exposed and don't protect themselves?" (Winter 2020; Bruna 2021; BBC 2020).

Mira's comments fit into the wider narrative in which assumed neutral scientists spew off biased and racialized comments, just like technology developers who build artificial intelligence (AI) applications with their own inherent biases, likely from their intercultural poverty. A case in point is the Google's photo applications that labeled users with dark phenotypes as gorillas (BBC 2015). At issue are calculated conscious or unconscious micro-aggressive behavior against racialized groups. Microaggressions comprise practices intentional or unintentional subtly common verbal, behavioral, and environmental communications, that transmit hostile, derogatory, or negative messages that stigmatizes an individual or a group based on their appearance (Cénat et al. 2022; Williams 2021; Agbaire 2019; Urbina-Blanco et al. 2020). Racialized knowledge and microaggressions underpin tokenism.

Kanter (1993) addresses the token or symbolic value of women, as a minority group, in the context of the corporation. As tokens, women are subjected to visibility, contrast, and assimilation and their work output, utterance, and silence are always under the gaze (Kanter 1993, p. 212). Bringing this reality to bear on the

experiences of minority faculty can best be illustrated in terms of "cultural taxation" (Joseph and Hirshfield 2011). At the core of cultural taxation is the expectation that minority faculty serve on minority related committees, advise minority students, and even speak on and become an active spokesperson on EDI issues, regardless of the person's area of academic specialization. The problem, however, is that such intense service obligations are devalued and do not really count when it comes to tenure and promotion (Dupree and Boykin 2021; Settles et al. 2020).

Beyond the individual expectations of minority faculty, another illustration of tokenism can be seen when most institutions tout their EDI statements, yet there is minimal action to truly deal with the daily reality of systemic inequality in the academy (Bond 2020). This is unfortunate since the pursuit of excellence and truth are bound to flow inexorably from diversity and inclusion and should constitute the core bedrocks upon which academic institutions should be based upon when it comes to knowledge construction. With the deep-rooted and historical nature of academic knowledge production and the reproduction of inequality, addressing or correcting the issue is not simply a flick of a switch, but requires a long and an intentional concerted effort. This is how the Canadian academy, like others, can reposition itself to better deal with systemic inequality and champion EDI. The repositioning when grounded on critical pedagogy and EDI principles would require institutions to move beyond seeking only to showcase or tout their EDI credentials in copious institutional policies, and rather invest in adequate human and capital resources to accelerate effective operationalization. Put differently, several conditions and changes are required for universities to become an exemplar in the current push to advance EDI.

Critical pedagogy, and operationalizing EDI for success: options and challenges

Two key attributes of critical pedagogy are to identify and acknowledge relevant actors and their situatedness in the educational process and need for dialogical engagement. While educators and learners constitute one set of actors, the role of the state and the broader society cannot be ignored. Thus, the various actors must clearly define the EDI goals, for example, by interrogating historical and contemporary policy frameworks, which are informed by dominant social norms that perpetuate inequality. While complex to attain, dialogue is essential to addressing prevailing forms of social inequality, making it possible to hear from and listen to the perspectives of other actors. As such, it is significant to bear in mind that conversation is "a means to transform social relations in the classroom" (Shor and Freire 1987, p. 11) in the face of implicit and explicit bias. Implicit bias is the insidious subconscious attitudes or stereotypes meted on "other" people based on their dimensions of appearance which unconsciously influence behavior and decisions towards them (Urbina-Blanco et al. 2020; Sawyer and Gampa 2018). Explicit bias relates to attitudes and resultant behaviors that are conscious and stem from prejudice and eventually become institutionalized, for example, colonialized science, slavery, police brutality, or intentional discriminatory behavior

(Laurencin 2020; Harding 2011; Seth 2009). Indeed, "the task of supporting authentic equity and inclusion among, [for example] students and faculty is multi-layered and complex" (Tamtik and Guenter 2019, p. 42).

Addressing systemic inequalities in an EDI-infused education should acknowledge the prevailing biases in the production of knowledge and the related implications for marginalized groups. The university can then adopt a reflective posture and commit to institutional processes, by, for example, framing their values statements on EDI to highlight issues of power and privilege (Peifer 2021; Jindal 2020). From a critical pedagogy framework, educators and learners work in different ways to create new forms of knowledge. The new forms of knowledge should be able to directly confront and address the lived realities of inequality based on variables such as ethnicity, gender, and sexuality. The EDI statement should also clarify the expectations of all relevant institutional actors or agents in ensuring the value systems are upheld, while explicitly stating actions that the organization would take on those who perpetuate biased and micro-aggressive behavior. This is because when universities claim they have zero-tolerance and are for EDI, in most cases, that exists only on paper and amounts to nothing more than tokenism (James 2012). Tamtik and Guenter (2019), in a recent review of diversity strategies of fifteen Canadian universities, note that rather than a nuanced reflective and radical stance, for most institutions there is a general bent on a slogan framing approach on EDI characterized by vagueness and minimalism as a survival tactic, perhaps only likely to satisfy federal and provincial legislations. Their observation was that EDI statements and policy were largely written by university administrators who are largely racially homogenous, with minimal input from targeted racialized groups or faculty unions or students. This nonconsultative approach taints the very purpose of EDI and subjects it to vulnerability at the onset.

