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Colonization, cadavers, and color: Considering decolonization of anatomy curricula

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Abstract

Anatomy is a discipline that, despite its universal nature, offers limited diversity in terms of representation in cadavers, imagery, technology, and models used within teaching. The universal move toward inclusive curricula has put anatomy education under the microscope, particularly with respect to efforts to decolonize curricula. This paper considers the challenges and opportunities to diversify the anatomy curriculum. Decolonizing anatomy education curricula will entail addressing the ingrained cultures within the disciplines, such that produces a number of challenges including: underrepresentation of certain bodies, difficulty talking about difference, and the hidden curriculum in anatomy education. In order to aid educators in achieving inclusive anatomy curricula, a toolkit and considerations are presented, alongside both do's, don'ts and case examples. We highlight the black-or-white dichotomy, and the absence of brown in between. The paper is a conversation starter for what it means to begin the process of decolonizing the curriculum within anatomy education.

KEYWORDS

anatomy, curriculum, decolonization, diversity, equality, inclusion, inclusive curricula, race, racial differences

CONTEXT 1

In this paper on decolonization of anatomy curricula we set the scene, including the historical influence of colonialism on anatomy curricula, and present the challenges associated with, and the opportunities for, decolonization of the anatomy curriculum. Decolonization is not a single event or act. It is a long-term process and commitment. In that vein, this article serves as a starter to the conversation on decolonization of anatomy education as a discipline. Decolonization is messy, it is uncomfortable, it is iterative, and it will require personal, cultural, and institutional commitment, reflection, critical thinking, and

action. Above all, it is an opportunity—an opportunity to create a diverse and inclusive learning environment.

Our discussion is frank, not all those interested in decolonization are starting from the same place. We have witnessed, even contributed to, significant advances in the sphere of equality, diversity, and inclusion. As you will recognize, difficult conversations were had, past wrongs were acknowledged, and the opportunity for change embraced. We start this article with candor, noting where we come from in order to move forward. This paper is not a literature review for two reasons. Firstly, there is a paucity of literature due to the contemporary nature of decolonization in the remit of anatomy education, and seminal

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papers within this specialism are yet to be written. There is also potential for publication bias with Western perspectives dominating (Ekmekci, 2017; Mulimani, 2019). Secondly, this is an opportunity to adopt a reflective stance and to empower those in anatomy education to start conversations, even those of causing discomfort and unease.

1.1 | The current landscape in anatomy and higher education

Historical events and, more recently, events in 2020, have considerably changed the educational landscape, and irrevocably at that (Finn, Quinn, et al., 2021). The protests and reaffirmation of Black Lives Matter (BLM) activism that followed the murder of George Floyd while in police custody brought into sharp focus pre-existing societal divisions in Western societies. Discrimination and inequalities across a range of contexts (e.g., education, health, criminal justice), especially as experienced by black people, entered the realm of mainstream discussion. As a result, there have been demands for redress and rebalancing across the board. In education, this has taken the form of renewed calls for decolonization of the curriculum. Decolonization, it could be argued, is a form of making curricula inclusive. In the sphere of anatomy education, it involves an acknowledgment of the messy, vet unchangeable, past, where bodies were acquired for dissection in ways that would be wholly unacceptable in modern Western societies. It involves recognition of injustices committed against minorities for the advancement of science, and a redressing of this balance in the form of increasing the visibility and value of these minorities previously utilized without consent or without a face. It has been described in broader contexts of higher education (Jansen, 2019; Jansen & Osterhammel, 2017), but less in anatomy (Finn, Quinn, et al., 2021).

> An inclusive curriculum is universal and intended to improve the experience, skills and attainment of all students including those in protected characteristic groups. It aims to ensure that the principles of inclusivity are embedded within all aspects of the academic cycle. (AdvanceHE, 2021)

Anatomy, like many other disciplines, has a history steeped in colonialism and colonial practices that with a retrospective lens are unacceptable today to both the science community and the general public. History, though, cannot be undone, it must be acknowledged. For example, anatomy stems from grave robbing, vivisection, dissection of the poor, criminals and the wounded, and Nazi experiments (Finn, Quinn, et al., 2021). As a discipline, we must start a process of critical reflection on our past and identify actions and opportunities, through this reflective process, to make our educational space as inclusive as possible. Working *toward* decolonization of curricula is one way that this can be achieved.

1.2 | Definitions

Anatomical variation (interchangeable with anatomical differences): an inter-individual difference between anatomical structures; variations are not abnormalities and are considered normal as they are found consistently among different individuals and are generally asymptomatic.

Antiracism: policies or practices opposing racism and promoting racial tolerance.

Color: or skin color—the visible pigmentation of the skin, primarily used in this context as an indication of someone's race.

Color-line: social, economic or political barriers that persist between different racial groups. Popularized by Du Bois, it has been expanded to include discrimination beyond color discrimination.

Decolonization: the process of undoing practices perceived to be related to colonial past. Within the educational context, confronting and challenging the colonizing practices that have influenced education in the past but which persist in educational practice today.

Equality, diversity, inclusion (EDI): the umbrella term under which policies and processes relating to fair treatment and opportunity for all sit, with the aim of eradicating prejudice and discrimination relating to an individual or group of individual's protected characteristics.

Ethnicity: differences between people mostly on the basis of language and shared culture.

