



Treading Lightly With Computing Education: Politicized Care as an Intervention of Black Life

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Abstract: This paper arises out of a need to take seriously interventions on anti-Black racism in the computing education space. We extend the framework of *Politicized Care* to an out of school space to explore how Black femme mentors' pedagogy opens up alternative experiences of computing education. We offer another frame for computing teaching and learning that develops protection and care as a part of deep intellectual work. This necessitates our attention to relationships within moment to moment teaching and learning alongside youth. We offer a vignette from a summer STEAM program that highlight aspects of *Politicized Care*. This paper offers a domain specific example of politicized care that may inform future research design.

Introduction

We urge you to tread lightly. To take care, to proceed with caution, to remember, as we journey towards cultivating more space for Black life. This urgency comes from a tradition of Black school teachers who found moments outside of the gaze of white supremacy to provide their Black students with material no textbook would offer (Givens, 2021). To affirm for children's spirits that there are spaces "they are wanted, where they [can feel] happy and inspired" (DuBois, 1935, p. 5). This work offers an example of how we might tread more lightly with the spirit of Black students within computing. Through the framework of *politicized care* (McKinney De Royston et al., 2017), we offer another frame for computing teaching and learning that develops protection and care as a part of deep intellectual work and as an intervention on anti-Blackness within computing education. This necessitates our attention to relationships within moment to moment teaching and learning alongside youth (McKinney De Royston et al., 2017). McKinney de Royston et. al. (2020, pp. 6-7) define politicized care as a framework that allows us to "further understand how Black educators who work outside of white supremacist and assimilationist frameworks conceptualize the notion of protection to enact it to protect Black children from racialized harm."

This is decidedly relevant within computing where the same techniques that students are taught can be applied to systems that further criminalize their existence (Benjamin, 2019; Browne, 2015; Jones & melo, 2021). Centering technological innovation solely as progress, neglects the reality that youth are being asked and invited into developing algorithms that further oppression (Noble, 2018) and creating large scale surveillance networks that ultimately restrict mobility for their communities (Browne, 2015; Benjamin, 2019). When students' physical, emotional, and psychic safety is taken seriously the educational space is transformed to allow them to expand their imagination around new subject matters. In this paper, we extend the politicized care framework to examine a STEAM summer enrichment program called HubSpace, where the programming activities were led by Black femme mentors. We ask: 1) How does Politicized Care help illuminate ways learners and educators can work together within out of school computing spaces? 2) How does Politicized Care shape how computer science is experienced by learners?

Background

Anti-Black racism (anti-Blackness) is the mechanism through which "Black humanity and human possibility are threatened and disdained "by a racial calculus and a political arithmetic that were entrenched centuries ago."" (Dumas & ross, 2016, p. 6) Anti-Black racism suggests that Black experiences are reducible rather than different and interdependent (Dumas & ross, 2016). Anti-Blackness also operates within the Libidinal Economy "i.e. systems of desire and instincts and fantasies and repulsion around skin tone, hair types, and bodies"(Crockett, 2014). This libidinal economy shapes other aspects of anti-Blackness such as experiences of colorism (Crockett, 2014), and the adultification of young Black people (Nxumalo & ross, 2019). The presence of anti-Black racism in the past replicates itself in the present, and cycles within education. This is demonstrated by a "legacy of federal state and district policies and practices designed to deprive black communities and children of educational resources" (Dumas & ross, 2016, p. 418).

We situate the pedagogies within the HubSpace programming group as demonstrating acts of protection and affirmation for young people through the lens of politicized care. Caring becomes political work due to the stakes teachers understand for their students as adults who have previously experienced the racialized harms of schooling. This framework consists of four main pedagogical themes: Political clarity (Beauboeuf-Lafontant,

2005), Communal Bonds (Morris, 1999), Potential Affirming, and Developmentally Appropriate (McKinney De Royston et al., 2017). These pedagogical themes build upon Culturally Relevant Pedagogies (Ladson-Billings, 1992) to attend to layered educational racialized and gendered values (Apple, 2011) within schools. The pedagogical themes are interrelated due to the way they are co-constructed by one another (McKinney De Royston et al., 2017). For example, data that highlights potential affirming pedagogy may also illustrate developmentally appropriate pedagogy.

