Unlearning indoctrination: Tensions between decolonizing curricula and characteristics of whiteness

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Understanding how to make physics instruction more equitable is an ongoing challenge. While many teachers desire this change, few resources support teachers in actualizing DEI efforts in classrooms. In this study, we observed a learning community of physics instructors attempting to decolonize curricula, i.e., critically analyzing practices and content within instruction that decenter the Eurocentric physics narrative. We use a critical whiteness analytical framework to examine tensions instructors encounter as they attempt to reform traditional curricula together. Findings show four characteristics of whiteness and their antidotes across the data: 1) Perfectionism, 2) Sense of urgency, 3) Quantity over quality, and 4) One right way. We found the democratic structure of the group restrained characteristics of whiteness as teachers worked to unlearn norms of schooling. By attempting new ways of thinking to decolonize the curricula and meetings, they productively moved towards a middle ground between the characteristics, and achieve their antidotes.

Keywords: decolonizing curriculum, tensions, characteristics of whiteness
I. INTRODUCTION

Awareness of “decolonizing” curricula within educational research has increased within the last decade [1,2], and is an important way to include a wider range of students’ worldviews, cultures, and identities into schooling [3]. Although there are multiple definitions to describe how to “decolonize” curriculum, all focus on recognizing and interrogating the role of Eurocentrism in institutions today [2]. Our definition of decolonizing curriculum aligns with a process of “(a) recognizing constraints, (b) disrupting, and (c) making room for alternatives” [1]. This entails critically examining how knowledge is portrayed in the physics curriculum, questioning what and/or how work is excluded, and intentionally including cultural examples and perspectives outside of the white, Eurocentric dominant lens. Despite much discussion of decolonizing the curriculum, there are few examples of what this looks like in practice, particularly in STEM disciplines such as physics, and in virtual spaces [1,4]. Our study seeks to add to this literature by sharing the tensions that emerge as a group of physics educators engage in a virtual community to decolonize their physics curriculum. We enlist a critical framework to ensure we consider the ways even a decolonizing group perpetuates inequities. We also aim to describe how tensions were related to the task of decolonization, and how this group actively resisted the colonial framings of learning communities.

II. ANALYTICAL FRAMEWORK

Our study adopts Critical Whiteness Studies (CWS) [5] as a lens to understand how a group of physics teachers attempt to decolonize their curricula, and the tensions that arise in this process. We uplift second-wave CWS [6] which recognizes whiteness as an ideology. We move away from thinking about whiteness as a social construction of race tied to privilege (i.e., focusing on white identity), and instead consider how whiteness shapes power structures and social hierarchies in often hidden ways. We define CWS as “a framework to deconstruct the material, physical, emotional, and political power of whiteness” [5] Our paper centers Okun’s [7] “characteristics of whiteness” as the main tool to interrogate how whiteness both persists and is countered as teachers seek to decolonize their curriculum. Although Okun’s characteristics were not created based on empirical research, numerous scholars have substantiated these attributes [8,9,10].

Tema Okun and colleagues have authored ongoing work to characterize whiteness and how it operates. Aligned with CWS, Okun positions characteristics of whiteness and white supremacy culture as hidden norms that are ubiquitous, regardless of one’s race. Thus, we expect these characteristics to show up in any community, including one that seeks to decolonize curricula. Okun [7] identifies fourteen characteristics of whiteness, along with “antidotes” which oppose them. We will be focusing on four of these: perfectionism, a sense of urgency, quantity over quality, and only one right way. “Perfectionism” centers inadequacy, and internalizes mistake-making as a personal fault. “Sense of urgency” prioritizes timeliness and a need to reach decisions quickly, and “quantity over quality” values measurable outcomes over process. Lastly, “one right way” assumes an intrinsically correct way to operate. Similar to Okun’s antidotes, we also recognize ways in which physics teachers in our study moved away from these characteristics.

II. METHODS

We aim to share what decolonizing physics curricula can look like in practice. Specifically, we seek to answer the following research questions: What are the tensions that arise among nine secondary physics teachers attempting to decolonize a physics curriculum? How can teachers navigate obstacles to decolonizing physics curriculum?

A. Data collection

Eight physics teachers who attended a conference designed to help physics teachers incorporate social justice pedagogy decided to start an online, voluntary group to discuss various ways to decolonize physics curricula. At these monthly meetings, teachers examined curricula, designed lessons, and critiqued both pedagogy and knowledge in physics teaching practices. Meetings were intentionally structured to provide as much equality in the decision making and power of each member by rotating roles and making decisions through agreement, herein referred to as “democratic”. Two researchers joined the group and began to video-record the meetings via teleconferencing online (zoom). The videos were collected over a span of eight months. Each video was ~1hr and 30 min. The participants were given pseudonyms: Ruby, Layla, Khary, Gwen, Sharon, Bill, Pearl, Yolanda, Cameron, and Jacqueline. All participants were either physics instructors at the secondary, two-year college, or university levels, or physics education consultants. All participants are located in various parts of the United States and Europe.

