



Cultural Relevance: Dismantling the Eurocentric ideals woven into CS curricula

What is the Issue?

Computer science (CS) is seldom prioritized in schools where the majority of students are from marginalized communities, and CS curriculum often denies the historical contributions and cultures of minoritized populations. The absence of CS in schools, combined with a lack of exposure to authentic CS in the community (e.g., programming, artificial intelligence, and cybersecurity), leads to underrepresentation of and diminished opportunities for minoritized people in computing careers. Fallacious narratives about the Black and Latinx communities perpetuate stereotypes about students' motivation and abilities. Culturally Responsive Teaching is an asset-based approach that relies on the strengths, experiences, and identities of all students to enhance the learning experience.

Why It Matters

- ▶ Culturally Responsive Teaching creates equitable educational opportunities for Black and Latinx students.
- ▶ Future technology designers (and citizens) must recognize the needs, contributions, and perspectives of people from all sociocultural contexts.
- ▶ Years of racist, colonial, Eurocentric policies have privileged some communities, practices, and cultures. Education must address these by creating more equitable opportunities and emancipatory environments for all students, not just those who are able to reproduce dominant paradigms.

Things to Consider

- ▶ Culturally Responsive Teaching practices begin with the assumption that students' individual experiences enhance their learning. Be "asset-based" by looking for students' strengths, rather than "deficit-based" by focusing on what students have yet to learn or master.
- ▶ Authentic relationships with students form the basis of culturally responsive teaching. Understanding your students' identities, upbringing, and cultures is imperative to teaching in ways that they understand, just as a teacher could not walk into a classroom in a foreign country without understanding the social context.
- ▶ The classroom environment goes well beyond your four walls. Experts within your students' communities can bring relevant examples and information to support student learning.
- ▶ Varied representation is important for all students, to ensure that they see diverse contributions and the value of Black, Indigenous, Hispanic, and other People of Color in computing and STEM. It is important for minoritized students to see computer scientists who look like them, and for White students to see computer scientists from minoritized groups..

Recommended Actions

- ▶ Find out what interests your students, then find activities that incorporate their interests and experiences. For example, music or storytelling can provide a context for many topics in CS and can be incorporated into examples and activities.
- ▶ Recognize identities your students claim, and find community members in those groups to orient you. This goes beyond bringing in role models to give talks about CS! Create an inclusive educational environment with members of your students' communities. Think about including nearby experts who have bridged this divide, such as computer scientists in your area.
- ▶ Constantly challenge the dominant culture. Help your students develop technical skills to make a better world, without reinforcing inequitable structures. The goal is not to create better workers, but to create better thinkers.
- ▶ Be comfortable engaging in discussions about ethics. Technology is not ethically neutral; help students engage with the ethics of the algorithms that they and others build. Consider including ethically complex scenarios into each unit, providing a central question around these examples that students can engage with as they learn the content. In each unit, push students to think about what communities are helped and harmed by different groups. Ask about the implications of the technology and how implicit biases might affect the outcomes of different technologies.
- ▶ Seek out resources for becoming an anti-racist teacher.

Reflection Questions

- ▶ How do you navigate relationships with students who may be culturally different than you?
- ▶ Think about how you approach your teaching and your assessment. In what ways do you individualize the assessment of growth when teaching computer concepts?
- ▶ What methods do you use to incorporate student voice into the educational design and experience?

Terms to Know

- ▶ **Culturally Responsive Teaching** - Rethinking curriculum to deeply integrate examples that relate to students' identities, drawing from the assumptions that students' lived experiences have provided them with assets in understanding curriculum.
- ▶ **Dominant Ideals** - The capitalist goals that have long shaped US education and are informed by a racist, colonial society.
- ▶ **Minoritized/Majoritized** - Terms that indicate how our ideas about which groups constitute a minority or majority arise from social conditioning and depend more on existing power structures than on who is numerically dominant.

Resource List

Madkins, T. C., et al. (2019). "[Culturally Relevant Computer Science Pedagogy: From Theory to Practice.](#)" 2019 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT), pp. 1-4.

Vakil, S. (2018). "Ethics, Identity, and Political Vision: Toward a Justice-Centered Approach to Equity in Computer Science Education." *Harvard Educational Review*, 88(1), 26–52.