This is important in contesting a norm of anti-Blackness within computing, where explicitly denouncing racism is met with a denial of its relevance to a “neutral” field like computing (Jones and melo, 2021). Further, this framework emphasizes acts of care as also political and necessary for rigorous intellectual engagement. Knowing the harms that Black professionals experience in the workplace (Jones and melo, 2021) leads to hesitation in emphasizing career or innovation as a primary goal for these pedagogical interventions. Rather the primary goals are 1) to build up educators to be able to adequately care for and love the students that they work with through addressing anti-Black racism and 2) to create computing education spaces that envision Black life. Educators who might take up politicized care within computing help broaden ways of measuring learning within computing in developmentally appropriate ways as evidenced by learner shifts in political clarity, communal bonds, and self-view.

Research design

Context

The data we analyze in this paper is from a 2019, six-week summer STEAM program called HubSpace where 25 rising sixth-grade Black and Latinx learners from a suburb of a major midwestern city worked in groups to develop apps. Many learners in this program were referred by the district as those who may need additional preparation for the transition between elementary and middle school. The curriculum was developed by the mentors in the space who focused on integrating reading and writing into a creative STEAM summer program. Some of the mentors' goals were for the youth to experience being makers, to offer compliments on learners thinking and participation, to care for the community, and prepare to be in sixth grade while having fun.

The seven mentors within HubSpace were people of white and Black backgrounds. The research team consisted of three people of respectively Iranian, Black, and Latinx backgrounds. Many youths viewed the research team as another set of mentors, as we were readily available as support for facilitating groups and answering questions from the curriculum. Similarly, the mentors were also invited to co-create field notes and participate in the ethnography as a part of a research practice partnership (RPP) (Coburn & Penuel, 2016). The primary mentor was Shai, and the secondary mentor was Stephanie. Both are Black femmes and participated in the research and teaching processes consistent with the team's approach RPP. An important detail about the program is that small teams of learners elected to take on the roles of designer, marketer, and programmer while designing apps. Our analysis focuses on the learners that occupied programmer roles.

Data and methodologies

The vignette is composed of a variety of data and experiences. We received IRB paperwork from 13 learners and 5 staff. We collected 6 weeks of audio, video in addition to images, and final artifacts such as project websites. We also explained to all participants that they could ask us to stop recording at any moment. After the summer we highlighted moments of interest within the data and content logged the co-constructed field notes, expanding their level of detail. The final set of field notes (Emerson et al., 2011) consisted of 24 summaries, 3 specific interactions, and 2 content logged programming sessions. We narrowed this data set to follow the trajectory of the programming group as the primary focus of this analysis. We also completed exit interviews with 11 participants which informed the vignette. In this paper, we highlight a vignette that was created from selected field notes. Pseudonyms were picked by participants and the research team. From the larger data set, we narrowed in on specific interactions that highlighted participants of the programming group who had a variety of experiences. To create this vignette we followed a mixed qualitative approach including content logging and ethnography. This vignette and analysis were member checked (Lincoln & Guba, 1985).

Vignette: Black Beauty

This vignette is an example of how within a research practice partnership a mentor's political clarity was supported. Shai's ability to note colorism supported a brief but intentional moment at the group level and acted as an intervention on a sometimes more subtle anti-Black ideology. The primary mentor Shai, identified as a maker for over 7 years at the time, worked for HubSpace and coded and tinkered in her spare time. She is originally from

a nearby midwestern city, and an alum of the city's underfunded public school system. Shai worked with these young girls to identify a pattern of colorism, a prejudice towards preferring lighter skin tones. This form of prejudice can not only shape who is visually incorporated into an app design, but into decision making around who is worthy of friendship, who is beautiful, and who is intelligent. Through this example, we illustrate how the young people's shifts in ideology showed up in their app design.

A group of girls created an app, Black Beauty, that allowed Black folks to see different images of their hair and clothing in a gallery style. They recognized that the media rarely showed images of Black folks and wanted to offer examples of their beauty, and how to take care of it (hairecare, skincare, etc). While their intention was to show the diversity of Black Beauty, they initially were more narrow in their selections of images of "Black Beauty." The marketers and designers in the group often stepped into the coding space to gather opinions on what images would be essential to the app.