B. Data analysis

Transcripts of teacher videos were created and analyzed using Vosaic, an online video analysis software. Analyses of transcripts were conducted using an open coding analysis [11] where common themes of tensions between the teachers the first and second author identified and organized themes in an iterative process. Coding was done over two rounds. The first round of coding was identifying tensions and listing them in a document. In the second iteration, we defined parent codes as major tensions. In our final
iteration, we classified the major tensions into three themes of characteristics of whiteness and their antidotes. These findings were shared with the members of the group. Through this process of member-checking [12], small adjustments were made to the descriptions of the themes to align their perceptions of the meeting tensions with the researchers’ themes.

III. FINDINGS

From the data, we found that teachers negotiated tensions between characteristics of whiteness and their antidotes across three themes: perfectionism and urgency vs. process; one right way vs. many paths forward; and quantity vs. quality.

A. Perfectionism/urgency vs. process

Throughout the interview transcripts, we found examples where teachers undulated between a sense of urgency to develop products and a recognition that they need to move slowly and carefully to do the work of decolonizing curricula. During the meetings, there were several moments of tension between preparing and deliberating about what it means to decolonize physics curricula versus actually attempting to do it with a more hands-on approach (e.g., critiquing a lesson). As a result, there was a hesitancy to get started, and frustration at this hesitancy. This is reflective of the push and pull between perfectionism and a sense of urgency versus a process that requires time to learn and make mistakes.

Several participants expressed frustration that meetings were getting too caught up in details and going in circles. For example, in a meeting regarding lesson planning, Khary spoke about feeling that perfectionism was holding the group back from making progress:

I think we’re getting to the place of perfect being the enemy of good. I just don’t know what the hang up is. Let’s just get our hands dirty already […] I feel like we’ve gotta just take something and workshop it and then move on. We should be on something else… But we are stuck here, and I want us to move forward, however that looks. So if it means taking what’s already been created, and working with that, then let’s do it.

This quote recognizes one characteristic and exemplifies another. Rather than finding a place of compromise, members of the group felt that in order to counteract the negative effects of one characteristic, perfectionism, they must then go in the opposite direction - a sense of urgency. Other teachers similarly expressed the feeling that while what the group had accomplished in previous meetings was important, there was a sense of urgency and a need to stop going over the same ideas and move on to the next step.

Whilst participants were ruminating over why progress seems to have slowed, Sharon articulated in the following quote the group’s sense of being stuck, having completed the ‘easy’ tasks and failing to progress because the tasks are becoming more daunting/difficult:

It could be that we’ve run out of low hanging fruit and now we’re just doing harder work, and therefore it’s slower. It could be that. But I personally feel like the motion has slowed down and… I like moving fast. So when I feel like things are slow, I’m like, ‘oh, therefore problem,’ right? But that doesn’t mean ‘therefore a problem,’ that means ‘therefore slower.’ And so I’m working through, kind of, these intricacies in my mind.

In this quote, Sharon points out that perhaps things seemed to go faster in the beginning because there were ‘low hanging fruit’ to work on first. Sharon exhibits an awareness of how, up to this point, perfectionism hasn’t slowed momentum because the tasks that the group had completed up to this point have not been relatively difficult. However, now that the goals have become more challenging, she challenges herself to not view the slower progress as a problem. Rather, it is indicative that perhaps the group should become accustomed to a new pace, or a new method of working together. Thus, Sharon exemplifies a compromise between sense of urgency and perfectionism - leading to a better appreciation of the process.

B. One right way vs. many paths forward

Another characteristic of whiteness that presented itself in the group, one right way, revealed tensions that emerged while developing and enacting curricula. For example, two participants, Yolanda and Khary, have a conversation about Yolanda’s struggles with the idea of co-creating language with students as it wasn’t the way she was taught:

Yolanda: I think it’s like my own indoctrination. I just think that I was not taught that way. I was taught, you know, the Professor was the holder of knowledge. These are the laws, these are whose laws… I think it’s touching on my own education, actually. And just making me uncomfortable and almost like ‘if I’m doing this in the classroom, like, am I failing as a teacher?’ That sounds so weird. I don’t know, this turned into a therapy [session] but… there’s just something so different about it than I’d ever learned physics, and even taught it. Like, you know, very much I taught it in the past of ‘this is the canon.’

