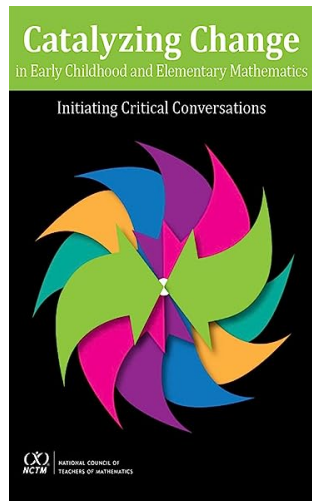




Adapted from AMTE Early Career Award Session (de Araujo, 2021)



Mathematical Identity

- A view of oneself as a doer, knower, and sensemaker of mathematics.
- A deeply held belief about one's own ability to engage successfully in mathematics
- Impacted by how students are positioned in the mathematics classroom

Mathematical Agency:

- One's mathematical identity in action
- Evidenced by how students engage in the elementary school mathematics classroom
- Created in a space and place where students are empowered to be doers and thinkers of mathematics

Effective Mathematics Teaching Practices
Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representation to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.
Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.

(Catalyzing Change in Early Childhood and Elementary Mathematics, p. 56)