

Overview of Formative Assessment

Formative assessment, also called *assessment for learning* (Stiggins, 2005) and *formative evaluation* (Hattie, 2009), focuses on using evidence to adjust instruction to positively impact student learning (Black & Wiliam, 1998). The National Council of Teachers of Mathematics (2014) states that “an excellent mathematics program ensures that assessment is an integral part of instruction, provides evidence of proficiency with important mathematics content and practices, includes a variety of strategies and data sources, and informs feedback to students, instructional decisions, and program improvement” (p. 5). Teachers need knowledge of both the overall purpose of formative assessment and its techniques that focus on planning, collecting, and using critical student evidence to provide **feedback**. Wiliam (2007) offers five key strategies that should guide the development and use of formative assessment in the classroom:

1. **Clarifying, sharing, and understanding goals for learning and criteria for success with learners.** Connected to the NCTM (2014) Teaching Practice that states “Establish mathematics goals to focus learning,” teachers must continually clarify learning goals and the success criteria for students. Teachers should clearly identify and communicate the learning goals, which are statements about what the students are expected to learn and the learning activity. The learning goals have several purposes and may encompass knowledge, skills, practices, and concepts. Teachers need to be clear about why they are using particular learning activities, strategically connect those activities to the learning goals, and communicate to students, parents, and leaders how they will support students in mastering the learning goal (Hattie et al., 2016).
2. **Engineering effective classroom discussions, questions, activities, and tasks that elicit evidence of students’ learning.** Eliciting evidence of students’ learning requires careful attention to the use of formative assessment techniques that capture student understanding to inform instructional decision-making. Fennell, Kobett, and Wray (2017) describe specific formative assessment techniques that teachers can use to plan and facilitate formative assessment probes, collect evidence, and provide feedback. Brief descriptions of the **Formative 5** techniques follow:
 - **Observation.** Teachers observe students every day. The key factor is how they plan for, collect evidence from, and respond to those **observations**. As teachers anticipate what they will observe, they can also develop strategic feedback that supports student thinking about the mathematical concepts they are learning.
 - **Interview.** Teachers plan for and conduct brief (2–3 minutes) formative **interviews** to learn more about student thinking during the lesson. The individual, paired, or small-group interviews are orchestrated during the lesson as previously planned or in response to particular student strategies or mathematical understandings.
 - **Show Me.** The **Show Me** technique is a “performance response by a student or group of students that extends and often deepens what was observed and what might have been asked during the interview” (Fennell et al., 2017, p. 63). Teachers use Show Me prompts to gather important in-the-moment information about student understanding, particularly as they notice misconceptions or unique responses during the course of a lesson.
 - **Hinge question.** Derived from Wiliam and Leahy (2015), the **hinge question** is a strategic question asked at a particular point during the lesson that provides a check for understanding and indicates to the teacher whether students are ready to move on or need more time to develop understanding.
 - **Exit tasks.** The **exit task** is a fully developed rich task or problem that assesses the learning intention for the day, a cluster of learning intentions, or a standard. Far beyond what teachers know as exit slips or exit tickets, the exit task provides an opportunity for students to demonstrate what they know at a deeper level.

1. ***Providing feedback that moves learning forward.*** Teacher feedback is a critical formative assessment factor because teachers immediately address and respond to students during the lesson and advance their learning during the lesson. Feedback that is targeted to student learning goals, responsive to student needs, and provided in a timely manner is one of the teacher practices that has the strongest influence on students' learning (Hattie et al., 2016). As teachers plan to implement particular formative assessment techniques, they anticipate student responses to questions, probes, and tasks. Formative assessment techniques assist teachers in providing explicit and swift feedback to students because they have thought deeply about the range of student responses and mathematical understanding.
2. ***Activating students as owners of their own learning.*** Formative feedback naturally activates students to own their learning because they are able to respond and apply the feedback they receive from teachers. Teachers must purposely create opportunities for students to reflect upon the feedback they are receiving. This type of feedback can be written or verbal, but it must point students to self-evaluate or move toward the learning goals. Shepard (2008) points out the following characteristics of effective feedback:
 - It directs attention to the intended learning, pointing out strengths and offering specific information to guide improvement.
 - It occurs during learning, while there is still time to act on it.
 - It addresses partial understanding.
 - It does not do the thinking for the students.
 - It limits corrective information to the amount of advice the students can act on.

Students who are engaged in monitoring and regulating their own learning process experience dramatic increases in learning (Fontana & Fernandes, 1994; Mevarech & Kramarski, 1997, as cited in Wiliam, 2007). Teachers can activate self-assessment by developing **rubrics** that help students self-assess their progress.

3. ***Activating students as learning resources for one another.*** Teachers who create a classroom community that is rich in collaboration share the responsibility of learning with all students and stimulate students to support each other during the learning process. Through robust discourse opportunities, students explain their own thinking and at the same time challenge each other to justify their reasoning. Within this process, students clarify their own understanding, push others' thinking, and remediate peers' misconceptions.

Clearly, formative assessment is complex! Supporting teachers in making this transformation in their practice must address these complexities and therefore takes time. Using Wiliam's (2007) five key strategies can help you effectively plan how to guide teachers on this important journey.

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