

Logic Model: Foundations of Math Usability Sites



What does "Long-Term Systems Change" mean?

Go beyond knowledge and skills to get to *sustained use in classrooms*

The steps of this logic model are designed to achieve sustained use in classrooms based on what the research tells us is needed:

⇒ Jim Knight; Joyce and Showers: transfer to classroom requires on-going practice in the classroom with feedback from peers or coaches (Joyce and Showers: 95% success rate v. 0-5% with training alone; Knight: 90% with instructional coaching v. <1% without coaching)

⇒ National Implementation Research Network: transfer to classroom requires engaging in a formal, ongoing implementation process (80% success rate after 3 years v. 14% success rate after 17 years)

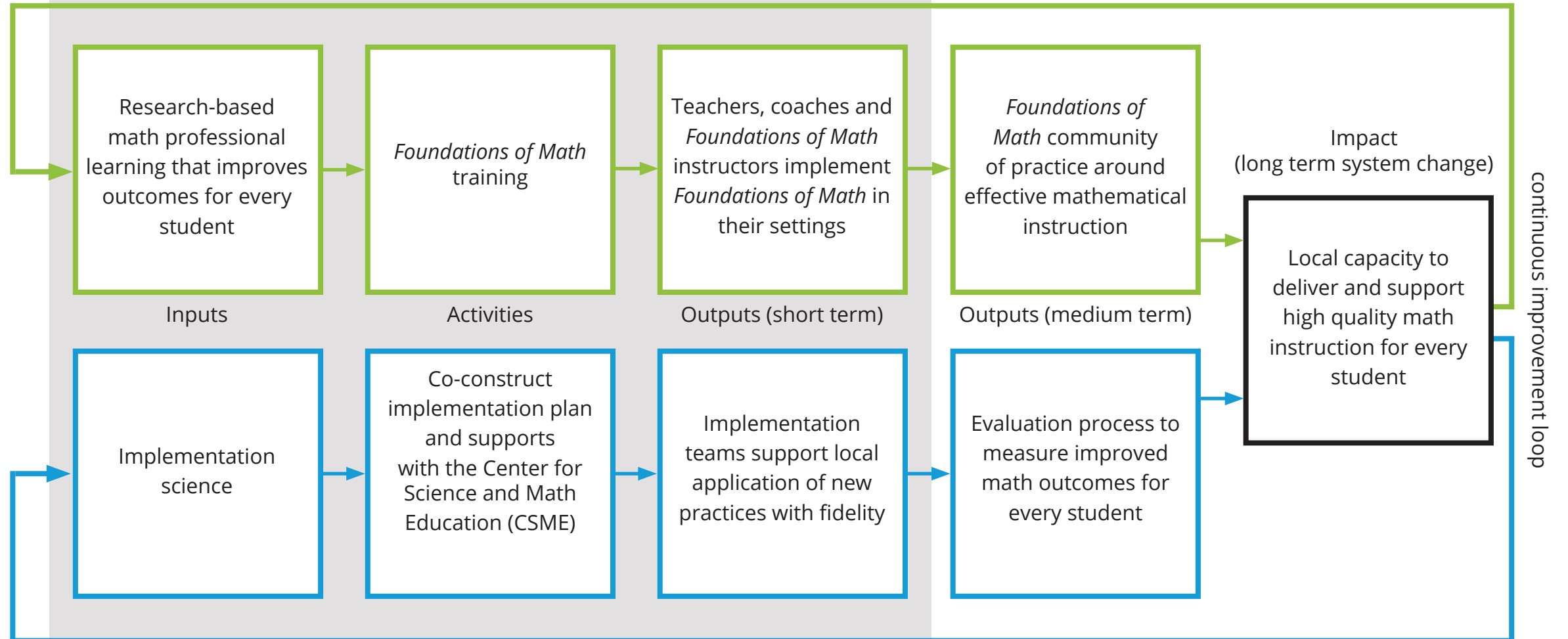
⇒ Hill, Rowan and Ball research: "teacher content knowledge for teaching mathematics was a significant predictor of student gains" (versus non-predictive factors including education/experience of teacher, curriculum materials, knowledge of math content and district financial resources)

Purpose of *Foundations of Math*

1. Pedagogical shift for thinking about mathematics
2. Use of evidence-based practices in mathematics classrooms
3. Increased content knowledge for teaching mathematics

Learning outcomes for *Foundations of Math*

1. Build deep foundational content knowledge and pedagogical knowledge
2. Learn how to make solid instructional choices that positively impact student learning
3. Connect procedures used in mathematics to conceptual understanding
4. Build mathematical understanding and accurately assess learning for a range of learners



Purpose of Implementation Process

1. Build stakeholder's innovation fluency ("What are we going to do?")
2. Build stakeholder's implementation fluency ("How are we going to do it?")
3. Partner with stakeholders throughout the implementation process

Learning outcomes for Implementation Process

1. Build knowledge of the implementation process
2. Learn how to engage in the implementation process, including co-construction of a local implementation plan with CSME and (Mi)²
3. Increase understanding of a district's own capacity to implement new practices
4. Engage in continuous improvement



Foundations of Math Usability Site Checklist

(EACH AFFECTED BUILDING WOULD DO THIS)

- Identify and support a person with a math background (and has completed Level 1 *Foundations of Math* training) to go through Level 2 *Foundations of Math* training)
 - 5 days of Level 2 training
 - participation in Trainer-of-Training Day
 - allowing a state-level Foundations trainer come in to evaluate the trainee
 - conduct 5 days of local *Foundations of Math* Level 1 training
 - release time for planning with co-instructor
- Identify and support a person with a special education background (and has completed Level 1 *Foundations of Math* training) to go through Level 2 *Foundations of Math* training)
 - 5 days of Level 2 training
 - participation in Trainer-of-Training Day
 - allowing a state-level Foundations trainer in to evaluate the trainee
 - conduct 5 days of local *Foundations of Math* Level 1 training
 - release time for planning with co-instructor
- Work with the Center for Science and Math Education (CSME)
 - meetings
 - follow-up visits
 - observations
 - evaluations
- Establish an implementation team (CSME will provide more guidance on this)
 - *Foundations of Math* instructors
 - Principal or proxy for principal with decision making authority
 - Instructional coach(es) who will support implementation
 - Other key stakeholders
- Participate in a 1-day Leadership Institute
 - principal(s)
 - *Foundations of Math* instructors
 - District leadership
 - Implementation team
- Send a cohort of staff to the locally offered *Foundations of Math* training
 - K-12 teachers
 - General and special education teachers – anyone responsible teaching math to students with special needs
 - Gather pre and post data
- Secure a site and meals (if applicable) for the 5-day training
- Secure meeting times and space for the implementation team (CSME will provide more guidance on this)
- Meet with CSME to co-construct the implementation plan and evaluate its effectiveness
- Provide data to CSME
- Engage in continuous improvement cycles with CSME
- Be prepared to offer follow up implementation support, e.g., coaching or Professional Learning Communities (PLCs)