Race: the historic major groupings into which people have been divided on the basis of physical characteristics or shared ancestry, with perceived qualities or characteristics associated with the particular grouping; today, also considered a mixture of behavioral, cultural, and physical attributes.

Racism: discrimination, prejudice or antagonism toward an individual or group of individuals based on the belief that different races possess characteristics, abilities, or qualities that render them inferior.

Representation: the portrayal of an individual or group of individuals in a particular way.

Social justice: justice pertaining to the unequal distribution of societal wealth, opportunities and privileges.

Woke: action and alertness to perceived societal injustices and associated with ideas that involve identity and race promoted by progressives, for example, "white

-Wiley⊥

1.3 | What is decolonization and why does it matter?

To understand decolonization, we must first acknowledge colonization. Colonization is the practice of settlers occupying another country, acquiring political control, either partially or fully, and exploiting the country economically. To move forward, one must be aware that settler colonialism has impacted upon the organization, governance, curricula, and assessment of compulsory learning. It is these dated settler perspectives that has counted as knowledge, and through the perpetuating of such perspectives, unfair social structures are rationalized and maintained (Tran, 2021; Tuck & Yang, 2012).

Mortiz Julis Bonn, a German economist, first coined the word "decolonization" to describe former colonies that achieved self-governance (Bonn, 2017). With respect to curricula, decolonization refers to the creation of spaces and resources for a dialogue among all members of a Higher Education Institution (HEI) on how to envision all cultures and knowledge-systems in the curriculum, and to do this with respect to what is being taught and how it frames the world (Charles, 2019). In light of the BLM movement and the reverberation of calls for change, HEIs in many parts of the world with diverse populations have been compelled to rethink their policies and, consequently, review their teaching delivery, assessment, curricula, and physical environments.

Jansen and Osterhammel (2017) considered decolonization to be "a technical and rather undramatic term for one of the most dramatic processes in modern history: the disappearance of empire as a political form, and the end of racial hierarchy as a widely accepted political ideology and structuring principle of world order" (p. 1).

> Decolonising the curriculum refers to the creation of spaces and resources for a dialogue among all members of the education community on how to imagine and envision all cultures and knowledge systems in the curriculum. This is with respect to what is being taught and how it frames the world, all the time questioning from whose viewpoint the information is coming. (Keele University, 2021).

Decolonizing curricula goes beyond inclusivity and diversity. Many believe the latter suggests merely an incorporation of "outside" perspectives, rather than the more radical interrogation of knowledge and whose interests it serves characteristic of the decolonization agenda. Addressing power differentials is at the heart of decolonizing education-with this lens, we re-look at and re-develop curricula to show and serve the interests of diverse learners. Many may question the applicability to anatomy education. Uncertainty may be due to an unwillingness to be drawn into the bruising political fray, which sometimes appears to be framed as a zero-sum game between the forces of "wokeness" and conservatism. Resistance may be due the sentiment, "If it ain't broke, don't fix it," with the accompanying belief that there is a clamor for change that is neither meaningful nor relevant to teaching and learning around scientific facts. A further consideration is ensuring that "decolonization" is not dismissed as a buzzword that has the potential to lose currency (Charles, 2019), or that it is not perceived as merely a metaphor (Tuck & Yang, 2012). Tuck and Yang (2012) argue that the increasing number of calls for decolonization within educational advocacy and scholarship has resulted in decolonization becoming a metaphor (Tuck & Yang, 2012).

> Decolonizing is about considering multiple perspectives and making space to think carefully about what to value. (Ferguson et al., 2019)

Given the starkness of societal inequalities for people from black and other minoritized ethnic communities, the paper focuses on decolonization with respect to race (or the idea that people can be categorized on the basis of certain noticeable physical characteristics or their shared ancestry). However, there is also a recognition that inequality and marginalization are intersectional issues-race serves here as an exemplar. More than that though, anatomy education may have particular difficulties embracing teaching and learning around racial differences, which is also discussed. We have striven to convey some of the considerations around decolonization through balancing the wider societal debates with anecdotal experience gleaned from working within the sector, and have aimed to punctuate the predominantly academic discussion with worked examples and cases that will hopefully provide a helpful platform for other educators starting the process of reimagining their own curricula. Whether where we get to counts as decolonization is a question in itself, but we hope that this paper serves as a helpful entry into what is going to be an ongoing process of dialogue and working out what is appropriate, essential, and recommended in the discipline.

We talk a lot about color (i.e., in this context the range of hues visible as skin tone, and used commonly as an indication of someone's race) but let us be clear: diversifying cadavers is not decolonization. The latter

requires an analysis of power and knowledge production and how certain communities are underserved by the way anatomy teaching is set up. At the same time, with anatomic representation that is currently so white and black, we would argue that diversifying the range of colors is part of the wider decolonizing effort (e.g., see work by Mbaki, Todorova, & Hagan, 2021; Mbaki et al., 2021). Room has to be made for the blacks, browns, whites and everything in between if all members of the education community are really to find a place for themselves in the discipline, quite apart from the fact that greater recognition of the various manifestations of pathology has direct clinical implications (Mukwende et al., 2020). So, in sum and a helpful reminder to those starting out on the decolonizing journey, as a useful framing, decolonization is not a case of black or white. It is black, brown, white, and everything in between. In essence (and within the context of anatomy), it is giving color its rightful place within the curriculum. It is acknowledging indigenous populations (Pitama et al., 2018), and the diversity in society, health, and healthcare.