Khary: It feels almost like it’s scary because it’s not the way we’ve learned or even taught ourselves. But we have to do it. I feel like the fear is a sign that it’s like a thing that needs to be done, right?

In this interaction, we see that Yolanda describes her feelings of discomfort and tension with pushing back against the norms of colonized physics curricula due to her own indoctrination. Khary then replies that these feelings could be an indication that the group is moving in the right direction as there can be comfort in the constraints of ‘one right way.’ In contrast, navigating ‘many ways forward’ can be daunting. In a similar vein, when discussing how to
decolonize force lessons, Cameron questions if it would be acceptable to present a previously canon topic in physics curricula as a problem to students:

As far as why this is a problem, why the story of Newton is a problem... For them to answer that question, them being the students, for them to answer that question they would have to believe it is a problem, right? Or we would have to tell them that it’s a problem. Is that okay for us to do?

As a result of indoctrination, members of the group struggle with battling against ‘one right way.’ As seen in this quote, a new qualin is introduced in not only if they should push against the canon of colonized physics curricula, but how to do so in an appropriate manner. Comparatively, when considering how to design the curricula and what topics to discuss, Sharon wondered how much divergence this group can make from the canon. This is because she recognizes that students who must be assessed on physics outside of the classroom setting may be expected to know certain concepts in a certain manner. Sharon questions how much the group may be over optimistically designing their curriculum, which portrays a worry that the decolonized curricula may not serve students appropriately if they may later be assessed based on colonized expectations of physics requirements.

C. Quantity vs. quality

The final characteristic of whiteness that was negotiated in the data was the concept of ‘quantity over quality,’ where an organization measures success by how much is produced. In the group, however, participants are aware that prioritizing quantity may have negative effects on the quality of the curricula. For example, when discussing what members expect students to ‘know’ by the end of a unit and what students should be assessed on, Pearl expressed concerns that the quantity may be too large for her classroom:

I’m imagining trying to do this with my ninth graders, and it feels like there’s a lot of pieces to it. And it’s almost like there’s so many pieces, I don’t know if any one of them will get done well. And so I’m curious if our ideal situation would be these mega tasks that include lots of things, or if they’d be more like a few smaller tasks that get at more targeted things we’re trying to see?

This quote exemplifies a tension that the group may be trying to implement too many components into assessments and take on too many tasks. Pearl is thus aware that too many ‘pieces’ may end up creating a product - referring to a completed lesson plan and/or completed curricula - that is not ‘done well,’ and asks the group if this is the ‘ideal situation.’ In another meeting, Pearl brought up the point that prioritizing the ‘big picture’ can eventually lead to a design that is not feasible for teachers. Therefore, she argued that it is important to start at a smaller level:

I also think that we continue to talk in these really big pictures - like ‘and this, and this, and this,’ and I think if we just force ourselves to actually make it work for a context, then we could expand from there, and modulate from there. And all the modulation can happen. But it’s easier to modulate once you have something that you’ve done and [we can] see what worked and what didn’t work. I feel like if we start with a modulation, my personal bias is that I think we might run the risk of making things that are... not feasible or feel like there’s like lots of questions about how they actually work.

By getting down a rough outline of the goal, and then ‘modulating’ it afterwards to better suit their needs, Pearl argued that it is less likely the end product will be unfeasible. However, by prioritizing modulation (quantity), she worried that the group runs the risk of making an unfeasible curriculum that doesn’t actually work when implemented. Ruby also contributed to the conversation of quantity over quality in an earlier meeting when she suggested that the feeling of ‘stuckness’ may be due to the fear of starting the process of creating a ‘product.’ She then referred to a potential method of how to move forward past this fear by taking an already made lesson plan and ‘playing’ with it until the group was comfortable with the product - thus prioritizing quality.

IV. DISCUSSION

Our study makes space to better understand how teachers can recognize and disrupt colonized curricula and make space for alternatives, which is much-needed in the literature [13]. Using a CWS frame allowed us to identify how even within a decolonizing space, tensions tied to whiteness emerged along three areas: perfectionism/urgency, one right way, and quantity over quality. Each of these tensions created opportunities to push on the normative structures of learning communities. From reviewing our findings, we found that this group navigated these obstacles through 1) their articulation of the tensions, 2) the democratic nature of the group, and 3) their feelings of discomfort while moving toward a middle ground between characteristics of whiteness, and achieve their antidotes as they sought to forge new paths away from a Eurocentric curriculum. Before discussing these ideas, we want to acknowledge that characteristics of whiteness are not a unique finding to this group, nor were they exhibited to an unusual amount. These characteristics permeate into all spaces, even those that are constructed to decolonize whiteness. Members of the group were actively trying to counteract these characteristics, as can be seen in the findings.

