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The Essence of Formative Assessment in Practice: Classroom Examples

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Abstract

Formative assessment involves the eliciting of students' understanding for the purpose of informing instructional decisions. In this paper, we present an overview of formative assessment strategies. We include classroom examples that capture the essence of formative assessment and conclude with questions intended to engage teachers and teacher leaders in reflecting on the teacher actions necessary to support effective implementation of formative assessment strategies.

Introduction

In a classroom that uses assessment to support learning, the divide between instruction and assessment blurs. Everything students do—such as conversing in groups, completing seatwork, answering and asking questions, working on projects, handing in homework assignments, even sitting silently and looking confused—is a potential source of information about how much they understand. (Leahy, Lyon, Thompson, & Wiliam, 2005, p. 19)

One emphasis in education today is using formative assessment to inform instruction and learning. In a Web search on the topic, one finds a tremendous amount of available information. On the day we looked, there were approximately 1,110,000 results. When we narrowed our search to "formative assessment math," there were approximately 946,000 results. Although this search suggests there exists enough information for teachers and other mathematics leaders about formative assessment, Popham (2012) indicated that the essence of formative assessment is being lost in classrooms.

Formative assessment is not a test or activity. Rather, the essence of formative assessment is "the relentless attention to evidence of student thinking" (p. ix) and the systematic and intentional use of this information to inform instruction (Popham, 2012). Formative assessment is a planned process, used by teachers during instruction to adjust teaching or by students to adjust their current strategies and tactics in an effort to improve students' achievement of intended instructional outcomes (Popham, 2013).

This paper is designed to provide a series of classroom examples featuring formative assessment in action. The situations portrayed in each have been selected for their potential to reveal the complexity inherent in the use of formative assessment and to make visible the essence of this powerful instructional tool. The examples come from observations in U.S. classrooms and are examples of what is possible. If you had the opportunity to speak with the teachers from these classrooms, they would tell you that their current practice evolved over multiple years, after being part of on-going professional development on the use of formative assessment. Some of the classroom examples are based on observations made across several classrooms and synthesized into one example. Others are based on observations made in single classrooms. This will be indicated at the beginning of each classroom example. As you read through each classroom example, think about *the actions* the teacher takes to engage all students in the mathematics and learning experience and to gather, interpret, and act on evidence of student thinking.

At the end of this paper, questions are provided to help mathematics education leaders, coaches, and teachers analyze formative assessment practices in the classroom. These questions are also meant to guide discussions or reflections that, in turn, can be applied to lesson plans to move the effective use of formative assessment forward in an effort to increase the likelihood of moving student learning forward.

Gathering, Interpreting, and Acting on Evidence at the End of a Lesson

Background Information

This section describes general practices observed across multiple classrooms and synthesized into a single classroom example. The specific pieces of student work and actions taken are examples of these practices and are included to make an important point about interpreting and acting on evidence, as well as what it means to provide actionable feedback to students.

One formative assessment strategy used by many teachers to collect evidence to inform instruction and student learning is the practice of asking students to solve a problem and/or explain reasoning at the end of the lesson, often referred to as exit cards. The question is based on the goal of the lesson and the evidence in the students' work is to help inform one's lesson planning for the next day. What follows is an example of the use of exit cards in a classroom focused on developing strategies for comparing and ordering fractions. Students in this classroom were given the question in Figure 1.

FIGURE 1.
Fraction comparison exit card
(The Ongoing Assessment Project, 2013).

Which fraction is closest to 1?
Show your work or thinking.

$\frac{7}{3}$ $\frac{7}{5}$ $\frac{7}{6}$ $\frac{7}{12}$

Classroom Example 1

Since administering exit card questions at the end of a lesson is a regular part of Ms. Brown's practice, the students understand that the responses will not be graded. Rather, the teacher will use their work to inform her instruction. Ms. Brown approaches the analysis of her student work with the following questions (Petit, Hulbert, & Laird, 2012) in mind.

1) What are evidences of developing understandings that can be built upon?
2) What are issues, misconceptions and/or errors of concern?
3) What are potential next steps based on the evidence?

Figures 2 and 3 provide examples of students' work typical of what Ms. Brown reviews. Notice that all of these responses have the correct answer: $\frac{7}{6}$.