The aforementioned health inequalities are not the only reason that decolonization of anatomy curricula matters. Anatomists are typically training future health workforces, workers who need to deal with a diverse patient population, appreciate racial morphology (where it has an impact on patient outcomes) and even otherwise develop a sensitivity to the diversity of the pluralistic modern societies we live and work in. Having an understanding of historical "wrongs" and the attempts to redress these issues in education matters, perhaps not so much from the patient outcome perspective but even more so as educationalists and healthcare workers who are vested in the interests of society as a whole and willing to deal sensitively with all the colors and hues encountered in the business of day-to-day work-life.

2 | ANATOMY IN THE CONTEXT OF A DECOLONIZED OR REIMAGINED CURRICULUM

When thinking about decolonization of the anatomy curriculum, there are a couple of common misconceptions relating to diversity in anatomy that are deep-seated and difficult to change. These are (a) that the human body is either identical in all humans or (b) that variation in skin color and ethnicity is a representation of other, more profound, racial variations that underlie the skin (Cunningham, 1898). In fact, within the social and biological sciences, there is widespread consensus that race is in fact a social construct and not an anatomical "truth" or "attribute"; classifications of race are often solely based on

the color of one's skin, rather than the shared 99.9% of our otherwise shared genome (Chou, 2020). Such misconceptions are unhelpful to a discussion on the decolonization of the anatomy curriculum. Decolonizing anatomy education curricula will entail addressing the following challenges: (a) underrepresentation of certain bodies, (b) difficulty talking about difference, and (c) the hidden curriculum in anatomy education. These will be discussed in turn below. There are undoubtedly numerous other angles and issues that could come under the heading of decolonization within this sector but it is necessary to start the conversation from places of commonality-these three issues are those that are anecdotally encountered by anatomists across Western societies and serve as a starting point for initiating a tricky conversation that has had little coverage until very recently.

2.1 | Underrepresentation of certain bodies

Within anatomy education, teaching and learning relies upon bodies (cadavers and life models), physical representations of the body (e.g., plastic models), technological software, and diagrammatic representations (e.g., textbooks and anatomy atlases). Anecdotally, diagrammatic, technological, and physical representations are frequently devoid of diversity in terms of the populations they represent (Louie & Wilkes, 2018; Parker et al., 2018). Not many attempts have been made to systematically review and collate these representations. Despite anatomy being universal, variation being normal (Bergman, 2021; Cunningham, 1898), and skin being the largest and most visible organ, it is only in recent decades that anatomical texts have displayed surface anatomy images with a diverse range of skin tones. It is important to remember that this is unlikely to be a deliberate attempt to perpetuate underrepresentation. After all, cadavers can only be selected from those who donate, meaning diversity may be limited in some regions. There is often a lack of donations from some ethnicities for cultural or religious reasons. Often, there are pragmatic reasons, such as geography and associated jurisdiction, that limit the diversity of donors. With these considerations in mind, it is then unsurprising that healthcare students tend to encounter predominantly white donors within the dissection rooms across the Western hemisphere. Presumably, similar underrepresentations of other ethnicities (including white body donations) occur across other geographical regions (such as the Far-East, South-East Asia, and Africa). These are some of the pragmatic reasons to bear in mind, although historically underrepresentation of bodies may have had more sinister reasons (when viewed with a retrospective lens) (Plataforma SINC, 2008).

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Research suggests that racial inequities are embedded in the curricular edification of both healthcare professionals and patients (Louie & Wilkes, 2018). A prime example of the fundamental flaws of instructional design is exemplified by the lack of representation of different skin tones within imagery and models utilized in anatomy education, arguably feeding into the tacit messaging a learner may receive. In 2018, a study analyzed in excess of 4,000 images from anatomy textbooks and determined that there was a significant overrepresentation of light skin tones and an underrepresentations of dark skin tones (Louie & Wilkes, 2018). Furthermore, racial minorities were often absent at the topic level. These omissions may provide one route through which bias presents within healthcare. Similar findings have been demonstrated in other studies (Louie & Wilkes, 2018; Parker et al., 2017; Parker et al., 2018), with analysis including other protected characteristics such as gender, further supporting the perpetuation of inequity and discrimination.

White males have long dominated as the archetypaI representation in Western anatomy textbooks, typically presented as the "universal model" of the human form (Louie & Wilkes, 2018; Parker et al., 2018; Plataforma SINC, 2008). A study analyzed 16,329 images from recommended texts at universities in Europe, the United States and Canada, concluding that the white male was the dominant anatomical representation (Plataforma SINC, 2008). Whether or not this is a deliberate decision by publishers is not under debate here. The fact of the matter remains that, historically, female anatomy representation was more the exception than given equal representation alongside male anatomy, and the prevailing color of the utilized male representatives was white. This status quo has persisted, despite geopolitical and cultural shifts, suggesting more fundamental issues are at play, and that both organizational and granular level changes are required to redress this imbalance.