One critical pedagogy-infused practice can occur when educational institutions mandate or preferably encourage variations of value statements that uphold and enhance EDI which align and reinforce institutional diversity declarations (Kempf 2020; Rodriguez and Huemmer 2019). Such an approach would bring life to organizational-level EDI statements, while significantly contributing to helping interested groups learn and be socialized on issues of diversity. The approach also helps to foster a diverse and safe space for everyone to engage in the learning process. While the EDI statement is a significant component for all educational organizations to integrate, it must align with and should be an integral part of the institutional strategic plan, with clarity on time-framed measurable actions on which the institution can be held to account. This is because what is required is a "pedagogy [that can] make the link on the day to day individual experiences to the broader contemporary and historical machinations … at the structural, institutional, and systemic levels" (Kempf 2020, p. 123). As depicted in Fig. 2, the above orientations can be brought to bear on three main institutional changes: the curriculum and decolonization of knowledge; financial investment; and governance (Fuentes et al. 2021; Urbina-Blanco et al. 2020; Tamtik and Guenter 2019). The ideals of critical pedagogy depicted by the encapsulating ring in Fig. 2, can guide the operationalization of the suggested three institutional changes.
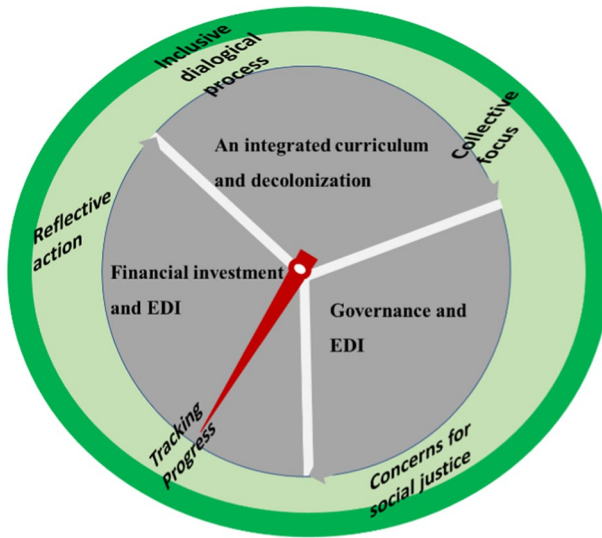
Fig. 2 A framework for operationalizing EDI for success

The curriculum and decolonization of knowledge

Curriculum, as a document, occupies a vital place in the educational process as it presents the framework of what would be learned or studied (Barrier et al. 2019). One key aspect of a valuable curriculum is the commitment to intercultural competence which means, among other things, a realization that students learning, and knowledge creation do not occur in a vacuum (Freire 1993). Intercultural competence through learning can create a space in which culture can be utilized as an anchor to understanding other groups in a deeper and more connected manner (Barton and Ho 2021; Matlin et al. 2019; Foldy and Buckley 2017). Improving intercultural competence through a dedicated curriculum on the dynamics of historical segregation and racism, for example, would be one useful step. As illustrated in Fig. 3, cultural proficiency is a continuum of stages, hence the need for institutions to go beyond offering a single stand-alone seminar or workshop. This is the context in which educators can use EDI statements, embedded in teaching philosophies to intentionally pursue learning or knowledge creating systems that mitigate the exclusion of voices on the margins (Fuentes et al. 2021; Chaudhary et al. 2020).
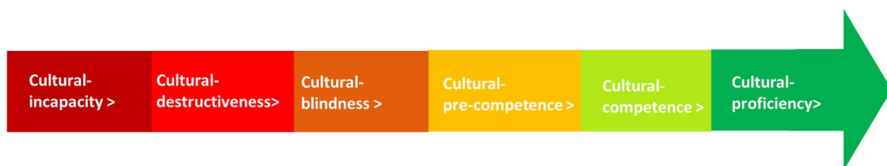

Fig. 3 Schematic illustrating the spectrum of culture competency, adapted from Matlin et al. (2019)

In addition, intercultural engagements best occur in sociable environments that are nonthreatening, allowing for typically uncomfortable racial biases and blind spots to be revealed without the risk of participants feeling targeted.

A nuanced education calls for workshop toolkits for training which outline applicable guidelines on strategies to reduce bias from recruitment processes, diversify talent pools, and benchmark diversity and inclusion across organizations, towards the urgent change we all need (Dawson et al. 2020; Harrison-Bernard et al. 2020). These workshops are relevant components of the cultural pre-competence and the cultural component dimensions of the spectrum (Fig. 3). Snippets of leadership on such issues are starting to happen in some Canadian universities. The University of Toronto Report on Anti-Black Racism which the University accepted and publicly declared a commitment to implement the findings, highlights clear recommendation and measurable timelines (University of Toronto 2021). Following through with the recommendations would go a long way to improve learning and teaching outcomes with time. Also, the recent federal government support of $1 M to Afua Cooper, Dalhousie University, in knowledge mobilization project to fill gaps in African Canadian history education is a useful step (Wilson 2021). In general, a rethinking curriculum that can integrate historical racial disparities, elevate EDI, deepen professional and learning skills is of paramount importance to addressing systematic inequalities in the long term (Raycroft et al. 2020). While likely happening elsewhere, there is a notable precedence in University of Calgary where over 100 courses across different degree programs highlight topics on power, social justice, and EDI (Tamtik and Guenter 2019). However, integration of themes on inequality in inter-disciplinary courses in sciences, business, and humanities would be vital.

