

AM-ME Research Group Background

Background on Critical Participatory Action Research

Critical participatory action research provides an approach where a research team partners with local communities to design and carry out research activities. Critical participatory action research is rooted in the belief that those being served by the research should participate in the design of research questions, methods, analyses, interpretations, and action planning. The *critical* aspect of the approach encourages participants (e.g., researchers, practitioners, students, families) to investigate ways to better serve the needs of those not benefiting from current practices, thus disrupting existing practice in productive ways. As such, critical participatory action research addresses limitations of traditional approaches to measurement development, where researchers typically do not directly partner with users of developed measures in ways that intentionally shift practice. Emergent evidence, however, suggests this approach promotes measures' usefulness and effectiveness.

Background on AM-ME Research Group

We will partner with six practitioners and six students (supported by their parents/guardians) to carry out project decisions and activities. One practitioner and one student will be recruited from each school. Together, the PIs, co-PIs, six practitioners, and six students will make up the research team, henceforth known as the **AM-ME Research Group**. Group members will work to: (a) conceptualize math engagement based on the lived experiences of Black and Latino students, (b) identify the dimensions of engagement that resonate with Black and Latino students, and (c) develop measures that capture these dimensions. The PIs and co-PIs will provide support and guidance to the group as we collaboratively make decisions and carry out the decisions made by this group in the research activities. We recognize the varying levels of development and the varieties of insights, expertise, and positionality across practitioners, students, and parents/guardians; therefore, we will slowly increase the complexity of information presented and responsibilities of the group as the project progresses.

The AM-ME Research Group will meet twice a year to develop and review project protocols, progress, and findings. Each meeting will last approximately three hours per day for two to three days in a row. Meetings will take place in-person at hours outside of the school day at Search Institute, which is located between the two districts. Between meetings, group members will be asked to provide feedback on project components via electronic communication. ***This is expected to take roughly 32 to 40 hours per year and will occur outside of the school day.*** Table 1 outlines a tentative timeline and topics.

Table 1. Meeting timeline and topics for the AM-ME Research Group

	Topic(s)
Winter 2023	Day 1: Overview of the research project; Establish group norms and expectations; Review and revise research objectives, questions, and activities Day 2: Discuss math engagement in classrooms and schools; Review a student self-report math engagement survey Day 3: Draft qualitative sampling, focus group, and interview protocols
Summer	Day 1: Review data collected from a survey and the focus groups and interviews

This project is funded by the National Science Foundation, grant #2200437. Any opinions, findings, and conclusions or recommendations expressed in these materials are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Learn more about the Adapted Measure of Math Engagement at <https://www.childtrends.org/project/adapted-measure-of-math-engagement>.

Adapted Measure of Math Engagement

2023	Day 2: Create the Adapted Measure of Math Engagement (AM-ME) using data findings
Fall 2023	Day 1: Review data collected from student cognitive interviews and content reviews with teachers Day 2: Adjust the AM-ME using data findings Day 3: Determine resources to be drafted that would support teachers and students in understanding how the AM-ME was developed and how it can support culturally responsive practices to better support Black and Latino students' engagement in math
Spring 2024	Day 1: Review data collected from the administration of the AM-ME and follow-up student focus groups Day 2: Adjust the AM-ME using data findings
Fall 2024	Day 1: Review resources to be drafted that would support teachers and students in understanding how the AM-ME was developed and how it can support culturally responsive practices to better support Black and Latino students' engagement in math. Day 2: Determine how findings will be shared with partnering schools (teachers, students, and community members) Day 3: Develop dissemination strategy for resources and findings
Spring 2025	Day 1: Review data collected from the administration of the AM-ME Day 2: Review resources drafted that would support teachers and students in understanding how the AM-ME was developed and how it can support culturally responsive practices to better support Black and Latino students' engagement in math Day 3: Review finding dissemination plans and materials

Drs. Holquist and Hsieh will be responsible for organizing and facilitating the AM-ME Research Group. During meetings and electronic communications, decisions will be guided by the group norms and expectations established during the initial meeting using a consensus-based decision-making protocol that prioritizes both student and adult voices.