BRIEF

DESIGNING FOR DIVERSITY PART 3

Implementation of the Equity and Inclusion Curriculum Development Approach: The Role of State and Local Education Agencies

Nonye Alozie
Hui Yang
Andrea Beesley

CCNETWORK National Center

D4D Designing for Diversity

Designing for Diversity Part 3

Implementation of the Equity and Inclusion Curriculum Development Approach: The Role of State and Local Education Agencies

The National Comprehensive Center

The National Comprehensive Center (NC) is one of 20 technical assistance centers supported under the U.S. Department of Education's Comprehensive Centers program from 2019 to 2024. The NC focuses on helping the 19 Regional Comprehensive Centers and state, regional, and local education agencies throughout the country to meet the daunting challenge of improving student performance with equitable resources.

This publication is in the public domain. While permission to reprint is not necessary, reproductions should be cited as:

Alozie, N., Yang, H., and Beesley, A. (2021*). Designing for Diversity Part 3. Implementation of the Equity and Inclusion Curriculum Development Approach: The Role of State and Local Education Agencies.* Rockville, MD: National Comprehensive Center at Westat.

The contents of this publication were developed under a grant from the Department of Education. However, the contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal government.

A copy of this publication can be downloaded from https://www.compcenternetwork.org/.

Introduction

High-quality STEM+CS curriculum materials that are aligned to standards, academically rigorous, and support research-based, effective instruction have a positive impact on student learning (Boser et al., 2015; Steiner, 2017). In addition to curriculum materials from publishers, teachers also use Open Education Resources (OER) which are openly licensed and freely accessible, often online (Hodge et al., 2019; Kaufman et al., 2016). Current content standards and frameworks such as *A Framework for K–12 Science Education* and the *K–12 Computer Science Framework (*K-12 Computer Science Framework Steering Committee, 2016; National Research Council [NRC], 2012) emphasize the need to integrate the diverse needs of students into science, technology, engineering, mathematics, and computer science (STEM+CS) curriculum and instruction while maintaining the integrity and rigor of the standards. In *Designing for Diversity Part 1: Where is Equity and Inclusion in Curriculum Design?*, we addressed the lack of equity and inclusivity in many curriculum materials and questioned whether established approaches to designing and implementing STEM+CS curricula were suitable to the diverse needs of students. In *Designing for Diversity Part 2: The Equity and Inclusion Framework for Curriculum Design,* we described a new approach, *The Equity and Inclusion Framework for Curriculum Design (EI-CD)* approach, for designing and modifying STEM+CS curriculum materials. We introduced two tools—the Equity and Inclusion Design Principles (EI Design Principles) and *Equity and Inclusion Planning Guide (EI Planning Guide).* They support the implementation of the EI-CD approach, a curriculum design and modification cycle that integrates equity and inclusion into curriculum design. The EI-CD approach encourages state and local education leaders, community stakeholders, student advocates, and other contributors to STEM+CS education to collaborate in building the cultural context into the design or modification of curriculum materials. In this paper, we provide suggestions for how state and local leaders can move towards transformation and change in curriculum use in schools and communities that serve students with diverse needs, strengths, and contributions to society.

The State's Role in Supporting Diversity in Curriculum Design and Implementation

State leaders are aware that broadly implementing quality curriculum materials is complex and difficult. Moreover, sustaining reform efforts that address and challenge ongoing systemic inequities through the design of STEM+CS curriculum materials requires action from multiple stakeholders, such as teachers, district leaders, parents, students, the STEM+CS education research community, and local community leaders. Moving teaching and learning from the status quo to education that exposes students in every classroom to high-quality and equitable curriculum means a significant change in the professional interactions and practices of school and system leaders and teachers. To support this kind of systemic change in practice and mindset, we provide suggestions to encourage state leaders to use the Equity and Inclusion Framework for Curriculum Design (EI-CD) approach, along with its supportive tools—the EI Design Principles and the *EI Planning Guide*.