Textbooks are only one source of potential bias, technological resources and anatomical models are others. Major manufacturers such as SOMSO[®] began offering black and white skin tone models as part of their general range in the late 1970s. AdamRouilly began offering Clinical Skills simulators with black skin from the 1980s; these have been sold worldwide since then (personal communication) (Adam, Rouilly, 2021). Despite almost 60 years of availability of different skin tones, anatomical models available within departments still lack diversity. Anecdotally, a major challenge associated with the creation of models representing different ethnicities is that there is a danger that models can become perceived as caricatures of racial stereotypes in the way that features are modeled. However, once again, pragmatic decisions predominate and are most likely to explain the reasons for lack of diversity in this area (although, once identified, it becomes imperative to aim to

address such issues). Most universities have a limited budget with which to invest and, as such, models are often a long-term investment, infrequently replaced and typically purchased at the inception of a department. As a consequence of one-time investment, representative models are often not available. The representation is also fairly limited and often polarized into either black or white skin coloring, with no clear superficially visible racial differences visible (perhaps yet again due to concerns about caricaturizing the differences and the ensuing offense that could be caused inadvertently). Within anatomy education, models have much historical significance and form part of museum collections; consequently, white skin models dominate. Manufacturers report (personal communication) requests for a range of mannequins and models of different skin tones, body shapes and face/head profiles. Such a range of representations would not be viable for commercial production, both from a logistical viewpoint for institutions as well as from the viewpoint of fears of presenting stereotypical racial features that may cause offense. Similarly, there have been requests made to manufacturers (personal communication) for a range of skeletons, pelves, and skulls from different races; however, many institutions have their own collections of natural bone skeletons which they use for comparative anatomy, preferring them to plastic osteological models-again demonstrating a lack of commercial viability.

There has recently been a promising change in the landscape with students and the general public alike taking it upon themselves to contribute to decolonization of the curriculum by tackling the lack of representation in imagery. Within the United Kingdom, medical student Malone Mukwende developed "Mind the Gap: A Handbook of Clinical Signs in Black and Brown Skin," to show various dermatological conditions as manifested on darker skin (Finn, Quinn, et al., 2021; Mukwende et al., 2020). Similarly, a mother who was unable to find images of rash on the same skin tone as her son launched an Instagram account, "Brown Skin Matters" to showcase how skin conditions appear on darker hues of skins, compared to how they are commonly depicted in medical texts and websites. More recently, "Black in Anatomy" was created across a number of social media platforms as a "safe space to network, uplift, support, and amplify the Black contributions to anatomical science" (Black in Anatomy, 2021).

The recent activity to redress the balance goes some way to improving the potential for tackling inequalities. Despite these positive steps, caution must be exercised to ensure that imagery and associated content are as diverse and inclusive as possible and avoid perpetuating associated implicit biases (Finn, Ballard, et al., 2021). It is crucial to take a critical lens to antiracism initiatives within anatomy education (Kendi, 2019; Vass & Adams, 2021).

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Unfortunately, initiatives are often regarded as performative when institutions are not dedicated to taking a reflexive and critical examination of their role in racism and the language and methods they use to combat it (Alwan, 2020; Gutierrez, 2020). This includes an awareness of the potential for curricula to promote further health inequalities (Finn, Ballard, et al., 2021).

2.2 | The difficulty with talking about difference

Anatomical variation is well-documented, yet typically focuses on neurovasulature (e.g., pelvic vasculature) or sex-related differences (e.g., breast tissue and structure) within texts and curricula. Despite the existence of observable differences in individuals and populations (e.g., skin, eyelids, hair, and teeth), acknowledging differences is challenging and riddled with ambiguity for both educator and learner alike. There is almost a fear of talking explicitly even about very obvious surface anatomical differences between certain groupings of people when teaching anatomy. It is worth noting that in the area of race, we are always having to actively group people, emphasizing certain similarities and differences, and drawing neat and tidy lines across the fuzziness of nature-in any study of racial differences, it would be prudent to interrogate the criteria used to distinguish, say, black people from white people, if indeed these are given. This grouping can relate to certain classes of bodily difference and not others. For example, male skeletons typically have more bone mass than female skeletons, which perhaps can be discussed, whereas discussion of the epicanthic fold of the Asian eye may be considered taboo, at least within Western contexts. This inhibition comes up with respect to sex, but anatomical variation along racial lines is arguably the domain of greatest sensitivity. There are likely to be several important reasons for this, which we briefly explore here.

In 1903, Du Bois coined the term "the color-line" to denote the ultimate cleavage in American society; he postulated that "the problem of the twentieth century is the problem of the color-line" around which inequality of opportunity and inequality of experience was maximally organized (Du Bois, 1903; Gannon, 2016). However significant (or not) racial differences are biologically speaking, humankind has used select visible racial criteria as the basis for slavery, colonial domination, and continuing oppression. If racism in its manifest forms is about the dehumanization of the racialized other, then the otherwise relatively insignificant signifiers of race, that is, manifest physical differences, are likely to be loaded with emotional significance, societally speaking. During the apartheid era in South Africa, for example, "failing" the "pencil test" (i.e., having curly hair that hung onto a pencil) meant that someone of uncertain racial origin would be consigned to the *colored*, rather than to the *white* racial category, with all of the societal opprobrium, family separation and material disadvantage this brought with it. Little wonder then that racial differences, with their propensity to bring out the worst in humanity, continue to be taboo.

