

# A THEMATIC LITERATURE REVIEW OF DECOLONIZATION AND ABOLITIONIST APPROACHES IN COMPUTING EDUCATION

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KHUSHI MALIK  
*University of Toronto*

RUTWA ENGINEER  
*University of Toronto*

LANZ ANGELES  
*University of Toronto*

ADELINA PATLATII  
*University of Toronto*

ALISHA HASAN  
*University of Toronto*

SANA SARIN  
*University of Toronto*

## Abstract

*This scoping review explores the role of critical and culturally responsive pedagogy in addressing disparities in access to and participation in computer science (CS) education. Despite ongoing efforts to increase diversity, many groups, including women, remain underrepresented in CS. This review draws on Paulo Freire's foundational ideas on critical pedagogy, advocating for a dynamic and ethical approach to teaching that prioritizes critical thinking and community involvement which can contribute to increased diversity in computer science. The review also examines various interventions in literature which incorporate critical, decolonial, and abolitionist pedagogies in CS education. Addressing both the technical and social dimensions of computing, educators can equip students with the tools needed to challenge and*

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## **Cultivating Inclusion through Critical and Culturally Responsive Pedagogy in Computer Science Education**

The field of computing has been striving to increase equality and representation of minorities in the Computer Science (CS) community (Pournaghshband & Medel, 2020) since as early as the 1970s, as reflected in ACM President's Letters (Sammet, 1975). With many cultures, races, and genders underrepresented, the CS field has a pronounced participation gap (Lunn et al., 2022). Women are one of the most notable groups in these marginalized categories. Even though they constitute 50% of the total population, only roughly 30% of females are enrolled in universities to study Computer Science (Garcia-Holgado et al., 2019). With these discrepancies in mind, researchers are making constant efforts to make computer science a more diverse and inclusive field. Therefore, the study of critical pedagogy and algorithmic literacies in relation to computing science teaching has been an emerging area of research (Everson et al., 2022; Ladson-Billings, 1995; Morales-Chicas et al., 2019; Ryoo, 2019).

To build historical context, Paulo Freire is considered a founder of critical pedagogy. He firmly believed that education is not limited to teaching students about facts (Giroux, 2010). Freire's perspective on teaching stems from the idea that it is not about transferring knowledge by applying a standard, impersonal method to all students (Giroux, 2010). Instead, his theory dictates that instruction should be a dynamic and ethical practice that fosters critical thinking and encourages active participation in the community (Giroux, 2010). As stakeholders in education, students and educators must understand the societal challenges in computing and be motivated to resolve them. Especially with the harmful nature of technology and its immense impact on lives, the social responsibility of computer scientists becomes even more paramount. As a result, an ethical and justice-aware classroom that recognizes problems and promotes analytical thinking can ensure the responsible growth of students (Giroux, 2010). Therefore, including these learning objectives in computing curriculum at both the high school and higher education levels by educators, and progressing computing courses to embed social complexities while aligning personal and communal goals, will make computer science more inclusive (Lin, 2022).

Applying critical literacies in a course can increase participation and create a sense of belonging for all students (Gautam et al., 2024). The participatory governance approach emphasizes student involvement. Tim Randolph (2024) performed an intervention that included critical pedagogical techniques in a computer science theory course. The primary purpose of the intervention was to strengthen student autonomy in an otherwise rigid course with the goal of boosting engagement and understanding. In the study, students had the ability to choose between options for certain aspects of the course. The instructors presented students' choices and highlighted the advantages and disadvantages of all options. The students then agreed upon a decision through a guided discussion in the class. Students reported renewed motivation and less confusion through these practices. The researchers showed that this intervention helped students who are traditionally disadvantaged.

In addition to Randolph's views on a less rigid course syllabus, Everson et al. (2022) also supported this preference, contrasting it with strict teaching curriculums. This study used the principles of culturally responsive and sustaining pedagogy in a six-week college preparation program for minority students. The research also investigated the increase in participation of

marginalized students by including them in the discussion about social justice and "counternarratives" in computing (Everson et al., 2022). Students were given autonomy on the topics they chose for projects in the course and their presentations. Furthermore, the course content also led students to have more meaningful discussions in the classroom (Everson et al., 2022). A key component of the course was teaching algorithmic bias—a term referring to the discrimination or unfair outcomes produced by algorithms, often caused by biased data, design flaws, or societal inequalities (Danks & London, 2019). When learning algorithmic bias in classrooms, students chose issues that helped them connect with the material personally for their assignments. For instance, a student built a chatbot on mental health. In another noteworthy instance, when discussing criticisms of computing, students began to ask several questions on enhancing equity when they discovered the commonality of algorithmic bias among darker-skinned people (Everson et al., 2022). The course concluded that by engaging in social topics responsibly, students raised questions that were difficult to answer but necessary.