Another related factor in an integrated curriculum is decolonization not only in the natural sciences, but also in the social sciences (Wong et al. 2021; Connell 2018; Ideland 2018). A decolonized curriculum must aim to disrupt the educational process along the following lines: challenge Western epistemological dominance in knowledge production; self-criticism of existing forms of knowledge; acknowledge and create space for inclusive and diverse forms of knowledge and learning (Andreotti et al. 2015). In a settler society like Canada, the colonial context and knowledge production means the classroom becomes the space to transcend Eurocentrism to different forms of collaboration in knowledge production. Since previous forms of 'objective' knowledge in sciences and other disciplines were defined and determined through the so-called Western Canon (read as White), ethnocentrism was part of the process. Through colonization, hierarchical dominant power structures that reinforce racial superiority, exclusion, and normative forms of thinking (e.g., White, Western, Eurocentric, Christian, patriarchal), across all knowledge domains were perpetuated (Fuentes et al. 2021). This form of thinking must be replaced through decolonization and resistance to disrupt the hegemonic power structure that influence and perpetuate it (Connell 2018).

As such, there needs to be an expansion and redefinition of what constitutes discovery which would demand changing the previous ways in which knowledge systems are legitimized. Specifically, the call here "involves rewriting course plans, textbooks, and online resources to give weight to the social experience of the colonized and postcolonial world" (Connell 2018, p. 404). The argument which is

consistent with critical pedagogy is that an EDI-infused curriculum must redefine what constitutes excellence by going beyond the narrow conception of the Western canon and include other forms of excellence as legitimate. This approach will lay the foundation for a more progressive, inclusive, and diverse ways of knowing (Urbina-Blanco et al. 2020). Therefore excellence, innovation, and knowledge should be redefined with critical pedagogical infused curriculum that feature studies and innovative findings on pathway to cultural proficiency (Fig. 3). While likely to face opposition, disruption of the structural hierarchy is a necessary step towards enhancing EDI in the framework of critical pedagogy, with particular attention to empathy, compassion and a sensitivity to power and privilege (Jindal 2020; Rodriguez and Huemmer 2019). However, creating both an integrated curriculum and a decolonized program would require sustained institutional financial investment.

EDI and financial investment

The second aspect of operationalizing EDI is financial investment and disbursements (Fig. 2). In terms of hiring, institutions need to make the necessary investment beyond simply stating they are committed to EDI. It has never been, as is often the case, the absence of qualified and competitive minority academics, rather, in most cases, unequal hiring outcomes have been due to long standing unconscious bias against minority candidates. In general, universities have always maintained that they "especially welcome applications from members of visible minority groups" (Henry 2015, 2021). However, for the 'welcome' to change to actual hiring, there is need for a constant emphasis on training at all levels of the hiring process with the view to raise consciousness, reduce complacency, and promote a critical self-reflection and adopt a forward-looking orientation (Campbell 2021, p. 55). The investment in training for equal hiring and retention should integrate institutional scrutiny of the outcomes of hiring and promotion processes. That way, the evaluation of credentials would be more sophisticated to spot subtle systemic biases. Canadian universities responded well to the financial incentives of establishing an EDI institutional framework before they could apply to the Government of Canada Research Chair (CRC) program (Tamtik and Guenter 2019). This suggests that higher educational institutions can establish and operationalize an appropriate EDI framework, although the CRC program recently has been a site of contestations on equity targets (Munroe 2021). While there are studies on the progress on gender inequality and compensation, data on the representation and compensation of underrepresented groups in the academic are less well studied, partly due to university administrators and their response to data requests (Fuentes et al. 2021; Schnabel and Benjamin 2020).

Another critical issue is financial support towards the creation of new knowledge. Research investment involving topics of inequality, often pursued by academics from marginalized groups, must be reviewed from a different lens or targeted for research funds as needed. The argument is that among researchers, there are systematic barriers that need to be addressed to ensure biases during grant applications and the whole ecosystem of academic research (disseminations in conferences and peer review publications). These barriers which often have implications for academic

promotions and performance evaluation must be engaged in a focused and transparent manner with adequate institutional financial support (Segarra et al. 2020; Urbina-Blanco et al. 2020; Tamtik and Guenter 2019). For example, Dalhousie University introduced the Belong Research Fellowship for research by pre-tenured faculty members from marginalized groups as a targeted redistributive support that has the potential to close the inequality gaps from historically unfair practices (Tamtik and Guenter 2019). In terms of research dissemination, organizers of conferences should be encouraged to advertise widely and seek the participation of missing voices in the academy (Termini and Pang 2020; Segarra et al. 2020). Mentorship programs will be useful in this regard for marginalized faculty, who, in turn, can mentor minority learners. The mentors best placed to effect change are those that fit in a similar situation, hence the need to recruit and retain minority faculty across all levels of the institution (Batavia et al., 2020). It is an open secret that academic institutions, because of their systemic structures struggle to recruit and retain scholars from minority communities.