State leaders must work and communicate with local leaders regularly to ensure that students have equitable and inclusive STEM+CS curriculum materials. The *EI Planning Guide* supports engaging state and local leaders in examining curriculum materials using a structured process in which implementation and instructional goals can be addressed. Some goals supported by the *EI Planning Guide* are to:

- Support local districts and schools in identifying relevant community partners.
- Determine how local districts and schools can access information on diversity, equity, and inclusion to strengthen the system.
- Identify the strengths and areas of improvement for each region in your state.
- Determine how to balance support and accountability.

Each state may have a different system for working with diversity and its relation to curriculum and instruction. Some states may have a team of leaders who focuses on equity and diversity. Other states may have a system of leaders at different levels who collaborate on diversity, equity, and inclusion goals. We advocate for the collaboration of stakeholders at all levels focusing on high-quality curriculum materials in STEM+CS. The EI-CD approach supports consistent and ongoing conversation and feedback between multiple stakeholders. States can support districts in their efforts to achieve equity and inclusion by:

- Making student data readily accessible to K–12 teachers, parents, and other collaborative stakeholders. Student data may consist of student achievement status, educational opportunities provided to students, socio-emotional learning needs and supports of students, and the climate and culture of the district and local environment that the students reside.
- Supporting K–12 teachers and administrators in developing their ability to interpret and use student data to make decisions on how to adopt and/or modify STEM+CS curriculum materials that align with the diverse needs and strengths of students.
- Supporting curriculum design teams in adopting and modifying STEM+CS curriculum materials using the EI-CD approach to achieve equity and inclusion in diverse districts.
- Providing professional development seminars and workshops that scaffold the use of the EI-CD approach, technical support opportunities that can help design teams through the process of adoption and modification, and logistical support that assist teams with different aspects of group conventions (e.g., videoconferencing).
- Supporting district programs that are aimed at working directly in high-needs schools and schools with low resources (e.g., mentoring, coaching, professional learning programs).

Student data may consist of student achievement status, educational opportunities provided to students, socio-emotional learning needs and supports of students, and the climate and culture of the district and local environment that the students reside.

» Performing continuous feedback cycles with school districts that monitor the continuous improvement of curriculum programs designed or modified for equity and inclusivity and analyzing how those improvements bring about change in student outcomes.

The Role of Local Education Leaders in Providing Equitable and Inclusive Curriculum Materials

Much of the hands-on equity and inclusion work happens at the district and school levels. We encourage K–12 administrators and teachers to work directly with students as they identify, modify, and implement curriculum materials that meet their unique needs. For example, leverage teacher and local community knowledge of student demographics to promote mental shifts about the relationship between diversity, instructional materials, and pedagogy.

Below we propose action items for creating opportunities for implementing the EI-CD approach.

» Form collaborative communities of practice among STEM+CS teachers and school leaders to share ideas and challenges, develop relationships, and build a body of knowledge about diversity, instructional materials, and pedagogy. Teachers can form collaborative groups with multiple stakeholders such as education researchers, district leaders, and community representatives, and meet with them to make curriculum design and instructional decisions. Not all teachers will be involved in such a process; however, the goal is to include K–12 teachers who are empowered by their districts to represent the needs and strengths of their students and their local communities in curriculum decisions.

» Use the *EI Planning Guide* and EI Design Principles to review and modify curriculum materials. During instruction, teachers can be encouraged to use the EI Design Principles daily (e.g., when planning learning activities and lessons). Teachers may also use the *EI Planning Guide* and Design Principles to adapt OER lessons and activities.

» Collect student data and discuss the EI Design Principles. The EI-CD approach involves collecting data about students. Discussing student data requires knowing the community and the students and using those data to understand what the strengths and needs of the district are for achieving equitable educational goals. Districts are also encouraged to work with state leaders or education researchers to understand, interpret, and use student data in the improvement of their districts.

Curriculum frameworks are good resources for obtaining suggestions for working towards equity and inclusion in teaching and learning.

» Work with education research experts and district administrators to become familiar with curriculum frameworks like *A Framework for K-12 Science Education* and the *K-12 Computer Science Framework*. Curriculum frameworks are good resources for obtaining suggestions for working towards equity and inclusion in teaching and learning. Districts should discuss the amount of necessary additional work that is needed when there are limitations in curricular frameworks for diversity and inclusion.

