

FAMILIES & COMMUNITIES IN CURRICULUM CO-DESIGN

PROCESSES FOR EQUITABLE PARTNERSHIPS

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Family and community engagement and leadership is necessary to creating and sustaining culturally-relevant and academically stimulating places for learning.¹⁻³ As such, many learning environments such as schools are required to incorporate family and community engagement in their programs, yet rely on outdated and inequitable forms of partnering that can actually *disengage* many families and communities. In particular, **nondominant** individuals, families, and communities - or those marginalized and excluded due to race, language, socioeconomic status, gender identity, sex, and sexual orientation, etc. - are often most impacted by educational decisions, yet least likely to participate in the decision-making process. For example, funding decisions; curricular adoption, design, and implementation; and educator hiring and training are just a few examples that matter in the educational lives of students and their families and communities. This brief synthesizes promising research that leverages family and community knowledge and expertise and provides some key practices to supporting engagement and leadership. In particular, this brief focuses on collaborating *with* families and communities in science, technology, engineering, and mathematics (STEM) curricular design and implementation.

DEVELOPING CULTURALLY-RELEVANT LEARNER IDENTITIES

There is now a wealth of research demonstrating that all families and communities organize out-of-school learning opportunities for young children and youth in ways that contribute to their cultural, moral, and racial/ethnic identity development.⁴⁻¹⁰ In particular, families and communities shape expectations for young people to become contributing and successful members of their community.¹¹ However, many scholars argue there is misalignment between what nondominant children and youth learn in schools and what they learn at home.¹² This misalignment has implications for learner identities in a number of areas, but for this brief we focus on STEM identities. For example, in the often used exercise called “draw a scientist” many people including young children and educators draw an older, white man in a lab coat.¹³ In addition to a limiting perception of what a scientist looks like, the scientific content that gets taught in schools and many informal educational spaces is limited to the contributions of Euro-American men and the scientific practices they employed to “discover.”¹⁴ Many nondominant youth report that their experience with school-based mathematics and science are gendered¹⁵

KEY STANCES IN EQUITABLY ENGAGING FAMILIES & COMMUNITIES:

- All families and communities create learning opportunities for their children
- All learning is cultural
- Developing & supporting student cultural identities is necessary alongside academic identities
- Authentic learning supports community health & wellbeing
- Traditional powered roles and decision making processes need to be redesigned for authentic family & community leadership

and racialized.¹⁶ Thus, many nondominant children, youth, and communities do not identify or pursue careers in STEM related fields. Educators are fundamentally shapers of a learner's "identity trajectory" and need to actively dispel stereotypes about only white men being able to do and be scientists, technicians, engineers, or mathematicians.¹⁷ Additionally, educators need to co-create and implement curricula that reflects the funds of knowledge and STEM contributions of diverse peoples locally and globally. This means collaborating with families and communities in responsible ways.

DISCIPLINE-SPECIFIC KNOWLEDGES

Familial and community-based learning affords "discipline-specific" knowledge production and innovation in STEM and literacy.^{12, 18-19} As mentioned above, there is a distinction in the research about what happens in school-based settings and what happens in homes and communities.¹² This is due in large part to the way that "what counts" as STEM knowledge and practice has been, by and large, narrowed to the contributions of white men.¹⁴ Thus, an emerging line of research is aimed at reframing everyday STEM practices and learning as the foundation for rigorous learning opportunities in classrooms and informal learning environments.²⁰ For example, extensive research demonstrates the mathematical expertise, skill, and collective learning of African American youth in activities such as basketball and dominoes.²¹ In another example, students and families of Mexican descent and from Central America made connections between astronomical and agricultural cycles represented on the Aztec calendar and reflected through communal stories, everyday practices, and Ancestral knowledges.²² However, these authors caution that the knowledges of nondominant communities are often presented ahistorically - meaning that well-intentioned educators can

CRITICAL HISTORICITY: Families & communities, particularly nondominant ones, have long and intergenerational histories with schools that impact school-community relations. Critical historicity - or attention to historical inequities and strengths can help navigate through these histories. For example, consider how schools have been historically used to assimilate immigrant, indigenous, and marginalized populations into mainstream, middle-class, Euro-American values and practices. Recognizing this history may help explain why nondominant families feel uncomfortable are distrustworthy of schools and schooling. **Consider, how might schools and other educational institutions alongside families build trust and new relationships?**

RESOURCES FOR CULTIVATING CULTURALLY RELEVANT STEM IDENTITIES

- [Women in Science: 50 Fearless Pioneers who Changed the World](#)
- [STEM Teaching Tools](#)
- [Indigenous Education Tool](#)
- [Cheche Konnen Center](#)