However, the focus for financial investment should extend to students from marginalized groups both local and international. While there are competitive targets among universities for recruitment of international students, their contributions to the academy are often premised on their potential in revenue injection to the institutions (Beattie 2021). Leveling the playing field by engaging international students from marginalized groups 'as equals' could contribute strongly to the cultural consciousness across the academy. The financial investment could take the form of scholarships and bursaries, which ideally should be targeted, as racial inequalities and progress thereof is disproportionately against Blacks and the Indigenous. A notable example is the Queen's University $2.2 million dollars bursary program for first-year Black Canadian students (Tamtik and Guenter 2019). While there are disparities across disciplines, investments to support marginalized students can be targeted to Faculties, where professional representation is dismal such as education (teachers), and science, technology, engineering, and mathematics (STEM) programs. These targeted support systems should go along with student admission policies that create spaces for the marginalized in these professional areas that historically experience underrepresentation primarily due to structural barriers. For real-impact, universities should rethink their mandate and involve themselves on how they shape the success of the students while also supporting staff who facilitate the progression of students during their studies.

Governance and EDI

The nature and dynamics of institutional governance cannot be ignored (Fig. 2). At the heart of governance are transparency, accountability, equality, and equity. A governance framework based on EDI calls for several conditions. For instance, hiring committees should, by default, be diverse and sufficiently independent and empowered to arrive at decisions. That is one way in which hiring committees can best address allegations of discrimination, harassment, and oversight when tied to institutional metrics on reward systems (Termini and Pang 2020). The focus is on mitigating biases, the available of management training manuals that discuss microaggressions and other nonacceptable

forms of behavior that create exclusion, and a complaint process, with clear and measurable actions items. Acquisition of such a mindset among university administration is a key part of the political will, which will help to move the dial of institutions towards deeper cultural competencies (Fig. 3). Also necessary is a shift from members of dominant groups in university administration who continue to oversee the EDI apparatus, to a more diversified pool of upper administrators. Otherwise, the power imbalance, the very problem that needs to be addressed will continue to persist. From a governance point of view, the privileged cannot fully comprehend and often downplay the scope of systemic forms of inequality.

Further, organizations must have policies and confidential procedures in place wherein individuals experiencing bias, discrimination or harassment can seek counsel and remediation without fear of retribution. That means, EDI committees could also be tasked with providing leadership on training and the career progression of all faculty, especially marginalized faculty. For real change to happen, universities should ensure the composition of leadership at the highest levels reflect the diversity of the student body and the broader society (Valantine 2020). An action-oriented approach that situates inequality in a historical context requires that resource redistribution, as a solution, is radical and well-meaning. A notable example is Dalhousie University's unique targeted hiring approach, where they restricted hiring search for a senior administrator to racially visible or Indigenous candidates (Tamtik and Guenter 2019). This approach recalibrates the diversity of top leadership in universities giving a chance for real change in the EDI agenda to percolate across the universities culture. Representation of marginalized groups at the senior administrative roles remains a rarity, and yet it is the key that can unlock progress for the future.

While academic institutions often tout their inclusivity in institutional manuals, tangible progress remains minimal. Quantitative analysis and data mapping to effect change would require institutions to disclose explicitly their racial demographics, what positions they hold, their credentials, how long they have been in their roles, their compensation package, and to clearly track career progression (Urbina-Blanco et al. 2020). Institutions should also disclose regular evaluations to the public on progress being made to eliminate bias, discrimination, and harassment, an approach that builds and/or restores trust to the university and the broader society (Schnabel and Benjamin 2020; Barton and Tan 2020). With such transparent data, the scope of the problem, mitigatory steps, and progress made within the institution would be clearly stated and measurable processes can be established as part of the progression to cultural competency that is grounded by EDI principles (Fig. 3).

Conclusion

This study, drawing on critical pedagogy, examined the context of a transformative EDI in higher education. Knowledge production in higher educational institutions has not necessarily been objective and bias-free and the result has been cumulative systemic inequalities. It is therefore not surprising that institutions of higher education have been compelled by legislative changes to pursue EDI practices. These practices, when grounded on critical pedagogy-infused EDI principles will enhance

knowledge production and outcomes that can contribute to sustainable human development.

Educators and university administrators need to consciously recommit to minimize inequality and promote diversity. That calls for shifting the culture of academic workplaces to intentionally implement equitable and inclusive policies, set norms for acceptable workplace conduct, and provide opportunities for mentorship and networking. After all, past and present academic practices have played a central role in creating racialized knowledge, and therefore renewed academic practices should also help in recreating an EDI scholarship and environment. Everyone deserves to be treated fairly and academic institutions have an urgent role to enact strategic policies borne from values and systems that foster fairness, while taking radical steps to remove systematic barriers that have barred marginalized groups from participating in their fullest self in academy. However, that will require more than slogans. Instead, there is an urgency to focus on measurable actions on progressive decolonized curriculum, institutional targeted financial investment for marginalized faculty and students. Adopting a governance framework that seeks a full diverse and equal representation will accelerate the efforts to level the unequal playing field from historical exclusionism and contemporary systemic inequalities. The ultimate outcome is a higher education system that would go beyond tokenism, and builds a long term transformative agenda.

