



Encouraging In-progress Thinking

What is it?

Encouraging students to share their thinking about a math problem at any state in their work (i.e., encouraging “rough draft talk” (Jansen et al., 2016).

Why do we use it?

Encouraging in-progress thinking fosters intellectual safety in that it demonstrates to students that all ideas are worth exploring and have the potential to be developed. This move promotes a classroom culture in which mistakes and errors are viewed as important reasoning opportunities, and in doing so encourages a wider range of students to engage in mathematical discussion with their peers and the teacher.

When Encouraging In-progress Thinking...

Teachers are...

- inviting students to share their unfinished work (i.e, share their rough drafts)
- inviting students to revise their thinking
- gathering student ideas without opinion

Students are...

- learning that all ideas add value
- learning to revise their mathematical thinking
- sharing ideas that are not finished yet, saying here is what I think so far
- listening to others with empathy
- not fixing mistakes, but revising to learn from them

Tell us about why you are stuck. What is not making sense for you?

Let's start with Cyndi's idea and work together to further develop it.

I know we are still thinking, would anyone like to share their rough draft ideas?

Drew, I know you are still thinking, but would you please share what your ideas are so far?



Discourse Move: Encouraging In-progress Thinking



The classroom is a community of mathematics learners where knowledge is not held only by the teacher. Students and teachers are constructing meaning together.



Support for Administrators

NC Professional Teaching Standards

Encouraging In-progress Thinking aligns to Standard 2, Standard 3, and Standard 4.

2a. Teachers encourage an environment that is flexible.

3a. Teachers provide a balanced curriculum which enhances literacy skills.

4b. They engage students in the learning process.

4e. Teachers encourage students to develop and test innovative ideas.

NC Portrait of a Graduate

Encouraging In-progress Thinking aligns to the Adaptability, Critical Thinking, Learners Mindset, and Personal Responsibility competencies.

- Demonstrate flexibility when navigating challenging situations.
- Employ creative improvements to systems, processes, and organizations.
- Possess an ongoing desire to learn, unlearn, and relearn.
- Persevere through challenges.

Standards of Mathematical Practice (SMP)

Mathematically proficient students...

Make sense of problems and persevere in solving them.

Monitor and evaluate their progress and change course if necessary.

Look for and make use of structure.

Step back for an overview and shift perspective; see complicated things as single objects or as being composed of several objects.

Look for and express regularity in repeated reasoning.

As they work to solve a problem, they maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.



When working with a teacher, here are some questions to help coach the teacher to implement the discourse move of Encouraging In-progress Thinking in their classroom.

Clarifying Questions...

- How do you create a flexible environment that supports students' in-progress mathematical thinking?
- How do you model flexibility when faced with a challenging math situation and navigate this with adaptability and resiliency?
- How do you cultivate the student habit of continually evaluating the reasonableness of their intermediate results in solving problems?



Digging Deeper for Discourse

- How do you encourage them to explore different approaches and solutions to challenges they encounter?
- How do you create opportunities for students to develop and test innovative ideas, encouraging their creativity and problem-solving skills?
- How do you create a classroom climate where students are flexible with learning, unlearning and relearning?

For encouraging in-progress thinking, teachers help students understand how to listen to each other, ask questions and offer their own thinking.