



Introduction

Introduction to Special Issue: Centering Community Healing, Sustenance, and Resilience in STEM and Computing Education Through Art and Social Justice

Abstract

Computing, technology, and engineering education are in particular need of examining how we can bring love, community, and joy to the center of learning experiences to support a diversity of youth to flourish. Computing and STEM disciplines are often taught in ways that detach knowledge from people and communities, making it difficult to explore a variety of personal, social, and societal connections that are not already at the center of the tech industry. These exclusionary practices limit the way work is accomplished—including who is involved in the design work and who technological innovations are designed for; as well as the way the work is situated within our society—including what

problems technology is designed to solve and who benefits from particular innovations (Benjamin, 2019; Noble, 2018). Learning experiences and spaces for technology education should support youth as they develop new knowledge and skills in ways that recognize them as full humans, and enable them to ground it in their ideas, perspectives, interests, goals, identities, communities, relationships, and local environments. The goal of this special issue is to bring together educators', researchers', and youth voices in conversation about how we are centering self-empowerment in our educational work and how we can drive forward our practices.

Keywords

community, healing, sustenance, resilience, STEM, computing, technology, engineering, art, social justice, love, joy, empowerment

How to Cite

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If we give our children sound self-love they will be able to deal with whatever life puts before them.

—bell hooks, *Teaching to Transgress: Education as the Practice of Freedom*

Computing, technology, and engineering education are particularly in need of examining how we can bring love, community, and joy to the center of learning experiences that support a diversity of youth. Computing and STEM disciplines are often taught in ways that detach knowledge from people and communities, making it difficult to explore a variety of personal, social, and societal connections that are not already at the center of the technology industry. These exclusionary practices limit the way work is accomplished—including who is involved in the design and who technological innovations are designed for, as well as the way the work is situated within our society. The limits often also include what problems technology is designed to solve and who benefits from particular innovations (Benjamin, 2019; Noble, 2018). Learning experiences and spaces for technology education should support youth as they develop new knowledge and skills in ways that recognize them as full humans, and enable them to ground it in their ideas, perspectives, interests, goals, identities, communities, relationships, and local environments.

The goal of this special issue is to bring together educators', researchers', and youths' voices in conversation about how we are centering self-empowerment in our educational work and how we can advance our practices. We explore how we can support youth to see themselves as creators with technology and recognize these practices as part of their everyday lives and part of their presence and participation within their communities. Attending to how computing and STEM education are situated in society is essential for creating equitable educational experiences that recognize and respond to how knowledge and technological artifacts impact communities and society more broadly. By actualizing STEM- and STEAM-based content that is reflective of the communities in which youth live, our contributors demonstrate how we can create a more just experience while situating knowledge in a way that aligns with the complexities of life. Importantly, we recognize the challenges of doing this as we try to support the diverse identities of learners and dynamically adapt to the changing needs of our

learners and their communities over time. We explore how individual and community assets, coupled with a grounding in arts practices, can help develop holistic computing, technology, and engineering education.

Educational interventions that center cultural sustenance and asset-based community development provide pathways for learners to recognize and work with the resources that exist within their communities as we support them in strengthening and expanding their reach (Agdal et al., 2019; Alim et al., 2020). The arts and creative production have often been overlooked as an essential part of the development of youth and how we understand learning (Halverson & Sawyer, 2022). Connecting arts and STEM disciplines creates opportunities to develop learners' critical examination and reflection as they explore the subjective, personal, contextual, and societal aspects of STEM fields that are often overlooked. The arts have cultural and historical significance with practices that can support the creation of public artifacts that integrate learners' knowledge, ideas, narratives, and perspectives and have the flexibility to span community contexts. These characteristics present new pathways from which social justice can be centered in STEM education (DesPortes et al., 2022; Pinkard et al., 2017). By forefronting social justice, people impacted by systemic racism and inequities can develop an understanding of the role technological artifacts have in holding up inequitable social systems, and the role they could play in dismantling them (Gutstein, 2012). Dr. Ruha Benjamin (2022) emphasizes the role we can all play in creating a viral response to injustice as each of us enacts change in our everyday lives. In this special issue, we forefront contributions that connect various communities to share knowledge and experiences connecting justice, arts, and STEM education.

Overview of Contributions

Various practitioners and researchers share approaches to and perspectives on conducting interdisciplinary STEM and arts educational experiences to cultivate cultural sustainment and flourishing of youth of color. Narratives from Yamilée Toussaint and Jennifer Loving at STEM From Dance and a discussion with Detra Price-Dennis and Yolanda Sealey-Ruiz exemplify the importance of love, joy, playfulness, and creativity to lay the foundation for learning, growth, and freedom. We see how STEM From Dance has centered joy as a way to empower youth through computing educational experiences that reflect culturally situated

dance practices. Detra Price-Dennis and Yolanda Sealey-Ruiz share resonant ideas as Cami Touloukian engages them in conversation. They explore education as a place for cultivating love and relationships as the foundation for building the world we want to live in. They dive into the importance of creativity and artistic expression as supportive of these ultimate goals that support healing and relationship development within the learning environment.

