

Catalysts



BELIEVE

Do teachers believe it's important to teach conceptual understanding, multi-step problem-solving and executive functions and WHY?



FRAME

What are teachers' mental models of learning conceptual understanding, multi-step problem-solving and executive functions? How do they think kids learn?



KNOW

How do they know how to teach in this way and what supports do they have to do so?



ACT

What are the contexts they need or build to teach for conceptual understanding, multi-step problem-solving and executive functions?



ADAPT

How do they adapt in the moment? What do they do in the moment to execute?



REINFORCE

How do they know that what they are doing is supporting their belief and mental model? What feedback do they get?

SUMMARY

Teachers in Catalyst mode emphasize conceptual understanding as critical to math learning, and they believe that social emotional skills are woven into learning math in this way.

While they're in Catalyst mode, teachers have a mental model of teaching and learning that tightly enacts their beliefs.

Teachers in Catalyst mode have a range of supports that are consistent with their beliefs and mental models.

In Catalyst mode, teachers set the contexts for collaborative learning.

In Catalyst mode, teachers are adept at adjusting.

In Catalyst mode, teachers use frequent, in-the-moment feedback to inform them of the impact of their teaching and to give students the opportunity to reflect on their learning.

OPPORTUNITIES

In Catalyst mode, teachers' beliefs are most fully realized in results for their students that are both long-term and beyond the classroom.

- How might we enable teachers in Catalyst mode to see their impact over time?
- How might we enable teachers in Catalyst mode to see their impact in spaces beyond school?
- How might we demonstrate ways that student EFs can support their long-term development?

The Catalyst mental model is community-centered and relies on considerable front-end work to build community norms and ongoing work to sustain community culture.

- How might we integrate culture building into math content work?
- How might we support community development in math programming?
- How might we connect student EF development into this communal framing?

Teachers in Catalyst mode interviewed in this project were supported by district materials that reinforced their beliefs and mental models.

- How might we support teachers in Catalyst mode whose district-provided materials do not feel consistent with their beliefs or mental models?
- How might we provide teachers in Catalyst mode with technology options that reflect their discourse-rich and community-centered mental model of teaching and learning?

In Catalyst mode, teachers set the stage for students' collective discovery of ideas. This depends on these teachers; ability to scaffold this collaboration and discovery.

- How might we support Catalysts in building their students' collaboration skills?
- How might we help Catalysts develop their own sense of connections and misconceptions?

In Catalyst mode, teachers are adept at adjusting to classroom dynamics. Their ability to "read the room" enables them to nimbly adapt.

- How might we provide teachers with more insight into each student's experience?
- How might we offer teachers support for the mental load of the many adjustments they make?
- How might we support teachers in connecting intrinsic motivation to the agency they want students to develop?
- How might we translate teachers' own EFs into their ability to develop student EFs?

In Catalyst mode, teachers use a range of feedback that provides them with insight into individual student performance. However, their mental model is focused on the classroom community.

- How might we create feedback opportunities that assess the community, not just the individual?