So, how can we ensure that diverse folx feel a sense of belonging in CS and are supported? Kevin Lin (2022) proposes a justice-centered approach and culturally responsive-sustaining pedagogy. Culturally responsive pedagogy, as defined by Ladson-Billings (1995), focuses on supporting students' intellectual and moral growth, helping them affirm their cultural identities while also developing fluency in other cultures, and encouraging critical consciousness to address societal inequalities. This pedagogy encourages educators to create an environment where minorities feel included and able to voice their concerns (Lin, 2022). Lin advocated for the importance of having instructors and teaching assistants who represent the diversity of the student population, as this ensures that students see themselves reflected in the academic environment. By fostering a sense of relatability and inclusivity, educators can help bridge the gap between students' lived experiences and the content of the course. This not only helps students feel validated, but it also enhances their academic engagement and success (Gay, 2013; Ladson-Billings, 1995; Lin, 2022).

Ryoo (2019) discusses helping marginalized students bring their unique voices to computing in K-12 education. They examined three distinct classrooms that mainly consisted of minorities in CS and found that with the right motivation and direction, most students expressed their interest in using CS for social change. Culturally responsive computing gave students autonomy over their projects in the class and compelled them to choose personal and important topics (Ryoo, 2019). Building on this, Gautam et al. (2024) also showed that integrating social issues with technical content helps students see the relevance of their work in the community. Their curriculum made students observe their surroundings, family, and friends as well as their use of technology in everyday life. The students were encouraged to interview their families, friends, and neighbours to see the various ways technology is integrated into daily activities. This implementation moved forward from just discussions in class to letting students witness the societal relevance of technology. Even in the course, students were taught the basics of loops and conditionals using scenarios that they can experience in everyday life (Gautam et al., 2024). For instance, the IF conditionals were taught in a situational way: choosing a gift for their friends within a budget. The exercise along with the way the course was structured, ultimately, highlighted the significant role that technology developers play in shaping these systems.

These research studies underscored the ethical and social responsibilities that developers have, given the profound impact their creations can have on users' lives. Developers need to be aware of how their decisions can influence society, including issues related to privacy, accessibility, and equity (Gautam et al., 2024). There were discussions in class about ethical reasoning, the impact of social power on developers, and their responsibility. Ultimately, by applying Freire's ideas, students learned to think of their consumers and the people whose lives will be impacted while using their applications. Thus, they started to think about factors like gender and age, and how these would lead to easier accessibility for all stakeholders. Computing is not a one-sided field, and it's crucial to highlight the importance of diversity in the development process to create technology that welcomes a wider audience. Developers from diverse backgrounds are more likely to design inclusive technologies, and working with a broad user base helps ensure products meet the needs of all groups (Warschauer et al., 2024).

### **Rethinking Computing Education Through Decolonial Perspective**

Decolonial theory seeks to dismantle the hegemonic views of power, knowledge, and existence within society (Cruz, 2021). It sees that these three domains have been dominated by Western-centric and capitalistic ideals, due to colonization and coloniality (Cruz, 2021). In this respect, decolonial theory believes that Western-centrism dominates how students think about technology, conditioning them to think from a singular Western-centric perspective. In consequence, decolonial theory opts for a "decolonial pluriverse" (Cruz, 2021, p. 1854), seeking to decolonize technology by introducing other ways of thinking. For Cruz (2021), decolonization can occur in two ways: indirectly and directly. Indirectly, educators can aim to teach students about the past histories and philosophies surrounding technology, exposing students to perspectives distinct from society's Western view (Cruz, 2021). Alternatively, educators can directly decolonize technology by seeking aid from marginalized peoples, shaping curricula away from Western centrism. In this sense, decolonial theory challenges the mainstream, Western-centric influences on culture and ideals, and amplifies marginalized peoples' voices. By analyzing power structures and learning from the experiences of marginalized communities, decolonial theory advocates for more inclusivity and diversity in computing education (Cruz, 2021; Ugwudike et al., 2023).

This section of the literature review explores how educators have redesigned their computing curriculum in an attempt to decolonize it. Furthermore, this section examines the practical outcomes of these efforts, and the challenges educators faced amid coloniality.