Declarations

References

Acosta DA, Lautenberger DM, Castillo-Page L, David J (2020) Achieving gender equity is our responsibility: leadership matters. Acad Med 95(10):1468–1471. https://doi.org/10.1097/ACM.0000000000003610

Agbaire EA (2019) Microaggressions: Black students' experiences of racism on campus. https://doi.org/10.20381/ruor-23937

Akpapuna M, Choi E, Johnson DA, Lopez JA (2020) Encouraging multiculturalism and diversity within organizational behavior management. J Organ Behav Manag 40(3–4):186–209. https://doi.org/10.1080/01608061.2020.1832014

Apata GO (2020) "I can't breathe": the suffocating nature of racism. Theory Cult Soc 37(7–8):241–254

Araujo M (2021) Notes on racism, democracy, and research. Ethnic Racial Stud 44(13):1–9. https://doi.org/10.1080/01419870.2021.1884277

Barton KC, Ho L-C (2021) Curriculum for justice and harmony: deliberation, knowledge, and action in social and civic education, 1st edn. Routledge, London

Barton AC, Tan EN (2020) Beyond equity as Inclusion: a framework of "rightful presence" for guiding justice-oriented studies in teaching and learning. Educ Res 49(6):433–440. https://doi.org/10.3102/0013189X20927363

Barrier J, Quéré O, Vanneuville R (2019) The making of curriculum in higher education power, knowledge, and teaching practices. Rev D'anthropol Connais 13(1):33–60

Beattie S (2021) Ontario colleges' reliance on international student tuition 'a risky formula,' auditor general warns https://www.cbc.ca/news/canada/toronto/ontario-colleges-reliance-on-international-student-tuition-a-risky-formula-auditor-general-warns-1.6272326?__vfz=medium%3Dsharebar. Accessed 5 Dec 2021

Brandt AM (1997) Racism and research: the case of the Tuskegee Syphilis study. In: Leavitt JW, Numbers RL (eds) Sickness and health in America—readings in the history of medicine and public health. University of Wisconsin Press, Madison, WI, pp 392–404

British Broadcasting Corporation (BBC) (2015) Google apologizes forp Photos app's racist blunder. https://www.bbc.com/news/technology-33347866. Accessed 10 Aug 2021

British Broadcasting Corporation (BBC) (2020) Coronavirus: France racism row over doctors' Africa testing comments. https://www.bbc.com/news/world-europe-52151722. Accessed 22 July 2021

Bruna AG (2021) Decolonising stereotypes: a brief reflection on racial violence and cultural relations during the COVID-19 crisis. Social Sciences & Humanities Open. https://doi.org/10.2139/ssrn.3599760

Bond MA (2020) Scholarship for social change: reflections of an accidental academic. Am J Community Psychol 66(1–2):190–200

Campbell A (2021) Equity education initiatives within Canadian universities: promise and limits. Perspect Policy Pract High Educ 25(2):51–61. https://doi.org/10.1080/13603108.2019.1631226

Cénat JM, Hajizadeh S, Rosy Darly Dalexis RD, Ndengeyingoma A, Guerrier M, Kogan C (2022) Prevalence and effects of daily and major experiences of racial discrimination and microaggressions among black individuals in Canada. JJ Interpers Violence 37(17–18):NP 16750–16778. https://doi.org/10.1177/08862605211023493

Chaudhary VB, Berhe AA (2020) Ten simple rules for building an antiracist lab. PLoS Comput Biol 16(10):e1008210. https://doi.org/10.1371/journal.pcbi.1008210. PMID: 33001989; PMCID: PMC7529192.

Chubak B (2020) Historical and ethical perspectives on vulvoplasty. Sex Med Rev 8(4):542–547

Connell R (2013) The neoliberal cascade and education: an essay on the market agenda and its consequences. Critic Stud Educ 54(1):99–112. https://doi.org/10.1080/17508487.2013.776990

Connell R (2018) Decolonizing sociology. Contemp Sociol 47(4):399–407

Dawson J, Coggins NL, Dolechek M, Fosado G (2020) Toolkits for equity: an antiracist framework for scholarly publishing. Ser Rev 46(3):170–174. https://doi.org/10.1080/00987913.2020.1806653

Dickinson KL, Roberts JD, Banacos N, Neuberger L, Koebele E, Blanch-Hartigan D, Shanahan EA (2021) Structural racism and the COVID-19 experience in the United States. Health Secur 9:S14–S26. https://doi.org/10.1089/hs.2021.0031

Dupree CH, Boykin CM (2021) Racial inequality in academia: systemic origins, modern challenges, and policy recommendations. Policy Insights Behav Brain Sci 8(1):11–18. https://doi.org/10.1177/2372732220984183

Echenberg M (2001) 'Scientific gold': Robert Koch and Africa, 1883–1906. In: Youé C, Stapleton T (eds) Agency and action in colonial Africa. Palgrave Macmillan, London, pp. 34–49. https://doi.org/10.1057/9780230288485_3

Eckart WU (2002) The colony as laboratory: German sleeping sickness campaigns in German East Africa and in Togo, 1900–1914. Hist Philos Life Sci 24(1):69–89

Etzkowitz H, Zhou C (2017) The triple helix: university–industry–government innovation and entrepreneurship, 2nd edn. Routledge, London