Throughout our findings, participants were constantly bargaining between characteristics of whiteness and their antidotes, often working in a middle ground between the two. The duality between the tensions depicts how the group was conscious of enacting whiteness whilst trying to
unlearn the norms of schooling that are tied to whiteness; this creates difficulty when trying to navigate and escape this cyclic pattern. A good example is Khary’s quote regarding ‘perfect being the enemy of good.’ Here she acknowledges the problem of perfectionism, to which the group responded by feeling a sense of urgency to work faster, shifting towards another characteristic of whiteness. This arose from the group attempting to focus on too many details, which detracted from the group’s core values and direction, and hindered the feeling of momentum towards their goals. However, Sharon expressed that though ‘things are slow,’ that did not necessarily indicate a problem despite her tendency to prefer ‘moving fast.’ This middle ground is seen again in the tension between prioritizing the creation of a decolonized product over embracing practices that push against whiteness. For example, Pearl highlighted that having too many ‘pieces’ may result in a product that will not ‘get done well.’ She also posits that there may not be a one-size-fits-all manner to accomplish every task. Both of these examples illustrate how the group moved between characteristics of whiteness and their antidotes.

When considering a reason behind the source of characteristics of whiteness being at odds with both each other and their antidotes, the democratic nature of the group may play a factor. Without a leader dictating what is ‘right,’ there can be difficulties knowing how to move forward when something is in question, creating a hesitancy on how to proceed; hence Cameron’s question regarding how the group should go against the canon of colonized physics curricula. As there were few, if any, examples on how to move in this direction, there was great value in creating their own path i.e. one right way vs many ways forward. Sharon exemplifies this notion when she said:

One thing that is phenomenal about this group is that we don’t have a single leader and as a result, any assertion I make about what next steps should be, who knows if that’s what the others feel right with? We don’t have any single person who’s deciding where we go. I have never been in a group this large that didn’t have a leader that was so functional and that’s really cool. And so we don’t want to lose that.

Despite experiencing this struggle, all members of the group valued their democratic system. Though not having an individual voice to have a final say could contribute to the push and pull between characteristics of whiteness and their antidotes across the three themes, holding to this democratic structure ultimately creates an environment where the group can combat the notion of ‘one right way’ in a decolonizing space through the collaboration of different ideas to forge a new path. Thus, they are able to mitigate tensions between the constraints of norms of schooling and decolonization of schooling.

The findings from our study show that unlearning whiteness while, in tandem, seeking to decolonize a physics curriculum is a disruptive act. Members in the group must work through these tensions while steering through unknown territory, hence Khary’s feeling that “it’s scary because it’s not the way we’ve learned.” Hesitancy also was a byproduct demonstrated by Yolanda when she expressed her struggle with diverging from what she was taught in the past, and changing her expectations and frame of thinking. To Yolanda, it felt ‘uncomfortable’ to bifurcate from her indoctrination.

V. CONCLUSION & IMPLICATIONS

While there have been several groups of educators working on equitable curricula [14-17], we have shown that this work can come with challenges as educators develop methods that reflect inclusivity. This is likely caused, at least in part, by the lack of resources in actualizing DEI efforts in physics classrooms [18]. In this study, we used a critical whiteness framework to examine tensions that arose whilst teachers attempted to decolonize the Eurocentric and white narrative of physics. Our analysis demonstrated ways in which participants navigated whiteness, particularly through their careful engagement with each other, the democratic nature of the group, and how they managed feelings of discomfort. Teachers had to unlearn the norms of schooling and attempt new ways of thinking to decolonize their curricula - which created a push and pull between characteristics of whiteness and their antidotes.

An implication from this study is that teachers can recognize and disrupt the dominance of Eurocentric physics curriculum by creating carefully-structured professional learning communities (PLC). Future research and professional learning spaces should consider the ways in which the structure and group norms influence how members decolonize curricula. We recommend that the PLC structure aligns with a democratic culture, that discomfort is recognized as a norm of this process, and that there is an acceptance of the fact that characteristics of whiteness can be found even in spaces designed with the intention of interrupting whiteness. With these recommendations, other educators and educational researchers may be able to more effectively navigate and actively resist the colonial framings within their learning communities. We recognize the need for further research that captures the actual processes educators undergo as they attempt to decolonize their curricula. Also of interest is research that considers the ways in which characteristics of whiteness harm and/or benefit educators as they decolonize curricula. In addition, our study has found the importance of using a critical lens to recognize the ways in which whiteness co-exists in all spaces, including those that move toward decolonization.

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