Psychological frameworks (Dalal, 2013; Scott, 2011) suggest there is a concomitant anxiety about acknowledging racial differences because those differences do a lot of defensive work for individuals; to clarify, the worst of humanity (e.g., the supposed terroristic tendencies of radicalized Muslims or the supposed intellectual inferiority of black people) can be, psychologically speaking, located and locked away in certain groups of people, as long as we do not become too familiar with "them" and have our defenses challenged through realization that stereotypes are likely to be false (Dalal, 2013; Scott, 2011). Not acknowledging and talking about the differences, then, might be one way of denying that racial differences in anatomy are actually relatively insignificant when compared to anatomical similarity across populations. Racism (and this putative function of locating the worst in "others") depends on stereotypes. Everyday culture is rife with the stereotyping of racialized bodies. According to some psychological theory (Dalal, 2013; Scott, 2011), looking beyond these stereotypes to the actuality of complexity across a spectrum requires overcoming deep-seated, protective prejudice, that is, continually working at it.

A simpler explanation of the difficulty in discussing anatomical variation is that those involved in education are anxious about saying the "wrong thing" and being perceived as racist or on the wrong side of history. With BLM and associated activism, we are potentially in the midst of important societal transformation. People from marginalized groups, not only racialized, have been emboldened to talk about discrimination and demand justice. In education, some students are playing an increasingly active role in shaping curricula, with an associated emphasis on social justice (Jackson & White, 2020; Murray-García et al., 2014; Wear et al., 2017). Educators, however, can feel a pressure not to say anything out of keeping with this agenda, even when it contradicts their long-held knowledge and beliefs-and often even scientific evidence (Murray-García et al., 2014; Paton et al., 2020; Vass & Adams, 2021). Pejorative responses to calls for social justice, evident in terms such as "cancel culture" and "wokeness," speak to this anxiety about being found to be on the wrong side of history in the court of public opinion. Instead of formal knowledge and open dialogue about racial variation, there is often a reliance on "tacit

knowledge" of how racial differences manifest clinically in anatomy.

Why is being able to talk about racial variation within the context of anatomy education important? Arguably, it is important, as any science depends on observation and the communication of those observations. This is such a truism that it could almost remain unstated, but anatomy is also a science of, among other things, human life and death. Observing ourselves is always complicated, and clear communication and open dialogue is perhaps even more important within this specialism than within the other sciences, primarily to mitigate against anxiety-exacerbated cognitive biases and pervasive societal stereotypes.

At heart, more inclusive and effective anatomy education translates into better patient care for the range of diverse ethnic communities within a population. Again, this is such a fundamental point that it is easy to overlook. In seeing and speaking about racial variation in anatomy, the practitioner may be motivated by supporting informed patient care, rather than scientific racism. It is rarely that simple. Psychology has suggested that motivations are always mixed and sociology, in turn, has illustrated how the individual must navigate power structures that influence what they do to others and what others do to them. With an understanding of the underlying psychosocial complexities in mind, it is important to ask ourselves why we would choose to focus on any particular racial variation in anatomy, and then let those learning from us ask us the same.

Quite apart from the implications for communication and transparency, what is at issue here is the culture of anatomy education. The implication becoming apparent in this paper is that anatomy education is not only the study of the structure and parts of the body, but also the space around that body. Anatomy teaching should go beyond biology and structure into sensitivity and receptivity to the many questions learners bring, especially around the emotive topic of race and racialization. To state this clearly: it is not just what we are prepared to talk about but also the way in which we talk about such matters that defines the discipline and adds value to learning encounters (and, ultimately, to patient care and patient outcomes).

2.3 | The impact of the hidden curriculum

Both of the aforementioned considerations, visual representation and anatomical variation, provide examples of where the hidden curriculum has potentially manifested within anatomy education. There are tacit, implied and hidden messages in everything we do and do not do as educators (Finn & Hafferty, 2020). One example is in our choices as educators to use or not use (institutional finances and logistical challenges permitting) diverse life models when teaching surface anatomy. Another example is whether we deliberately avoid discussions of race within our anatomy teaching encounters. Matthan and Finn (2020) provide a discussion of the hidden curriculum associated with the use of imaging and digital resources within clinical education (Matthan & Finn, 2020). What is clear is that the hidden curriculum is not a space in which we can deliver "teaching by stealth" (Aka et al., 2018), it is rather a space that can be deliberately exploited to deliver messages to our learners. Because it is experienced differently by everyone, we can never really see what is hidden.

The hidden curriculum refers to the tacit, implied, unwritten, unofficial, and often unintended behaviours, lessons, values, and perspectives that students learn during their education. (Finn & Hafferty, 2020)

Despite extensive and deliberate use of diverse racial surface anatomy models in delivered teaching sessions, one of the authors (of mixed racial background) was asked for a "Black Anatomy Curriculum", and for this to be delivered alongside (what can only be presumed to have been considered) the prevalent white anatomy curriculum. This arose from the misconception that there are evident racial differences in gross anatomical content that were deliberately being left out of the teaching, and to satisfy the current "Equality, Diversity and Inclusion" educational exercise, it was felt that a parallel "racially diverse" curriculum should also be delivered. One immediate response might have been to say there is no such thing and have left it at that. However, another more productive response could be to consider where that question came from, why it is relevant and especially when and in what context it was raised, and talk to the students about their curiosity and/or concerns. Were these students in some way trying to redress the imbalances and insensitivities characteristic of the hidden curriculum? Despite its conventional context being the laboratory, anatomy education is not hermetically sealed off from the world. Issues playing out in society seep into the lab, just as this happens in other areas of education; the dynamics of power differentials and prejudice will characterize much of the interaction that makes up teaching and learning in this space.