Foldy EG, Buckley TR (2017) Reimagining cultural competence: bringing buried dynamics into the light. J Appl Behav Sci 53(2):264–289

Freire P (1993) The pedagogy of the oppressed, 20th anniversary. Continuum, New York

Fuentes MA, Zelaya DG, Madsen JW (2021) Rethinking the course syllabus: considerations for promoting equity, diversity, and inclusion. Teach Psychol 48(1):69–79. https://doi.org/10.1177/0098628320959979

Giroux HA (1997) Pedagogy and the politics of hope: theory, culture, and schooling: a critical reader, 1st edn. Routledge, London

Goings F, Wilson NL, Equiza A, Lefsrud L, Wills LM (2021) Margaret-Ann Armour & WISEST–an incredible legacy in equity, diversity and inclusion in STEM and the work still to do. Can J Chem 99(8): 646–652. https://doi.org/10.1139/cjc-2020-0328

Harding S (ed) (2011) The postcolonial science and technology studies reader. Duke University Press, Durham

Harrison-Bernard LM, Augustus-Wallace AC, Souza-Smith FM, Tsien F, Casey GP, Gunaldo TP (2020) Knowledge gains in a professional development workshop on diversity, equity, inclusion, and implicit bias in academia. Adv Physiol Educ 44:286–294. https://doi.org/10.1152/advan.00164.2019

Henry A (2015) 'We especially welcome applications from members of visible minority groups': reflections on race, gender and life at three universities. Race Ethn Educ 18(5):589–610. https://doi.org/10.1080/13613324.2015.1023787

Henry N (2021) Racial segregation of Black people in Canada. In The Canadian encyclopedia. Retrieved from https://www.thecanadianencyclopedia.ca/en/article/racial-segregation-of-black-people-in-canada

Ideland M (2018) Science, coloniality, and "the great rationality divide": how practices, places, and persons are culturally attached to one another in science education. Sci Educ 27:783–803. https://doi.org/10.1007/s11191-018-0006-8

James CE (2012) Strategies of Engagement: how racialized faculty negotiate the university system. Can Ethn Stud 44(2):133–152

James CE, Turner T (2017) Towards race equity in education: the schooling of Black students in the Greater Toronto area. York University, Toronto, ON. https://edu.yorku.ca/files/2017/04/Towards-Race-Equity-in-Education-April-2017.pdf

Jarolimova J, Yan J, Govere S, Ngobese N, Shazi ZM, Khumalo AR, Bunda BA, Wara NJ, Zionts D, Thulare H, Parker RA, Bogart LM, Bassett IV (2021) Medical mistrust and stigma associated with COVID-19 among people living with HIV in South Africa. AIDS Behav 25(12):3967–3977. https://doi.org/10.1007/s10461-021-03307-8

Jeyaraj JJ (2020) Possibilities for critical pedagogy engagement in higher education: exploring students' openness and acceptance. Asia Pacific Educ Rev 21:27–38. https://doi.org/10.1007/s12564-019-09605-0

Jindal M (2020) #NotMyAriel: reflection of growing in a world that favors whiteness. Pediatrics 146(6):e2020015206. https://doi.org/10.1542/peds.2020-015206

Joseph TD, Hirshfield LE (2011) "Why don't you get somebody new to do it" Race and cultural taxation in the academy. Ethn Racial Stud 34(1):121–141

Kanter RM (1993) Men and women of the corporation. Basic Books, New York

Kempf A (2020) If we are going to talk about implicit race bias, we need to talk about structural racism: Moving beyond ubiquity and inevitability in teaching and learning about race. Taboo J Cult Educ 19(2). Retrieved from https://digitalscholarship.unlv.edu/taboo/vol19/iss2/10

Langellier BA, Fleming PJ, Pintor JBK, Stimpson JP (2021) Allostatic load among US- and foreign-born whites, blacks, and latinx. Am J Prev Med 60(2):159–168. https://doi.org/10.1016/j.amepre.2020.08.022

Laurencin CT (2020) Black lives matter in science engineering and medicine. J Racial Ethn Health Disparities 7:1021–1034. https://doi.org/10.1007/s40615-020-00924-2

Lerner B (2003) Scholars argue over legacy of surgeon who was lionized, then vilified. The New York Times. Archived from the original on 22 Feb 2015. https://www.nytimes.com/2003/10/28/health/scholars-argue-over-legacy-of-surgeon-who-was-lionized-then-vilified.html. Accessed 17 Feb 2021

Linné C, Gmelin JF, Kerr R, Archer J (1792) The animal kingdom, or zoological system, of the celebrated Sir Charles Linnæus: Containing a complete systematic description, arrangement, and nomenclature, of all the known species and varieties of the mammalia, or animals which give suck to their young. A. Strahan, and T. Cadell, London; W. Creech, Edinburgh

Lodge W (2021) Confronting repressive ideologies with critical pedagogy in science classrooms. Cult Stud of Sci Educ 16:609–620. https://doi.org/10.1007/s11422-021-10047-7

Macrine SL (ed) (2020) Critical pedagogy in uncertain times: hope and possibilities. Palgrave MacMillan, Cham

