Formative Assessment in Secondary Mathematics

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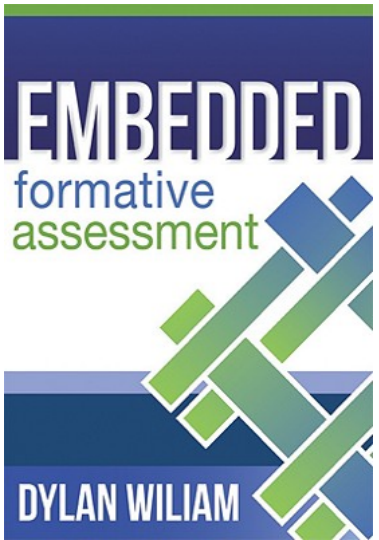
Goals of today's session

Illustrate formative assessment strategies that have been demonstrated to be effective in secondary mathematics classrooms.

Have participants come out of the session with at least one idea they could use in their classes.

What is formative assessment?

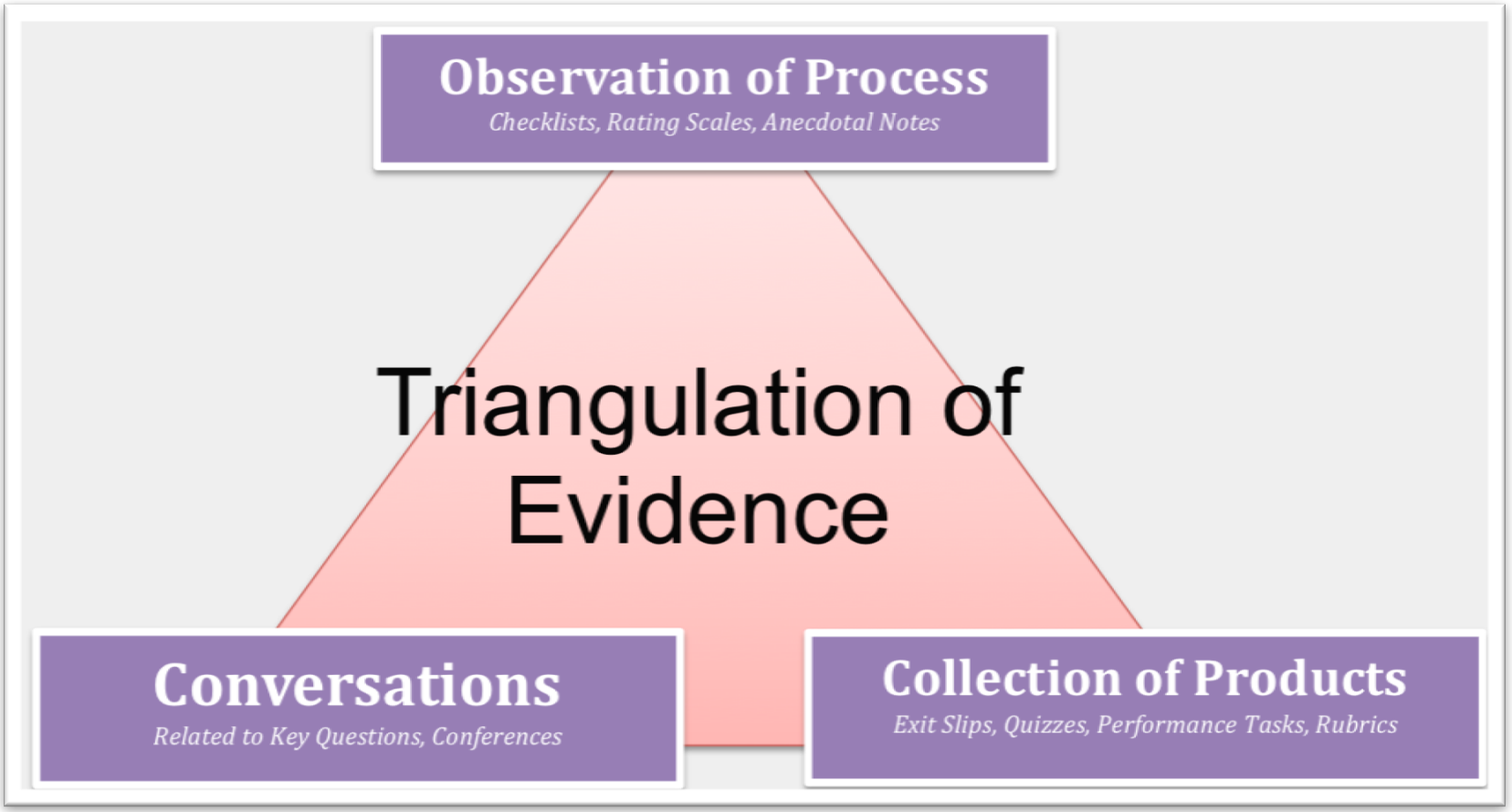
- "process by which instruction might be improved" (Wiliam, 2011, p. 38)
- Assessment *FOR* learning: assists teachers in making adjustments to their practice
- Assessment *AS* learning: encourages students to reflect on their own learning
- Assessment in the service of learning