Thinking and talking about racial dynamics and racism can often become unhelpfully black-or-white. Issues and positions fall onto either side of a divide and scope for nuance, complexity, and the messy business of working things out is reduced. Someone retweets a message with perceived racist sentiments. They may be deemed racist, then they fall onto one side of a divide (opposite the supposed nonracist). Their whole character is tarnished and seemingly irredeemably so (cf., earlier discussion of how we are apt to locate all the badness in some "other" and thus escape association and related anxieties). People are supposedly "woke" or reactionary, there is nothing in between. Anatomy in the West did not even, until recently, do black-or-white, with the overwhelming preponderance of white bodies, whether we were referring to textbook representations or the cadavers to be dissected. Now it appears that black models are increasingly included in surface anatomy textbooks and atlases, although the wider spectrum of shades of brown—that space in between—is rather curiously omitted altogether.

When we refer to the hidden curriculum, however, we also have to consider the access and participation of black student and staff bodies in this space. Joseph-Salisbury (2019) recounts the story of Femi Nylander, an Oxford University alumnus, who finds himself causing a scare on a visit to an Oxford college simply by dint of his blackness (Joseph-Salisbury, 2019). Joseph-Salisbury uses this incident to illustrate the workings of structural white supremacy in Higher Education, drawing on Puwar's (2004) work to show how Nylander's was a Black body out of place (Puwar, 2004). How out of place, then, might nonwhite people feel within the anatomy education space? There are a number of factors to consider, including the ethnic make-up of faculty, the range of bodies represented, the range of body donations received and the ethnicity of the donors, the way in which bodies and body parts are handled and talked about, religious and spiritual beliefs about life and death, the anatomical facts as against the lived experience of those facts, unconscious bias and racism.

2.4 | Reclaiming history, reclaiming the space, reclaiming identity

There is often profound mistrust of the branches of science focusing on human biology, bodies, and healthcare within certain ethnic communities (FitzPatrick et al., 2021). This has to be understood through acknowledging the impact of colonialism, historical abuses, and ongoing racism in society and healthcare (FitzPatrick et al., 2021). Current feelings about historical abuses of certain racialized bodies in science and medicine in particular (e.g., Tuskegee, Sims, and Lacks) and, indeed, current disparities in the care of and outcomes for black patients (Greenwood et al., 2020) may be directly implicated in the lack of African Americans, for example, participating in whole body donation (Werede & Thompson, 2017).

When hands-on anatomical dissection became popular in medical education in the United States and the

United Kingdom in the late 18th and early 19th centuries, demand for cadavers exceeded supply. The physical and documentary evidence demonstrates the consequent disproportionate use of the bodies of the poor, the minority ethnic populations, and the marginalized in society in furthering medical education and anatomical science. The resulting progress has benefitted everyone in principle, although some argue it is still the most privileged in society (i.e., in the West, associated with fairer skin tones) that continue to benefit from scientific advances gleaned from the usage of unconsented bodies across the poorer communities, under which several racial minorities must necessarily sit. This is the uncomfortable but vital history and context of anatomy education that needs inclusion in formal curricula. Psychology tells us that that which cannot be spoken is instead enacted.

such painfully contentious Can matters be discussed—and do they need to be discussed? Is the dark humor that helps so many practitioners cope with the nature of the work something that can be shared or, is it at the expense of certain groups and, so, exclusionary? Dueñas et al. describe the subjective nature of humor within anatomy, highlighting its use within the anatomy laboratory as subjective and contentious, thus humor becomes a component of the hidden curriculum (Dueñas et al., 2020). They study reported the use of an "internal barometer" as a self-gauge for judgments as to whether jokes or mnemonics where appropriate. Judgments included: "Would this cause me personal offense? Is this my type of humor? Is the intent malicious?"

With this, we come back to the request put to one of the authors for a "Black Anatomy Curriculum". Were those clamoring for this moved to find a separate space because they felt excluded from the existing one? Perhaps such a request is not surprising given the widespread calls for social justice and decolonization in education. It is a shame, however, if racial differences in this manner crowd out the overwhelming human similarities that are foundational to anatomy—99.99% of our genome is shared, after all (Chou, 2020). Given the prevailing whiteness of the anatomy space in the Western country in which this request was made, the students' request may also have contained an attempt to reclaim their identities and an attempt to find a safer space. Their request then can be framed as a challenge to the discipline for a more inclusive and enabling culture.

2.5 | What do educators and their institutions need to do? A starting point for educators

In order to contextualize the recommendations from our paper, we offer a case study (see Box 1), which can be

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BOX 1 Worked example on the anatomy of the skull and face

Let us think about the bones of the skull and the tissues of the face (Aka et al., 2018; Joseph-Salisbury, 2019; Puwar, 2004). It is a fact that the size and shape of the skull varies between different races and thus have long been used as a way to justify the existence of different races. Historically, and importantly now refuted, the structure of the skull was used as a means by which to:

- Position various races on the evolutionary scale.
- Exemplify immutable personality types.
- Identify criminal or more intellectual individuals.