Work from Mia Shaw and Clarisa James demonstrates the power of narratives and storytelling as opportunities to center learners' knowledge, experiences, and perspectives while offering places for critiquing current systems and societal dispositions. Mia explores how youths *restory* technology narratives through African American women's quilting process. Grounding her analysis using Black feminism-womanism lenses she discusses how her educational approach facilitates rethinking the socio-technical and political characteristics of learning environments that can support youth whose identities are nondominant in computing and technology. Clarisa also centers youth storytelling by focusing on community stories as civic engagement. She discusses the *Anti-Gun Violence Asset Mapping Project* in which historically underrepresented youth participate in a social action project to critically identify and analyze the assets within their communities. She demonstrates how youth can leverage different forms of technology to share narratives surrounding these assets as indirect drivers/levers to combat gun violence and ultimately inspire conversations to influence policy change.

Contributions from Elizabeth Leonard, Clarisa James, and Lora Cawelti and her team emphasize the importance of the arts for centering learners' voices and knowledge, creating dialogue, bridging power dynamics, and facilitating the transformation of participation. Elizabeth reports on Community Word Project 2.0, a transdisciplinary project spanning poetry, visual arts, and computing that works with students from under-resourced communities. She explores how connecting arts and computing can create new ways to value learners' knowledge and expand their access to skills and opportunities with technology. Clarisa examines analogous opportunities in the creation of multimedia content, outlining how DIVAS for Social Justice fosters the development of community resilience through programs and initiatives that provide youth with opportunities to develop art with technology as they elevate their own and their communities' perspectives. Lora Cawelti and her team dig into arts practices within an Artist/Researcher model as a means of supporting inter- and transdisciplinary

participatory action research learning beyond the classroom, engaging with art and science as tools for social change.

Work from Nettrice Gaskins and Kareem Edouard examines how we can center authentic arts practices and connections to youth learners' identities, cultures, and communities. Importantly, they also attend to the critique of the technology and spaces we develop for learning. Nettrice Gaskins draws on social and cultural practices found in hip-hop to inspire historically underrepresented youth in the process of storytelling and the physical creation and fabrication of 3D-printed robotic prototypes, while addressing the potential for bias and stereotypes to be inherently encoded into these technologies. Kareem Edouard presents cases drawing from his work supporting Black male participation in STEAM. He facilitates our exploration of how the sociopolitical characteristics embedded in learning spaces and resources within STEAM education can have both inclusionary and exclusionary elements that we must consider as we design equitable learning experiences.

Last, the issue consists of artistic contributions from youth and the community more broadly. Students from DIVAS for Social Justice share a dance and music composition "Make Me Black" promoting pride in one's culture and identity. Participants in STEM From Dance showcase a dance performance with coded animations designed in synchrony with their choreography. The work exemplifies their artistic expression on the intersection of code and dance. Additionally, we have a contribution from Divinity Nix-Sow who shares photos from her Black History Month natural hair shoot and the poem she wrote that inspired the shoot. The work ties together the richness possible through connecting across various forms of art and the ways it can bring us together as a society.

Together, this scholarship offers perspectives and ideas grounded in a variety of contexts, which can facilitate our continued growth as a community, guiding how we design and carry out STEM, computing, and arts education. The voices add to a foundation laid by researchers before us to continue to support youth of color and those historically decentralized in education, conversations, and applications with technology.

References

Agdal, R., Midtgård, I. H., & Meidell, V. (2019). Can asset-based community development with children and youth enhance the level of participation in health promotion projects? A qualitative meta-synthesis. *International Journal of Environmental Research and Public Health*, 16(19), 3778.

Alim, H. S., Paris, D., & Wong, C. P. (2020). Culturally sustaining pedagogy: A critical framework for centering communities. In N. S. Nasir, C. D. Lee, R. Pea, & M. McKinney de Royston (Eds.), *Handbook of the cultural foundations of learning* (pp. 261-276). Routledge.

Benjamin, R. (2019). *Race after technology: Abolitionist tools for the new Jim code*. John Wiley & Sons.

Benjamin, R. (2022). *Viral justice: How we grow the world we want*. Princeton University Press.

DesPortes, K., McDermott, K., Bergner, Y., & Payne, W. (2022). "Go[ing] hard... as a woman of color": A case study examining identity work within a performative dance and computing learning environment. *ACM Transactions on Computing Education (TOCE)*, 22(4), 1-29.

<https://doi.org/10.1145/3531000>

Halverson, E., & Sawyer, K. (2022). Learning in and through the arts. *Journal of the Learning Sciences*, 31(1), 1-13.

Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. New York University Press.

Pinkard, N., Erete, S., Martin, C. K., & McKinney de Royston, M. (2017). Digital youth divas: Exploring narrative-driven curriculum to spark middle school girls' interest in computational activities. *Journal of the Learning Sciences*, 26(3), 477-516.

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