Magnan MO, Collins T, Darchinian F, Kamanzi PC, Valade V (2021) Student voices on social relations of race in Quebec universities. Race Ethn Educ 1–7. https://doi.org/10.1080/13613324.2021.1890564

Majhanovich S (2020) Neo-liberalism in a globalized world: the case of canada. In: Zajda J. (eds) Globalisation, ideology and neo-liberal higher education reforms. Globalisation, comparative education and policy research, vol 21. Springer, Dordrecht. https://doi.org/10.1007/978-94-024-1751-7_2

Matlin SA, Yam VWW, Mehta G, Krief A, Hopf H (2019) The need for cultural competence in science: A practical approach to enhancing equality, diversity, and inclusion. Angew Chem Int Edn 58:2912–2913. https://doi.org/10.1002/anie.201900057

Marouli C (2021) Sustainability education for the future? Challenges and implications for education and pedagogy in the 21st Century. Sustainability 13(5):2901. https://doi.org/10.3390/su13052901

Melange (1999) Darwinism and racist ideologies. Chronicle of Higher Education, XLV(35), B11

Miller J (2020) Why the Black struggle in Canada has all but been erased. Two historians explain our blind spot. Toronto star. https://www.thestar.com/news/gta/2020/06/04/why-the-black-struggle-in-canada-has-all-but-been-erased-two-historians-explain-our-blind-spot.html. Accessed 27 July 2021

Mitchell PW (2018) The fault in his seeds: Lost notes to the case of bias in Samuel George Morton's cranial race science. PLoS Biol 16(10):e2007008. https://doi.org/10.1371/journal.pbio.2007008

Montgomery BL (2021) Make equity essential to expedite change in academia. Nat Microbiol 6(1):7–8. https://doi.org/10.1038/s41564-020-00845-0

Moss EL, Stam HJ, Kattevilder D (2013) From suffrage to sterilization: eugenics and the women's movement in 20th century Alberta. Can Psychol 54(2):105–114. https://doi.org/10.1037/a0032644

Müller-Wille S (2014) 'Race and history: comments from an epistemological point of view.' Sci Technol Human Values 39(4):597–606. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4326670/

Munroe I (2021) Latest settlement in CRC equity issue sets hard deadline for targets. June 29. https://www.universityaffairs.ca/news/news-article/latest-settlement-in-crc-equity-issue-sets-hard-deadline-for-targets/. Accessed 29 June 2021

Nobel Prize (2021) Robert Koch Biographical. https://www.nobelprize.org/prizes/medicine/1905/koch/biographical/. Accessed 18 July 2021

Odekunle EA (2020) Dismantling systemic racism in science. Science 369(6505):780–781. https://doi.org/10.1126/science.abd7531

Ojanuga D (1993) The medical ethics of the 'father of gynaecology, Dr J. Marion Sims. J Med Ethics 19(1):28–31. https://doi.org/10.1136/jme.19.1.28

Parenti M (2000) The myth of the liberal campus. In: White GD, Hauck FC (eds) Campus Inc: corporate power in the ivory tower. Prometheus Books, Amherst, NY, pp 85–92

Patton LD, Haynes C (2018) Hidden in plain sight: the black women's blueprint for institutional transformation in higher education. Teach Coll Rec 120(14):1–18. https://journals.sagepub.com/doi/abs/10.1177/016146811812001405

Poskett J (2015) National types: the transatlantic publication and reception of Crania Americana (1839). Hist Sci 53(3):264–295. https://doi.org/10.1177/0073275315580955

Peifer M (2021) Looking back on a life of unacknowledged privilege and a call to action. Mol Biol Cell 32(11):1081–1085. https://doi.org/10.1091/mbc.E21-01-0024

Puplampu KP (2008) Knowledge, power and social policy: John M. MacEachran and Alberta's 1928 sexual sterilization act. Alberta J Educ Res 54(2):129–146

Rapoo C (2011) Just give us the bones!': theatres of African diasporic returns. Critical Arts-South North Cult Media Stud 25(2):132–149. https://doi.org/10.1080/02560046.2011.569057

Raycroft MAR, Flynn AB (2020) What works? What's missing? An evaluation model for science curricula that analyses learning outcomes through five lenses. Chem Educ Res Pract 21(4):1110–1131. https://doi.org/10.1039/C9RP00157C

Rodriguez NS, Huemmer J (2019) Pedagogy of the depressed: an examination of critical pedagogy in higher ed's diversity-centered classrooms post-trump. Pedagog Cultur Soc 27(1):133–149. https://doi.org/10.1080/14681366.2018.1446041

Sawyer J, Gampa A (2018) Implicit and explicit racial attitudes changed during Black Lives Matter. Pers Soc Psychol Bull 44(7):1039–1059. https://doi.org/10.1177/0146167218757454

Schnabel RB, Benjamin EJ (2020) Diversity 4.0 in the cardiovascular health-care workforce. Nat Rev Cardiol 17(12):751–753. https://doi.org/10.1038/s41569-020-00462-8

Schot J, Steinmueller WE (2018) Three frames for innovation policy: R&D, systems of innovation and transformative change. Res Policy 47(9):1554–1567. https://doi.org/10.1016/j.respol.2018.08.011