Notwithstanding, applying decolonial theory to STEM disciplines, like computer science, presents educators with a few key challenges. Among these is potential resistance from students themselves. From a survey of approximately 400 undergraduate students from the United Kingdom (UK), Tompkins et al. (2024) report that many students were concerned about "bigoted harassment or comments" from "forcing students to engage in" decolonial-related activities (p. 11). Shahjahan et al. (2022) further stress that student resistance is "the biggest barrier to [decolonization]" among researchers (p. 98). Critics have highlighted the struggle that both students and educators may have in understanding decolonial theory. As one undergraduate student articulates:

Issues like these are difficult to address, and as such, students may not know how they would address these issues, so their input may be haphazard, politically motivated, or ineffective. Educators may struggle to distill concrete proposals from suggestions that are able to be implemented. (Tompkins et al., 2024, p. 11)

The student's view underscores the rigorous effort required to teach decolonial theory. Educators not versed in decoloniality may do little to improve the experiences of marginalized people in computing. Even more so, excessive focus on the empowerment of marginalized groups may seem infantilizing to some students, likely leading to an intensification of unfair biases and generalizations. In consequence, educators must be careful in achieving a balance in recognizing marginalized groups in the computing field. Ultimately, decolonial theory promises a more inclusive and diverse future for computing. Yet, inadequately supporting educators with the proper resources and training risks ineffectual learning outcomes or even perpetuating the inequities that the decolonial theory aims to dismantle.

Globally, decolonial theory has sparked some interest from educators. For them, decolonial theory's support for multiple perspectives can aid in producing more well-rounded students (Mdwaba et al., 2023). By reviewing various literature relating to coloniality in an African context, Mdwaba et al. (2023) provide an overview of the strategies educators should embed to decolonize computing curricula. They propose a workshop that consists of three components:

1. Focus Groups and Panel Discussions to provide a way for marginalized people to discuss specific themes in computer science education (CSEd), such as algorithmic bias.
2. Group Discussions to allow for "more personalized and detailed" discussions about specific CSEd-related ethical issues in small groups (Mdwaba et al., 2023 p. 280).
3. Selected Presentations and Multi-Country Representation where industry professionals are invited as guest speakers to discuss current events and innovations happening in the tech field.

According to Mdwaba et al. (2023), these components aim to stimulate "innovative ideas and practices in IT education" (p. 279), while also enabling students to "discover and retain their cultural identities" (p. 282). In light of their claims, adapting these components to other global contexts may allow for a more inviting and innovative computing experience for all students, deemphasizing Western influences by amplifying marginalized ones.

Much like the discussion-based workshop proposed by Mdwaba et al., Karetai et al. (2023) suggest a series of discussions focused on decolonizing computer science (CS) and computer science education (CSEd) for the Indigenous people of New Zealand. Based on storytelling and collaboration, this approximately hour-long session involves Indigenous peoples telling three five-minute stories about their experiences in colonial CS and CSEd. The students discuss these stories as well as envision what decolonized CSEd might look like and how to forward the ideals of decolonial theory. In designing this workshop, Karetai et al. (2022) hope to move "towards a thriving, equitable and inclusive experience for Indigenous and non-Indigenous learners" (p.1225).

Practically, Eglash et al. (2020) demonstrate that acting upon decoloniality can familiarize students with the perspectives and ways of thinking of marginalized groups. Leading a 2017 summer program called “Reimagine STEM” at Northern Michigan University, Eglash et al. (2020) educated 48 high school students about how the Native American tribe, the Anishinaabe, constructed their buildings and tools using arcs. Of 38 students, Eglash et al. (2020) report that 13 students had Hispanic heritage and another 13 had Native American heritage. Additionally, 8 students identified as White, while the remaining 4 students identified as Black. By comparing pre-survey and post-survey results, Eglash et al. (2020) saw an increase in “Indigenous computational thinking” among students (p. 1581). While Eglash et al. (2020) saw an increase in “more accurate and thoughtful answers” among students (p. 1581), they observed that some students could also connect the Anishinaabe perspective to computing concepts. One student noticed that the structural arcs the Anishinaabe used for their buildings were an example of iteration in computing. Other students were able to interpret the questions much more deeply, connecting Anishinaabe arcs to contemporary games and websites. Consequently, the findings of Eglash et al. (2020) illustrate how educators can diversify the perspectives shown in CS/CSEd. By introducing alternative perspectives into computing, like the Anishinaabe perspective, educators can deemphasize the influence of preferring a singular, Western way of thinking. Indeed, educators can indirectly challenge CS/CSEd’s Western-centric hegemony, encouraging marginalized students to share their own perspectives and culture, much like the Anishinaabe. As a result, expanding such decolonization initiatives to groups beyond the Anishinaabe may foster a more inclusive learning environment, replacing CS/CSEd’s Western-centric view with multiple diverse perspectives.