- Support the implementation of adopted curriculum materials with a particular focus on equity and inclusion. In this, curriculum should be implemented in different districts and classrooms, followed by discussions on how the curriculum faired in different contexts, with different students, and with different teachers. This is done to make adjustments and modifications to support student learning of STEM+CS. Collecting this kind of information may support the development of standards, curriculum-aligned pacing guides, common assessments, and assessment calendars to help teachers make decisions about the amount of flexibility they have to adapt and modify the content, instructional methods, and pacing of instruction to meet the needs of students.

Conclusion

The vision of equity and inclusion in STEM+CS standards and frameworks often falls short in reality due to a lack of diverse voices in the development of these important policy documents (Rodriguez, 2015). As a result, diversity, equity, and inclusion are often missing from curriculum materials developed from STEM+CS standards and frameworks. Therefore, curriculum materials do not acknowledge and attend to diversity from the onset of design. This means that teachers who want to respond to students' varying strengths and needs must do a lot of additional work.

Teachers are tasked with undoing injustices that stem from systemic inequities that persist in STEM+CS education. It is not enough for educational stakeholders to only acknowledge that inequities exist; actions must be taken to transform STEM+CS education to support and show evidence of student academic growth and readiness for long-term success. It should not be up to teachers alone to do the heavy lifting of translating the system's vision for equity and inclusion into detailed programs of teaching and learning. Some teachers and school leaders may be prepared for this task, while many others are not prepared, do not have the time, and are daunted by the prospect of facilitating large mental shifts in STEM+CS education. Developing curriculum materials that attend to all students is not a matter of the state or district telling teachers what to do. It is about the community coming together to ensure that students and everyone involved in their STEM+CS education are provided with high-quality, relevant, and rigorous curriculum materials that will position students for success in their future work and life. When the curriculum falls short, there should be resources and tools to assist in making the necessary changes needed to ensure all students' STEM+CS learning.

Our three-part paper series (a) helps unpack the need for integrating equity and inclusion when designing or adopting STEM+CS curriculum materials; (b) provides the EI-CD approach that promotes collaborative dialogue and problem-solving, incorporates relevant student and local context, and provides a cyclical process of ongoing change and feedback; and (c) calls for state and local leaders to action with suggestions for the implementation of the EI-CD approach.

Acknowledgments

Special thanks to Kate Laguarda, Patrik Lundh, Felicia Moore-Mensah, and Gina Townsend for conceptual support, feedback, and attention to this work.

References

Boser, U., Chingos, M., and Straus, C. (2015, October 14). *The Hidden Value of Curriculum Reform: Do States and Districts Receive the Most Bang for Their Curriculum Buck?* Center for American Progress. https://www.americanprogress.org/issues/education-k-12/reports/2015/10/14/122810/the-hidden-value-of-curriculum-reform/

Hodge, E., Salloum, S., and Benko, S. (2019). The Changing Ecology of the Curriculum Marketplace in the Era of the Common Core State Standards. *Journal of Educational Change, 20*, 425–446. https://doi.org/10.1007/s10833-019-09347-1

K–12 Computer Science Framework Steering Committee. (2016). *K–12 Computer Science Framework*. https://k12cs.org/wp-content/uploads/2016/09/K%E2%80%9312-Computer-Science-Framework.pdf

Kaufman, J., Thompson, L., and Opfer, V. (2016). *Creating a Coherent System to Support Instruction Aligned with State Standards: Promising Practices of the Louisiana Department of Education*. RAND Corporation. https://www.rand.org/pubs/research_reports/RR1613.html

National Research Council (NRC). (2012). *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. National Academies Press.

Rodriguez, A. (2015). What About a Dimension of Engagement, Equity, and Diversity Practices? A Critique of the Next Generation Science Standards. *Journal of Research in Science Teaching, 52(7)*, 1031–1051.

Steiner, D. (2017, March). *Curriculum Research: What We Know and Where We Need to Go.* StandardsWork. https://standardswork.org/wp-content/uploads/2017/03/sw-curriculum-research-report-fnl.pdf