Where differences do exist

- Many are only observable with specialist knowledge and measurement.
- They are virtually impossible to bring into the classroom to diversify anatomy teaching.
- They are less varied and pronounced due to mass migration and blended global populations.
- There are differences in the overlying tissues too due to underlying osteology foundation.

These are some examples of observations relating to race that have been made in more historic time:

- Asian skulls have circular orbits.
- Africa skulls have wider nasal apertures and flatter conchae.
- Degree of prognathism (protrusion of the mandible) and orthognathism (the state of not having the lower parts of the face projecting).
- Caucasian skulls have smaller teeth and a narrow nasal aperture.
- There is an absent or lower crease in the Asian upper eyelid.
- Asian eyes have the inner corner covered (the epicanthic fold).
- Caucasian eyes have the inner corner always exposed and an external fold at the outer edge.

We must consider what elements of the information above are relevant when teaching healthcare professionals about racial differences manifesting in the skull and facial tissues. An illustrative example is the nasal conchae which can differ in size and angulation between races. An awareness of such helps the clinician to undertake a procedure with sensitivity to the racial differences without causing harm. A nasendoscopy device placed into the nostril of a patient with a Caucasian heritage needs to be placed with different considerations in mind to that being inserted into a patient of African heritage. If this is done properly, the patient will suffer minimally.

Stakeholders in decolonis ation of the anatomy curriculum



FIGURE 1 Stakeholders in decolonization of the anatomy curriculum

used as an example to frame your thinking about what is relevant and achievable when decolonizing/reinventing the curriculum. Before embarking on such a journey, it is worth identifying your stakeholders, these are delineated in Figure 1. Figure 2 represents an accessible summary of some of the main considerations for starting to decolonize the anatomy curriculum. Box 2 presents a reflective opportunity, prompting users to think about whether to bring race into the anatomy classroom.

Promote individual and institutional advocacy and learning

Promote a culture where individuals and institutions advocate for curricula change. Individuals should take responsibility to educate themselves about issues facing the community.

Provide an environment to discuss race and racism

Race and racism can become taboo topics within anatomy. Create a safe space and encourage open conversation. Don't permit comparative anatomy discussions to become taboo. Acknowledge intersectionality.

Avoid caricatures and stereotypes

All resources should avoid racial stereotypes and caricatures should be avoided. Some models exaggerate features thus creating an inappropriate caricature of a particular race. Stereotypes in course content and assessment items must be avoided.

Ensure diverse racial representation in resources

Many institutions have white models and imagery within the laboratories and course materials. Ensure that all races are represented. Invest in models that are not white.

Use inclusive and appropriate language and terminology

Ensure that the language used to describe protected characteristics, including race is correct and appropriate. Make sure that language is inclusive and accessible.

Considerations for decolonization of the anatomy curriculum



Embrace the arts and humanities

The arts and humanities can be utilized to help develop skills and behaviors that can't be taught. Such approaches can assist with cultural competence and insight.

Avoid archetypal representations

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White male bodies should not be positioned as the norm for anatomy. Encourage diverse representations of anatomy across the curriculum.

Contextualize course materials for students

Describe the cultural and historical context of course material. Explain assumptions and aspirations that generated your course material. Use sensitive trigger warnings where appropriate.

Increase surface and living anatomy

When representation is absent from texts, models, and cadaveric anatomy, utilize living anatomy to promote diversity. Peer physical examination or arts-based approaches to anatomy education can ensure a more inclusive anatomy curriculum.

Be aware of the hidden curriculum

Awareness that the hidden curriculum exists is important. However, it is experienced differently by each individual, is tacit and implied. It can't be used as a space to teach by stealth.

FIGURE 2 Considerations for decolonization of the anatomy curriculum

Redesigning, reshaping, and reframing curricula can be overwhelming for educators, who often do not know where to start. In order to assist educators in thinking about making their curricula more inclusive, and redressing some of the historic imprints of colonialism, we have provided our key considerations. These brief

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Shy away from frank and

difficult conversations.

Homogenize groups.

other agendas.

Favor only Western

perspectives.

of physical

imagery.

Work in a silo.

Treat decolonization as

supplementary to any

Rush or make quick fixes.

Underestimate the power

environments and

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BOX 2 Curriculum checklist for considering starting the process of decolonizing curricula

- Am I trying to achieve inclusivity, decolonization, or both?
- Who are the stakeholders and how do I engage them?
- What is relevant to the program/student outcomes?
 - Does this content usefully link to, for example, clinical practice? That is to say, do I need to know this information relating to race in order to change the way I do a procedure or prescribe a medication?
- Is a discussion on observable racial differences required in this context?
 - If so, how can I encourage a safe space in which to have this discussion?
 - If not, how can I explore racial differences sensitively outside this context and convey the underlying message to students that race does not matter in this instance?
- How *might* race be manifesting in the hidden curriculum (at a sessional, program, or institutional level)?
- Have I asked my students their opinions on the content, delivery and messaging?
 - If not, why not? If yes, how is it going to change what and how I teach?
- Who else should I involve in the process of reinventing the anatomy curriculum?
 - Who are the stakeholders and have they all had an opportunity to voice their opinions?
- What adjustments can I reasonably make to ensure delivery of this content is inclusive?
- What resources am I using in my teaching?
 - Do they provide a realistic representation of the society within which I teach?
- Is the whole spectrum of human diversity represented in my resources?
- What is my aspiration to achieve in subsequent iterations, for example, with additional time or financial investment?