Roldan et al. (2022) achieved similar success to Eglash et al.’s results by conducting a ten-week teen-led program at the University of Washington. Two teens, with the help of three librarians, were tasked with developing a 3D printer curriculum tailored for children. During each week, participants - ten children and eight adults – engaged in small group activities. Despite participants initially conforming to traditional power dynamics, such as children expecting adult participants to assume leadership roles, participants began to overcome these Western-centric norms over time. The findings of Roldan et al. (2022) propose a radically different way of teaching computing education. Rather than conform to the dominant idea of children and teenagers learning from adults, students can, instead, learn from each other. In this respect, by embracing decolonial theory, educators may allow students to become fully collaborative and autonomous learners.

Despite its challenges, educational institutions should not shy away from applying decolonial theory in computing education. While many institutions have tried to decolonize the social sciences and humanities (Shahjahan et al., 2022; Tompkins et al., 2024), STEM disciplines have seen little progress. For some STEM students, decolonization is nothing but “critical race theory” (Tompkins et al., 2024, p. 9) and, therefore, has no place in computing. Others scorn the concept entirely, claiming that decolonization is “part of the insane woke ideology, which [has] no place in academia” (Tompkins et al., 2024). Yet, it is because of this student resistance that educators should seek to integrate decolonial theory into CS/CSEd. Shahjahan et al. (2022) agree, emphasizing that decolonizing pedagogy in the STEM disciplines “needs further examination... given the lack of conversations in this area” (p. 102). This call for decolonization

is echoed by other undergraduate students as well. Although admitting that decolonial theory may be controversial for some students and teaching staff, one student affirms the unique position educational institutions have for decolonization:

[Educational institutions have] an opportunity to be a leader in equality, diversity, inclusion, and decolonisation—all of which are, I would say, at the heart of what [educational institutions stand] for. It's important not to let the vocal minority who are losing their privilege stop them [from] doing the right thing. (Tompkins et al., 2024, p. 12)

Put another way, decolonial theory has the potential to revolutionize STEM, making it more inclusive and diverse. Indeed, as seen from the research done by Eglash et al. (2020) and Roldan et al. (2022), decolonial theory can empower students to become self-sustaining learners, familiar with perspectives beyond computing's Western-centric hegemony. Therefore, more research into decolonization within CSEd is encouraged and needed to explore its full potential.

### **Abolitionist Pedagogy Reshaping Computing Education for Equity and Inclusion**

During discourse about equality in CS education pedagogies, it is essential to include abolitionist pedagogy. Abolitionist pedagogy's primary focus is to increase equality by eradicating injustice that prevails against Black folx. It can be considered a subset of culturally relevant and responsive pedagogies that inculcate the experiences that minority students live through in learning (Sadler, 2024). Abolitionist pedagogy follows the same principles as culturally relevant and responsive pedagogies so that education can faithfully mirror students' identities.

Abolitionist pedagogy encourages students and teachers to dream of a better future. Sadler (2024) described this radical imagination as breaking free from existing limitations to envision new possibilities. Jones and Melo (2021) reimagined how the experiences of Black students would change if abolitionist pedagogy were adopted. They used storytelling to connect with readers, illustrating the history and potential future of the protagonist's life. In the first story, the university's central building symbolizes white supremacy, named after someone who exploited the protagonist's ancestors. In the reimagined version, the "Ubuntu Center" became a refuge and strength for both students and the community, demonstrating how a just CS education could transform society. This vision showed that with the support of a just society, the protagonist was no longer expelled for her opinions but supported. This vision resonates with research on awe and its psychological benefits. Studies show that cultivating awe, as described by Barrett et al. (2007), can reduce the threat response in the amygdala, improving learning and emotional engagement. Keltner (2023) similarly highlights awe's power to enhance connectedness and resilience, which are essential for fostering inclusive educational spaces. Encouraging curiosity and play, as outlined by Doucleff (2021), enables learners to imagine alternative futures with emotional and intellectual investment. Together, these approaches inspire students and educators to envision scenarios that liberate Black folx and generate new opportunities for Black youth in CS, transforming both individual experiences and societal structures (Sadler, 2024).