During debriefs, mentors and researchers would exchange information on how learners might need more support. After observing Black Beauty's progress more closely, Shai said "I am noticing a lot of their images of blackness represent uh lighter skin people." This was echoed by research team member Layla who had noticed similar patterns among other girls in the program. Layla asked "Do you think you want to talk to them about that?" to which Shai replied, "Yeah, I am just now seeing it." This delved into a moment where Layla and Shai discussed a pattern of colorism in an existing beauty app that many of the girls in the program liked to use. Black Beauty's app could be seen as in conversation with this more popular app, filling a need that the girls may have noticed but not yet articulated.

Following the debrief, Shai asked Black Beauty's programmers "Where does your app start? What's the first thing you see?" and a student responded "African Americans." This comment and the earlier debrief affirmed Shai's choice to have a conversation around the topic of colorism, asking them to consider the diversity of Black folks in their app. This is a move that disrupted harm within a societal narrative of what beauty can be for Black folks and resulted in shifts in imagery and language on their final website. By the end of their time, they had created a draft of an app portraying Black folks of all different hues and hair textures.

On their app's website, the "about" section said: "Black Beauty inspires Black people to bring out their inner Black beauty. It starts working once you go to our home page. From there, there will be different categories. You press one of the categories and it'll lead you to different videos and images on that category. Black Beauty inspires black." They included an audio clip of them saying their slogan "Black Beauty inspires Black... period!" In their final presentation, they extended their purpose to say that their app also aims to offer comfort to Black people.

Discussion

This vignette offers insight on how the mentors' political clarity around colorism was able to help the Black Beauty group shift in consciousness around colorism. As a part of a research practice partnership, Shai was affirmed in noticing this form of anti-Blackness and supported in her further explorations with learners. These conversations cannot be held in accusatory ways, but rather in ways that help open learners' perspectives to what they may not have noticed they were participating in. The learners, whose political clarity was sharpened, shifted their app to highlight a variety of skin complexions and hair patterns. Additionally, Shai cultivated space for the learners to utilize African American Vernacular English (AAVE) as they described the work of their app, "Black Beauty inspires Black... period!" The youth's description also highlights how computing has the potential to be transformative of peoples' world views.

In part, Shai's interaction with this group was successful due to the prior communal bonds she had earlier established with the youth in this group. We see how established relationships supported youths' engagement with mentors, as well as mentors' intentions to understand and support these young people. One challenge, therefore, is negotiating between the availability of support for youth, and the need for mentors' rest to be able to sustain healthy relationships with youth. Having ready and available support and community is essential to these young people's learning experiences. Communal bonds are not structured unidirectionally from mentor to learners', rather they are co-created by youth and mentors engaging together.

Shai believed in these young people's desire to represent Black Beauty, and engaged them in potential affirming ways by pushing them appropriately towards disrupting internalized anti-Black racism by interrupting colorism based logic. They detailed that their app intervention "starts working once you go to the home page," and that they hoped it would offer comfort, showing their belief that they could also help others shift and explore differences in Black Beauty. While not placing ceilings on what youth might do for their apps, mentors also needed to discern when it was developmentally appropriate to offer comfort or to step in more technically. These decisions demonstrate care for the learners' spirits and potential.

Conclusion

Through this analysis, we have offered examples of how viewing interactions through the lens of politicized care opens up alternative models for teaching and learning. Models that are focused on treating young Black people as whole individuals, requiring care as a part of their education. We shift the emphasis from app design, in favor of emphasizing the relevance of communal bonds, political clarity, developmentally appropriate pedagogy, and potential affirmation as opening up an alternative experience for computing education. With this, young people were able to wrestle with subject matters that were meaningful to them, while knowing that the mentors were actively wanting to support their thinking.

This paper offers a domain specific example of politicized care that may inform future research design. Through looking at these examples educators might begin to reflect on their own political clarity and the ways they speak about the potential of their learners. As computing educators shape perceptions of future computer scientists, it is important that we begin to hold discussions around ethical computing and open up moments to interrogate anti-Black logics. Through communal bonds, we see how programming is developed relationally, which led to narratives from Black youth around joy, laughter, and realness in computing. In these moments where we center care and tread lightly, we see how Black Life appears.

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