considerations, which it is hoped will serve as a starting point to making more lasting and meaningful curricular changes (and embarking on a more reflexive inclusive anatomy education journey), are based on our practical

BOX 3 The Do's and Don'ts starting to decolonize your curricula

Don'ts

Do's

- Assess and articulate your starting point on the decolonization journey.
- Create good practice networks.
- Engage in external review of your program with a focus on decolonization.
- Empower staff and students to get involved.
- Create dignity and respect champions.
- Communicate efforts and activities regularly to all stakeholders.
- Gather feedback and evaluate interventions.
- Recognize that decolonization covers intersecting issues (gender, race, culture, etc.)
- Listen and appreciate divergent opinions.
- Think locally, nationally, and internationally. Fora and networks are useful places for knowledge and idea exchanges.

experience and the wider literature, and are as follows (Box 3):

- Consider representation in imagery, models, and life models: It is important that resources are as racially diverse as possible.
- Acknowledge intersecting identities that students, life models, or cadavers may hold/have held: Intersecting identities impact on power dynamics and experiences it is important to be cognizant of the multiple protected characteristics someone may hold/have held.

- Advocate for the importance of race in anatomy education: Change takes time, keep being, an advocate for the process of decolonization.
- Provide a safe space for discussion of race, racism, and lived experience: Students, faculty, and other stakeholders should be supported in discussing their experiences, and a safe physical and emotional space provided to do so.
- Avoid reductionist thinking and polarizing into the black-white dichotomy: Colonization occurred globally, it is not only about black lives. Remember that race and skin color are spectra. In particular, remember to include the large middle ground of blended backgrounds who rarely feature in the race debates.
- Avoid stereotyping and creating caricatures: Sometimes in our efforts to be diverse, we fall into the trap of stereotyping. The creation of clinical cases is a particular danger zone for this.
- Avoid archetypal representations: Anatomy has long used the white male as the archetypal representation, both within text and graphics. Care should be given to use all genders and races where possible and appropriate.
- Contextualize course materials for students: It is important for students to understand the history and context of the materials they use. For example, where did the illustrations come from and how were the bodies utilized when they were developed (e.g., Nazi Germany, vivisection, etc.) (Mbaki et al., 2021).
- Increase surface and living anatomy: Surface and living anatomy offer a valuable opportunity to ensure anatomy teaching is more racially diverse and representative. Think about recruiting life models from a diverse spectrum of people. Using tools such as body paint or art based approaches can bring living anatomy back to the fore (Dueñas & Finn, 2020).
- Learn! Training and reflective practice is important: We must understand the history and significance of colonization, as well as read on racism and cultural diversity.
- Bring to the surface any kind of tricky topic relating to visible differences: Use the safe space that you have created to ensure difficult topics can be discussed.
- Be aware that the hidden curriculum exists but is experienced differently by each individual: Tacit and implied by definition, the hidden curriculum is where students *may* pick up on role modeling, attitudes, racism, and other messaging. Awareness of the potential impact in this space is crucial (Finn, Ballard, et al., 2021).
- Embrace art and the humanities in order to develop cultural competence and insight: Where conversations may be difficult, lived experience needs to be explored,

or resources for expensive models are sparse—the arts and humanities offer much added value to the curriculum. Poetry, art, drama, to name but a few can offer a space for exploration of complex issues (Brown et al., 2021; Finn, Brown, & Laughey, 2021; Laughey & Finn, 2021).

 Reflect on past practice and look for opportunities to address any lack of inclusivity: Looking back at what has been delivered and why, and then addressing inequalities and inconsistencies will help further the decolonizing process as well as develop a more inclusive anatomy curriculum.

3 | CONCLUSIONS

Making steps toward truly inclusive curricula, codeveloped with students and other relevant stakeholders, is plausible. Educators must focus on what is relevant within teaching, yet balance this with a space for tricky conversations about race, racism and racial differences, never forgetting the primary aim of anatomy education which is to equip healthcare professionals with accurate information to enable them to do the best they can for their patients. The hidden curriculum is hard to see by definition, but an awareness of its existence and the potential impact it can have on a learner is paramount when tackling systemic racism and training the future health workforce. Delving deep into established practice and exposing areas for improvement within anatomy curricula is ultimately the responsibility of educators and institutions dedicated to inclusivity. Such processes restore health and dignity to populations (Wilson & Cavender, 2005).

Hubris and arrogance have been cited as causing educators to think that making curriculum level changes can positively affect healthcare systems or can transform trainees' experiences (Whitehead et al., 2012). While tweaking curricula for social justice purposes may be likened by some to the metaphor of "fiddling while Rome is on fire," tackling health inequalities must start somewhere and perhaps the anatomy laboratory is no worse than any other place—after all, the future healthcare workforce are also the future policymakers. Micro-level changes accumulate to ultimately bring about large-scale transformative change, and anatomy education could do with a shake-up of sorts.

AUTHOR CONTRIBUTIONS

Gabrielle Finn: Conceptualization (equal); writing – original draft (equal); writing – review and editing (equal). **Adam Danquah:** Conceptualization (equal);

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writing – original draft (equal); writing – review and editing (equal). **Joanna Matthan:** Conceptualization (equal); writing – original draft (equal); writing – review and editing (equal).

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