Assessment Evidence

"When evidence is collected from three different sources over time, trends and patterns become apparent, and the reliability and validity of our classroom assessment is increased."

(Davies, 2011, p. 46)



5 Formative Assessment Strategies

1. Clarifying, sharing, and understanding learning intentions and criteria for success so that "students know where they are going in their learning and what counts as quality work" (p. 69).
2. Engineering effective classroom discussions, activities, and learning tasks that elicit evidence of student learning, including asking "high-quality questions" (p. 104) that can enable the teacher to make effective instructional decisions based on student responses.
3. Providing feedback that moves learning forward, causes thinking, and "directs attention to what's next rather than focusing on how well or badly the student did on the work" (p. 128).
4. Activating students as instructional resources for one another, which forces students to "internalize the learning intentions and success criteria" (p. 144) in order to provide effective feedback to their peers.
5. Activating students as owners of their own learning to help students reflect "critically on one's own learning" (p. 158) using self-assessment and metacognitive strategies.

Marynowski (2015, p. 168)

Clarifying and sharing learning intentions and criteria for success

Strategy	Benefits
Co-creating criteria • Using examples and non-examples to develop criteria for a task "what makes a good ...."	Develops a clarity of what is good and not good work
Pre-submission checklist • Give students a checklist of the things they need to have on their assignment	Awareness of details that sometimes they miss

Engineering effective classroom discussions, activities, and tasks that elicit evidence of learning.

Strategy	Benefits
Jigsaw • Students become experts in a topic/question/idea/process then regroup into mixed groups to share	Students become owners of the knowledge
Gallery walk • Have students complete a question on chart paper or vertical surface then circulate – provide comments, feedback	Students can see/analyze someone else's thinking

Providing feedback that moves the learning forward.

Strategy	Benefits
Formative Quizzes • Quizzes that are just for feedback not for marks	Focus on learning not the mark
Mini-whiteboards or vertical non-permanent surfaces • Pose purposeful questions to highlight specific elements of the content	Specific feedback to students in the moment
Entrance slips • Students complete a question or series of questions at the beginning of class that is then used to determine their next steps in that class	Misunderstanding can be identified and fixed immediately

Activating learners as instructional resources for one another.

Strategy	Benefits
C3B4Me • Students check in with 3 other students before coming to teacher for help	Develops a culture in the classroom of shared learning
Peer Review • Peers review each others' work with a set of criteria/checklist before final submission	Ensures that criteria are met and understood by all
Steal two • Students look at a partner's work and choose two elements from that work that would improve their own	Improvement of one's own work in light of another's

Activating learners as owners of their own learning (assessment *as* learning)

Strategy	Benefits
Outcomes checklist • Give students a list of outcomes and students self-assess their abilities to meet those outcomes	Provides students with an opportunity to analyze skills
One sentence summary • Students summarize the learning from the class in one sentence that they share with classmates/teacher	Gets students to reflect and summarize
Muddiest point • Students write down the thing they are most confused about after a lesson	Reflection and expression of where they need support

Benefits of Formative Assessment on Teaching and Learning…

* Provides immediate feedback to students about learning
* Provides immediate feedback to teachers about learning
* Makes students accountable for learning
* Easy to see where students are at
* Opens up student communication about the learning
* All formative assessment does not have to come from the teacher!

Write a one-sentence summary describing what you are taking away from this session.

One-Sentence Summary

Stand-up, Hand-up, Pair-Up

Share one sentence summary with at least 3 others.

References

Davies, A. (2011). *Making classroom assessment work.* Courtney, B. C. : Connections Publishing.

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