Historically, underrepresented communities have faced challenges in gaining opportunities in CS. Research has proposed that course curricula frequently contribute to this exclusion (Jones & melo, 2021). This highlights issues with the curricula, as the contributions and viewpoints of Black and minority individuals are often ignored in academic and professional settings. A range of concepts and developments become limited because of this neglect. In addition, it leads to prejudices that support damaging stereotypes. Abolitionist education aims to raise critical consciousness to fight these social injustices and empower the community. Drawing inspiration from educators Paulo Freire (2020) and bell hooks (2014), this pedagogical approach emphasizes critical reflection, transformative justice, and collective action in addressing antiblackness in CS education. hooks' belief in education as a path to freedom and her focus on including diverse voices aligns with Freire's approach and highlights the importance of creating welcoming spaces where students can reflect, collaborate, and challenge inequalities in CS education.

In abolitionist pedagogy, using an intersectional lens can help understand how various types of oppression can overlap and affect lives (Rosenbloom, 2023). CS teachers who aim to prevent new technological systems of control from forming should try to recognize this intersectionality. However, literature shows that search algorithms produce bias that disproportionately harms young women of colour by showing stereotypical content (Noble, 2018; Rosenbloom, 2023). It is essential that programs are capable of accommodating all humans and do not discriminate based on skin colour in the least (Noble, 2018). Eubanks examined the risk and welfare assessments in social service systems and concluded that they unfairly penalize people of colour (Eubanks, 2018; Rosenbloom, 2023).

The reform for more equal structures will start in the classroom, where developers are made. Yet, current classes practice "colour-blind" pedagogical techniques. Colour-blind rhetoric focuses on treating all students the same, which erases diversity and enforces conformity to dominant white values (Ivey et al., 2021). Abolitionist educators' campaign for efforts to employ frameworks that transform white supremacy to support diverse groups of students through their curriculum. In their study, Ivey et al. (2021) suggest that CS instructors are key to identifying the root cause of this discrimination, as they are on the front lines interacting with students. The researchers conducted interviews with first-year university professors across the US over two years, compiling their observations and coding them according to Bettina Love's (2019) theory of abolitionist pedagogy. The study revealed that effective abolitionist educators use frameworks emphasizing culturally responsive teaching, critical self-reflection, and curriculum redesign to center marginalized voices and challenge oppressive systems in the classroom.

Researchers are now considering including frameworks in classrooms that will help them integrate abolitionist principles into CS education. Rosenbloom (2023) describes a dynamic approach to bring about this change by focusing on human-centred ways of understanding. In addition, increasing participation can also lead to the formation of a more inclusive framework. Rosenbloom points out that the deployment of the framework will be the responsibility of the instructors who handle and interact with the current oppressive system daily. This responsibility gives educators two choices: to reinforce a system that marginalizes groups or maintains the status quo, or alternatively, to actively reject the established norms that uphold this discriminatory system. The latter choice would mean acknowledging the contexts of oppression

in the field of technology and forming a more equitable approach. Rosenbloom cited an example of instructors teaching a course, “Algorithms for People.” The instructors talked about Operation Vula, an encryption protocol that was used to fight apartheid. This intervention made students aware of cultural diversity and how technology assisted in revolutionary movements. In the end, this instance promotes justice and reimagination of a structure that makes institutes “places of love, justice, joy, respect, well-being, and radical Black subjectivity” (Rosenbloom, 2023, p. 133).

Abolitionist pedagogy in computing education advocates for creating a new educational structure that empowers students to share their histories and cultures. It rejects the current flawed system, encourages embracing classroom diversity, and challenges dominant norms. This approach envisions a space that celebrates all individuals, free from discrimination based on skin colour.

### **Fostering Social Responsibility in CS with Critical Pedagogy**

Critical pedagogy is a pedagogical technique to sever the traditional pedagogical power hierarchies in the classrooms. It aims to create a safe teaching space for CS students and instructors, as everyone is involved in the ethical and social implications of technology. Therefore, the university becomes one of the target zones for winning this battle against inequality and equal representation. To investigate the minds of recent graduates, Mayhew & Patitsas (2023) revealed some unfortunate results after conducting a survey with a sample size of 5500 students. CS graduates felt significantly less inclined to think of the greater good than graduates from any other major. The results underscore the gravity of the situation and highlight the need for support to enable CS educators to employ critical pedagogy techniques. Providing educators with training and appropriate resources will be effective in integrating these approaches in their courses.

