K-8 Math Capacity: Joy and Justice Math

Participating Hubs

East Metro STEAM Partnership
Portland Metro STEM Partnership
South Metro-Salem STEM Partnership
Umpqua Valley STEAM Hub

Goals and Deliverables

- Refine and adapt existing K-2 and 3-5 institutes based on participant evaluations and course instructor feedback.
- Identify teacher leaders from past Joy and Justice cohorts and provide support and training for them to become teacher facilitators.
- Complete a needs assessment before developing the middle school workshop.
- Recruit a middle school math development team to develop a middle school Joy and Justice Institute.
- In 2022 and 2023, host and facilitate an elementary Joy and Justice institute.
- In 2023, host and facilitate a middle school Joy and Justice institute.
- Host PLC sessions during the academic year 2021-22, 2022-23, and 2023-24 for past participants of the K-5 (and later, middle school) institutes.

Grant Overview

The Joy and Justice in Mathematics courses were originally created for K-2 and 3-5 educators and piloted in the summer of 2021. The 2021-2023 project builds off of the work begun last biennium to update and refine the existing Joy and Justice in Mathematics Institutes, based on feedback from the pilot sessions, and to develop and facilitate a Joy and Justice institute for middle school educators.

This professional development provided K-8 educators access to research-based, reflective learning experiences. The content of the institute focused on the research of Gholdy Muhammad, Frances Su, and Rochelle Gutierrez, with an emphasis on the concepts of criticality, identity, play, and joy in mathematics. Participants were encouraged to develop the following critical lenses through which to view the mathematics curriculum and their teaching practice:

- Growth mindset
- Strengths-based
- Trauma-informed
- Racial equity
- Disability justice
- Feminism
- Youth-centered approach

The K-5 and 6-8 versions of the Joy and Justice Institute shared a basic structure. The courses kicked off with a six-hour workshop, followed by 15 hours of asynchronous learning on Canvas. During the asynchronous learning, participants dove deeper into the concepts through choice boards, which provided listening, watching, reading, and writing options for learning. They then had the opportunity to apply what they learned to a final project. This final project could be a lesson plan or unit designed from scratch, a

refined curricular resource, an instructional routine, or planning an event for their classroom or school. Finally, participants gathered to share their final projects with one another and to give and receive feedback. Facilitators also provided feedback to participants on their final projects.

Past participants could also opt into a Professional Learning Community (PLC) to continue the learning. Each PLC was open to participants who had attended a previous Joy and Justice institute. The PLC content was adjusted each time to reflect the areas of expertise of the facilitators and the interests of the participating teachers.

The 2022 Professional Learning Community, led by Carol Biskupic Knight and Leah Plack, focused on implementing a Student Interest Survey to determine intersections between students' interests, curiosities, math skills, and concepts that needed to be taught.

The Spring 2023 Professional Learning community, led by Dr. Swapna Mukhopadyay, focused on exploring intersections of art and ethnomathematics at the Portland Art Museum.

The Fall 2023 PLC, led by Vo Vo, focused on implementing the big ideas from Joy and Justice, as an opportunity for connection and accountability.

Addressing Equity

Equitable access to rigorous and engaging math education is at the heart of the Joy and Justice Institute. The project aims to center Black, Indigenous, multilingual, and otherwise marginalized youth by sharing theory from Gholdy Muhammad, Rochelle Gutierrez and Frances Su, while providing space for teachers to connect to the theory to their mathematics curriculum and practice. With the support of facilitators and colleagues, participating teachers modify or create mathematics lessons centering on re-humanization, play, criticality, justice, and students' lived experiences. Across the Network

From SMSSP's culturally responsive workshop: *"I learned so much about myself and how I unintentionally judged people and what their mathematical abilities were. I don't think I ever thought someone couldn't do well academically but I know I for sure had watched the news and saw that an Asian child had won a spelling Bee or was in college at 10 years old and I thought of course they were Asian. Totally racist, I will intentionally remind myself that given the same opportunities every child has the ability to succeed."*