POWERED ROLES & DYNAMICS: Powered roles and dynamics are always present and require routine critical reflection. Power often comes from holding certain positions within an institutional space, such as "director," "principal," or "parent leader." Power is also accumulated over time. **Consider, how might institutions, families, and communities think about distributing power across individuals. How might you create routine ways to reflect on how power is being shared, used, or abused? What will be the routine ways that people can reflect on powered positions and dynamics without being penalized?**

appropriate Ancestral knowledges without addressing how these knowledges came to be (i.e. over time by peoples in connection with land and the universe) or how they have been intentionally erased in US educational systems. Instead, they suggest families and communities be able to teach their practices and knowledges rather than educators simply "tapping" the knowledge and incorporating it into their planned curriculum. In other words, families and communities should be thought of as equal decision makers and *co-designers* of curricula.²² This could mean educators attending family and community events, inviting families and community members as guest speakers in classrooms, or having curricular co-design nights where families and communities can contribute to what gets taught and how.

FAMILIES AND COMMUNITIES AS CO-DESIGNERS: CONSIDERATIONS FOR FAMILIES AND PRACTITIONERS

Co-design is a process of bringing diverse people together to collectively identify issues or areas of inquiry and to design solutions through data informed and solidarity-driven decision-making processes.²³ Co-design has been leveraged in a number of educational settings from cultural community centers to formal school districts.¹ Critically, co-design is not a focus group or a listening session. Focus groups and listening sessions may be important ways to understand the needs and contexts of families, communities, and educators; however, it is important to position families and community members as collective decision makers as well. Co-design occurs over time and not in singular events. For example, in a school district in West Salt Lake City, school administrators, Latinx families, and state policy makers are reimagining and redesigning the purpose and structure of a key decision making body within the school - the School Community Council. This group gathered in four initial sessions that included storytelling, generating ideas, and collectively identifying potential solutions.²⁴ Additionally, facilitators critically reviewed transcripts of the sessions to identify themes and dynamics that could be important to bring up in the next session, such as inequitable talk-time between Spanish-speaking parents and English-speaking administrators.²⁴

In another context, trust between administrators and parents was slowly built over several sessions of conversation, storytelling, and reimagining the relationships. Key to this was a recommitment to creating and sustaining learning opportunities that support whole, healthy, and thriving children.²⁵ Finding common values and goals can be an important step to building relationships for co-design; however, tensions will inevitably arise between and across individuals and groups of people. Finding ways to work through the tension is necessary to authentic engagement and decision making.

INCLUSIVITY & HETEROGENEITY: Communities, like ecosystems, thrive with diversity or “heterogeneity”. Moves to inclusivity mean more than numbers of diverse peoples and languages. It also means valuing and encouraging people to bring their multiple forms of expertise, experience, and ways of knowing allows for expansive forms of engagement, knowledge creation, and re-distribution of power. **Consider, how diverse are the educational spaces you or your children are in? What forms of diversity take root in these spaces? How is it supported or encouraged for adults and children to bring their multiple forms of expertise and experience?**

FUNDS OF KNOWLEDGE: Funds of knowledge “refer to the historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being.” 4, p. 133 All families and communities have funds of knowledge that can support rigorous and stimulating learning in both formal and informal learning environments.

Critical Reflections →

- Who is active and engaged at schools? Are these family and community members representative of the full student body? If not, what could you do to invite more people to come to schools?
- How are educators and school leaders a part of the community?

CULTIVATING TRUST & RELATIONSHIPS	IDENTIFYING POTENTIAL LEARNING OPPORTUNITIES	COLLECTIVELY DESIGNING & IMPLEMENTING
Begin by listening and sharing stories about relationships	Begin by listening and sharing stories about learning goals and opportunities	Keep track of all ideas! Not all ideas need to be acted upon right away, but keep them for future use
Family members including but not limited to biological parents should be considered important for student learning & success	Consider who may hold expertise or experience in the community - ask others to share someone who may hold expertise	Be willing to try ideas out - they may not go perfectly the first time but can be refined over time and trials
Allow for people to bring their whole selves	Keep track of all learning opportunities - you might not have time to get to each idea in a designing session but you may want to come back to them	Keep track of implementation - what goes well or not can help inform revision
Allow plenty of time for trust and relationships to be built, it may not be easy or quick	Make connections between students' home lives and school lives so that the learning is authentic and applicable	Family and community members can help implement designs too



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