However, Ms. Brown is interested in more than right answers. She uses her knowledge of how students develop understanding and identifies errors or misconceptions that may be interfering with learning new concepts or solving problems, with the goal of identifying the next step needed to move students' learning (Heritage, 2007)

FIGURE 2a.
Kelyn's exit card response (Petit, Hulbert, & Laird, 2012).

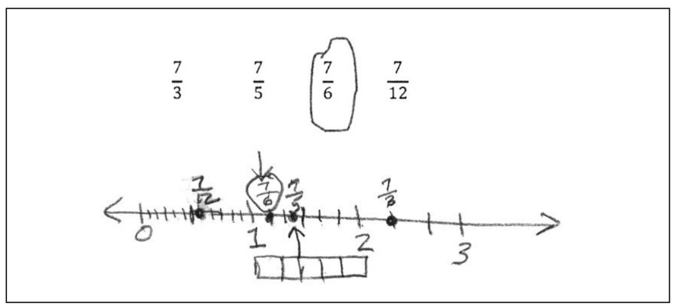


FIGURE 2b.
Abdi's exit card response (Petit, Hulbert, & Laird, 2012).

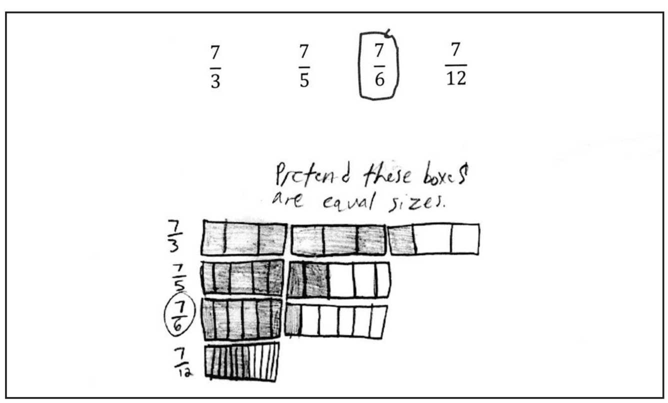


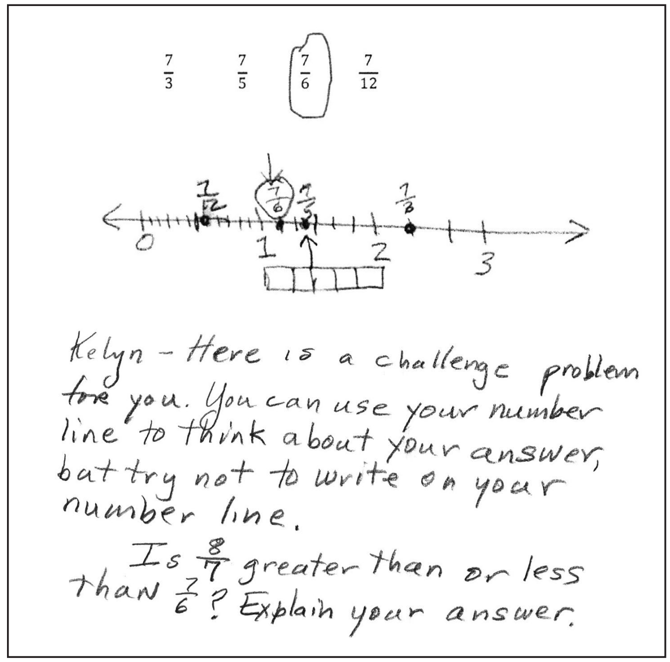
FIGURE 3.
Sam's exit card response (Petit, Laird, & Hulbert, 2014).

$7/6$ is $1/6$ away from 1
$7/12$ is $5/12$ away from one, $5/12$ is larger then $1/6$
$7/5$ is $2/5$ larger then 1, $2/5$ is larger then $1/6$
$7/3 = 2\frac{1}{3}$

In looking at the evidence, one would likely note that the visual models that Kelyn and Abdi (Figure 2) used are important steppingstones to more efficient reasoning strategies when comparing fractions. Based on the findings, Ms. Brown decides to focus her instruction for the next couple of days on helping students build their understanding from visual models to reasoning without a visual model, as evidenced in Sam's response (Figure 3). Starting the next lesson with Kelyn's, Abdi's, and Sam's responses, Ms. Brown engineers a class discussion designed to help students investigate how Sam's reasoning is reflected in the Kelyn's and Abdi's visual models. Using the evidence elicited from this initial discussion, Ms. Brown follows with a series of fraction comparison questions focused on understanding the impact of partitioning in their visual models to advance their unit fraction and benchmark reasoning.