To try and rectify the current circumstances, Mayhew and Patitsas (2023) also talked with some instructors to identify some common approaches that can be used to inculcate critical pedagogies in real-life practice and tie them with our community. The first overlapping theme was to focus on increasing student awareness and educating them about power structures in society. In this approach, instructors create assignments that motivate students to learn the history and socio-political contexts of technological development in their communities. For instance, one project had high school students use Scratch, a beginner-friendly, block-based programming platform, to create stories that provide counter-narratives of their communities, allowing minority students to express their personal and family histories. The students rose above the oppressive structures in the computing space and wrote their own personal stories, building a welcoming place where they belonged.

In the pursuit of generating equal opportunities, critical pedagogy ensures that people from marginalized communities can claim resources that have been conventionally denied to them. The current course syllabi usually ignore the voices of these underrepresented people. By changing these and offering more autonomy to the developers-in-the-making, open conversation can be held, and everyone can raise their struggles to grow together. For example, students can lead constructive discussions addressing the problems society has faced—and still encounters—

to fix them. To recite an example, Mayhew and Patitsas (2023) describe an instructor who applied this approach while teaching in a Brazilian village experiencing an energy crisis. By making the class relevant to the students' lives, the instructor facilitated discussions about their daily struggles with electricity, leading to a collaborative effort to create a helpful device.

Ultimately, critical pedagogy should transform the norms, values, and practices within CS to be more critically aware and socially responsible. One way to do this can be to incorporate relevant projects into the courses that encourage students to advocate for change. For instance, an instructor in a first-year university course had students read significant CS texts, like Judy Wajcman's *Feminism Confronts Technology* and Tara McPherson's "U.S. Operating Systems at Mid-Century". Special emphasis was given to understanding the topics and acknowledging that they are challenging, then discussions were held to deepen students' insights. Through this interdisciplinary combination of CS and sociology, students began thinking beyond mere coding, grasping the societal impact of technology. Additionally, the instructors also included an assignment that made students aware of the biases involved in algorithms. Using a 19<sup>th</sup> century Irish immigration dataset, students learned about basic programming concepts as well as tools to identify and understand biases, helping them see both the limitations and potentials of computer science.

Integrating critical pedagogy into computer science education represents a crucial step toward creating a more inclusive and socially responsible discipline. By addressing key goals, educators can help students look beyond technical skills to consider the broader societal impacts of their work. This approach not only raises awareness of social justice issues but also equips students with the critical thinking skills needed to challenge and transform unfair systems, contributing to the creation of a more just community.

### **Conclusion**

This scoping review emphasizes the impact of critical, culturally responsive, decolonial, and abolitionist pedagogies to uncover the gap in computer science (CS) education. The literature reveals that incorporating critical thinking, ethical awareness, and community engagement in CS education can empower students to challenge existing power structures. Interventions such as participatory governance, culturally responsive teaching, and discussions on social justice issues have successfully increased engagement and a sense of belonging, particularly among marginalized students. However, despite these promising approaches, significant gaps remain in the literature and practice. One major gap is the limited application of decolonial theory in STEM fields like CS, where resistance from both students and educators can hinder the effective integration of these perspectives.

Additionally, while some studies have explored the potential of critical and abolitionist pedagogies, more research is needed to develop concrete frameworks and strategies that can be widely implemented across computing educational contexts. Another gap, as mentioned earlier, is the lack of comprehensive support and training for educators to effectively teach these complex perspectives. While CS educators are not expected to be experts in critical theory, providing adequate resources and institutional backing is essential in the efforts to incorporate these approaches, just as is done for topics like ethics in computing (Madkins et al., 2020).

Integrating critical, decolonial, and abolitionist pedagogies into CS education is not just morally required but is also a necessity for society's future. These approaches can help address the systematic inequalities that have marginalised students and lead to better opportunities and education (Ryoo, 2013; Vakil, 2018).

Our call to action for CS educators is to explore and refine strategies for integrating critical, decolonial, and abolitionist perspectives into CS education; educators can better prepare students to use their technical skills to contribute to a more just and equitable society. Furthermore, students and educators who engage in these critical perspectives are contributing to a shift towards a more just and ethical tech landscape. Although early adopters may face challenges, their efforts will help pave the way for future leaders who will shape the industry in ways that reflect broader social good.

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