Seaton EK, Zeiders KH (2021) Daily racial discrimination experiences, ethnic-racial identity, and diurnal cortisol patterns among Black adults. Cultur Divers Ethnic Minor Psychol 27(1):145–155. https://doi.org/10.1037/cdp0000367

Segarra VA, Primus C, Unguez GA et al (2020) Scientific societies fostering inclusivity through speaker diversity in annual meeting programming: a call to action. Mol Biol Cell 31(23):2495–2501. https://doi.org/10.1091/mbc.E20-06-0381

Seth S (2009) Putting knowledge in its place: science, colonialism, and the postcolonial. Postcolon Stud 12(4):373–388

Settles IH, Jones MK, Buchanan NT, Dotson K (2020) Epistemic exclusion: scholar(ly) devaluation that marginalizes faculty of color. J Diver High Educ. https://doi.org/10.1037/dhe0000174

Shor I, Freire P (1987) What is the "dialogical method" of teaching? J Educ 169(3):11–31

Skuncke MC (2008) Linnaeus: an 18th century background. In: The Linnaean legacy: three centuries after his birth (London, 2008), pp 19–26. https://ca1-tls.edcdn.com/documents/Special-Issue-8-The-Linneaen-Legacy.pdf?mtime=2016021306073.

Sunseri T (2016) Blood trials: Transfusions, injections, and experiments in Africa 1890–1920. J Hist Med Allied Sci 71(3):293–321. https://doi.org/10.1093/jhmas/jrv048

Super L, Hofmann A, Leung C, Ho MB, Harrower E, Adreak N, Manesh ZR (2021) Fostering equity, diversity, and inclusion in large, first-year classes: using reflective practice questions to promote universal design for learning in ecology and evolution lessons. Ecol Evol 11(8):3464–3472. https://doi.org/10.1002/ece3.6960

Tamtik M, Guenter M (2019) Policy analysis of equity, diversity and inclusion strategies in Canadian universities – how far have we come? Can J High Educ 49(3):41–56. https://doi.org/10.7202/1066634ar

Termini CM, Pang A (2020) Beyond the bench: how inclusion and exclusion make us the scientists we are. Mol Biol Cell 31(20):2164–2167. https://doi.org/10.1091/mbc.E20-06-0374

University of Toronto (2021) Report of the University of Toronto Anti-Black Racism Task Force. University of Toronto, Toronto. https://hrandequity.utoronto.ca/wp-content/uploads/2021/04/Anti-Black-Racism-Task-Force-Report_Web.pdf

Urbina-Blanco CA, Jilani SZ, Speight IR, Bojdys MJ, Friščić T, Stoddart JF, Nelson TL, Mack J, Robinson RAS, Waddell EA, Lutkenhaus JL, Godfrey M, Abboud MI, Aderinto SO, Aderohunmu D, Bibič L, Borges J, Dong VM, Ferrins L, Fung FM, John T, Lim FPL, Masters SL, Mambwe D, Thordarson P, Titirici M-M, Tormet-González GD, Unterlass MM, Wadle A, Yam VW-W, Yang Y-W (2020) A diverse view of science to catalyse change. Angew Chem Int Ed 59(42):18306–18310. https://doi.org/10.1002/anie.202009834

Valantine HA (2020) Where are we in bridging the gender Leadership gap in academic medicine? Acad Med 95(10):1475–1478. https://doi.org/10.1097/ACM.0000000000003574

Washington H (2006) Medical apartheid: the dark history of medical experimentation on Black Americans from Colonial times to the present. Doubleday, New York

West K, Greenland K, van Laar C (2021) Implicit racism, colour blindness, and narrow definitions of discrimination: why some White people prefer 'All Lives Matter' to 'Black Lives Matter.' Br J Soc Psychol. https://doi.org/10.1111/bjso.12458

Williams MT (2021) Microaggressions are a form of aggression. Behav Ther 52(3):709–719. https://doi.org/10.1016/j.beth.2020.09.001

Williams M, Sharif N (2021) Racial allyship: novel measurement and new insights. New Ideas Psychol 62:100865. https://doi.org/10.1016/j.newideapsych.2021.100865

Wilson S (2021) "A Black people's history of Canada" set to produce a seismic shift in education about Canadian history - Federal gov't invests $1M+ in knowledge mobilization project. Dal News - Dalhousie University. https://www.dal.ca/news/2021/04/09/-a-black-people-s-history-of-canada--set-to-produce-a-seismic-sh.html. Retrieved 29 July 2021

Winter G (2020) The ethics of COVID-19 vaccine trials. J Prescrib Pract 2(12):664–665

Wilson-Kennedy ZS, Payton-Stewart F, Winfield LL (2020) Toward intentional diversity, equity, and respect in chemistry research and practice. J Chem Educ 97(8):2041–2044. https://doi.org/10.1021/acs.jchemed.0c00963

Woldeyes YG, Offord B (2018) Decolonizing human rights education: critical pedagogy praxis in higher education. Int Educ J 17(1):24–36

Wong SHM, Gishen F, Lokugamage AU (2021) Decolonising the medical curriculum: humanising medicine through epistemic pluralism, cultural safety and critical consciousness'. Lond Rev Educ 19(1):1–22

World Bank (2002) Higher education in developing countries—peril and promise. World Bank, Washington, DC