Ms. Brown also provides feedback to her students. As a regular part of her practice, Ms. Brown's feedback often appears in three forms: whole class oral feedback; individual oral feedback; and individual written feedback on students' papers. When she gives feedback to students, she knows that providing "comments like 'think' or 'try again' or 'good work' do not result in increased motivation or raising goals and therefore do not result in increased student achievement" (Wiliam, 2011, p. 127). Instead, she works hard to design questions that ask students to think and take action on their work (Wiliam, 2011), as exemplified in Figure 4. Based on evidence from Kelyn's exit card, as well as other work, Ms. Brown had noticed that Kelyn was consistently relying on the number line to compare fractions instead of transitioning to benchmark and unit fraction reasoning. The written feedback on her response (Figure 4) is an attempt to move Kelyn's thinking to a new level.

FIGURE 4.
Ms. Brown's feedback to Kelyn (Petit, Hulbert, & Laird, 2012).



Ms. Brown also considers next steps to push Sam's learning. She understands that changing the context of a problem or even the numbers in a problem can influence a student's ability to solve problems with similar mathematics. With this understanding she decides to engage Sam and the other students with similar responses in a new problem (see Figure 5), engineered to elicit additional evidence of their unit fraction reasoning.

FIGURE 5.
Follow-up problems (Petit, Laird, & Hulbert, 2014).

Answer the following two questions and consider if the reasoning you used in yesterday's exit problem can be used to solve these? Why or why not?

a) Isaac said $\frac{1}{125} > \frac{1}{57}$ Is Isaac correct? Why or why not?

b) Sheila believes that the inequality below is a true statement. Is she correct or incorrect? Explain your reasoning.

$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} > \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

Reflection

This intentional and systematic analysis and use of evidence of student thinking by Ms. Brown is what Popham (2012) referred to as the *essence* of formative assessment. Ms. Brown selected an exit card that provided her evidence based on the goals of her lesson. Then, based on the evidence in the student work, she made instructional decisions about the instruction for all her students, focusing on the needs of individual students.

Formative Assessment Strategies

Formative assessment is much more than implementing exit cards at the end of a lesson. As previously stated, it can be everything students do if teachers use the information. To this end, five overarching strategies have been identified for supporting the use of formative assessment (Leahy et al., 2005). These strategies have been published in many documents, including the Joint Position Paper by the National Council of Supervisors of Mathematics and the Association of Mathematics Teacher Educators (2014) and in a National Council of Teachers of Mathematics Research Brief (Wiliam, 2007). The five assessment strategies are:

- clarifying and sharing learning intentions and criteria for success;
- engineering effective classroom discussions, questions, and learning tasks;
- providing feedback that moves learners forward;
- activating students as the owners of their learning; and
- activating students as resources for one another. (Leahy et al., 2005, p. 20)

It is important to note that these strategies support the effective use of formative assessment. That is, each strategy is not a formative assessment itself. The essence still remains that the evidence must be "elicited, interpreted and used by both teachers and students" (Wiliam, 2011, p. 43) to inform instruction and learning.

Although the strategies described by Leahy et al. (2005) look like a list of separate activities and events, they are not. Consider the example above of Ms. Brown and the exit cards. The activity of using the cards does not mean that formative assessment took place. Rather, it was the combination of the teacher posing a problem to her class for the purpose of gathering evidence on her students' reasoning when comparing fractions to a benchmark, analyzing the evidence, and then using it to inform her planning, targeted at moving her students' thinking forward, that made the event formative assessment at its essence.

Clarifying and Sharing Learning Goals

Background Information

This classroom example was based on an observation of a 5th grade teacher. It provides an example that is typical of how this teacher engages his students in learning goals. It also is an example of how the strategies stated above are interrelated and represents one way that a teacher might clarify and share learning goals. One can go into many classrooms and see teachers posting the goal of a lesson, or even the mathematics standard that is to be addressed that day. In Mr. Phillips's classroom, however, one sees the strategy, *clarifying and sharing learning intentions and criteria for success*, at its essence.

Classroom Example 2

Class starts with the students opening their mathematics notebooks, dating a page, and writing the goal at the top of the paper. Mr. Phillips has the following goal for the day posted on the white board.

> *Goal:* Use visual models to understand how to use benchmark and unit fractions reasoning when comparing and ordering fractions.

Mr. Phillips asks someone to read the goal for the lesson. Where his lesson departs from the norms of other classrooms and captures the *essence* of formative assessment is when he asks students to individually think for a minute and then talk with their partners about what the goal means and how it is connected to what they have been working on. He also asks them to identify any words they do not understand. It is apparent from the student interaction that this analysis of the goal is a regular part of the practice in this classroom. As the students talk with their partners, Mr. Phillips circulates the room, listening into conversations (but not talking) for what sense students are making of the goal, evidence of understanding the goal, and connections students are making to previous lessons. Next, Mr. Phillips leads a whole-class discussion.

> **Mr. Phillips:** Richard, what have you and your partner been discussing?

Richard: It looks like we will be comparing and ordering fractions, but we were not sure if we would be allowed to draw visual models anymore or if we needed to use other strategies.

On the front board, under the goal, the teacher writes "comparing and ordering fractions."

Mr. Phillips: Kim, did you and your partner have a similar discussion or can you add to their thoughts?

Kim: Like them we saw that we would still be comparing and ordering fractions, but we thought the goal means that we will use our visual models to understand and use these new strategies?

Under the goal the teacher writes "Use visual models to understand."

Robert: Sally and I thought the same thing. We thought we might start using our drawings in the beginning of the lesson and then move away from using them like we had done before in other lessons.

Under the goal the teacher writes "use visual models in the beginning and move away from them."

Richard: Oh, I get it. I remember when we first drew visual models to understand that a fraction is made up of unit fractions. After a while we stopped having to draw the model to know that

$$\frac{3}{4} = 3(\frac{1}{4}) \text{ and } \frac{3}{4} = \frac{1}{4}+\frac{1}{4}+\frac{1}{4}.$$

Is that what we are doing today?

Mr. Phillips: Yes, that is like what we are doing over the next couple of days. How many other people saw the goal in this way? (Many students raised their hands.) I have a few more questions. Did any groups discuss what it meant to compare to a benchmark? Or compare using unit fractions reasoning?

Several hands are raised.

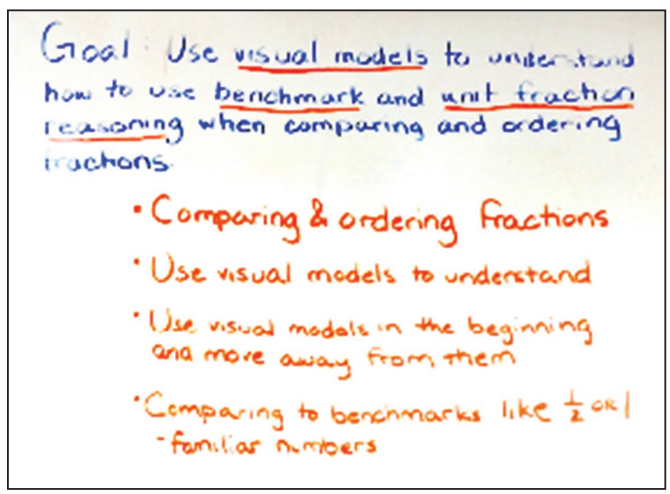
Caitlyn: We remembered in grade 3 comparing $\frac{1}{3}$ and $\frac{2}{3}$ to $\frac{1}{2}$. (Others shake their heads remembering this.) We remembered that a benchmark number is like $\frac{1}{2}$ or 1 – something that is familiar.

Gavin: We remembered that as well. We also discussed what a unit fraction was but were not sure what it means to compare fractions using unit fractions reasoning.

Next, Mr. Phillips wraps up the discussion and uses this to transition to the lesson.

Mr. Phillips: Comparing fractions using unit fraction reasoning is a new idea that we will work on today as well as moving away from using our models all the time to compare fractions. You have gotten very good at using both rectangles and number lines to compare fractions, but sometimes the fractions we need to compare can't easily be compared using a visual model, and there are more efficient ways to compare fractions than always drawing a picture. Starting today and for the next couple of days we are going to work on comparing different kinds of fractions using more efficient strategies. We will keep our mathematical goal, with your thoughts and interpretations about it, posted (see Figure 6). If you would like to add anything to the clarification of the goal, please let me know.

FIGURE 6.
Goal with student descriptions of understanding.



At the end of the lesson, Mr. Phillips' students open their mathematics notebook and respond to his exit question written on the board (see Figure 7). Note how the question was specifically designed to elicit benchmark and unit fraction reasoning. That is, a student may reason as follows: $\frac{3}{4}$ is $\frac{1}{4}$ greater than $\frac{1}{2}$; $\frac{5}{12}$ is $\frac{1}{12}$ less than $\frac{1}{2}$. Since $\frac{1}{12}<\frac{1}{4}$, $\frac{1}{12}$ is closer to $\frac{1}{2}$ than $\frac{1}{4}$. In this way, the problem connects directly to his original goal for the lesson. A careful review and analysis of students' responses provides evidence of their understandings and guidance to Mr. Phillips' lesson planning and instruction for the next lesson.

FIGURE 7.
Mr. Phillips's exit card (Petit, Laird, & Hulbert, 2014).

Which fraction is closest to 1/2?
Explain your thinking.

$$\frac{7}{6} \quad \text{or} \quad \frac{5}{12}$$

Reflection

This vignette exemplifies many of the strategies described by Leahy et al. (2005), including *engaging all students in the discussion, asking questions that revealed student thinking,* and *providing opportunities for students to be resources to each other* as they worked in small groups. However, its real value is in the teacher's intentionality about assuring that students understand the mathematical goal of the lesson. He knew from experience that if students do not understand the goal (i.e., to move to a new level of understanding — from models to reasoning based on the use of benchmarks and unit models), they may continue to rely on earlier strategies.

Connectedness of Formative Assessment Strategies

Background Information

This vignette describes an observed lesson in a single classroom belonging to Ms. Gibson. In her classroom, one can regularly find a teacher *engineering effective classroom discussions, questions, and learning tasks*. On most days, one sees her making an ongoing effort to continually gather, interpret, and use multiple sources of information to understand what her students know so that she can make on-going adjustments to her instruction.

Part way through a unit on fraction operations, and as an introduction to multiplication of fractions, the instructional materials Ms. Gibson uses asked the students to work on a task (see Figure 8) before any introduction to formal procedures for multiplying fractions.

In asking the students to draw a picture of the transactions, with an expectation that one will explain their answer, an opportunity is provided in the materials for the students to share their thinking (Heritage, 2007). Thus, by Leahy and colleagues' (2005) description of formative assessment strategies, this task has the potential to provide a teacher with insights into student thinking about fractions and multiplication before any formal procedures are presented.

FIGURE 8.
The Brownie Problem
(Lappan, Fey, Fitzgerald, Phillips, & Friel, 1998).

The school is having a carnival. One of the booths is selling brownies. The brownies were made by the school kitchen staff in large square pans. Individuals can buy a whole pan or they can buy part of a pan.

Mr. Schmidt stops by the brownie booth and buys 1/3 of a pan. Ms. Cady comes up right after and wants to buy 1/2 of what is left in that brownie pan.

- Draw a picture to show what happened with these two transactions.
- Be prepared to tell how much of a pan Ms. Cady bought and how you arrived at your answer.

Although the instructional materials provide a lesson plan for the task, Ms. Gibson expands what is provided in the plan, including additional questions she wants to ask of the class at the start of the lesson, when students are working in groups, and at the end of the lesson when she is working with the class to analyze and summarize the ideas of the lesson. Her questions incorporate what she knows about her students' knowledge and understanding of the topic that she has gathered from previous lessons, common misconceptions students often have on the topic, overall goals of the lesson, and where the particular lesson fits in the learning progression for the topic. Her detailed lesson planning is all part of her effort to create an opportunity for high quality discussion designed to elicit student thinking while building important mathematical understandings.

Classroom Example 3

Ms. Gibson launches the lesson by asking students to summarize what they have been working on during the past few lessons. Her students share how they have been solving problems with fractions and ways to add and subtract fractions. She listens carefully, asking students to say more, if they agree with what another student has said, and/or to add to what has been said. She shares the goal of this lesson, stating that they are going to continue to work on problems involving fractions. She does not state or hint that the lesson involves problems that can be solved by multiplying fractions. That goal is for a near future lesson.

Ms. Gibson presents the task (see Figure 8) and asks students to individually think about the task and ways they might try and answer the questions. After approximately five minutes of individual time, she moves the students into groups of three to share their ideas and work together to answer the questions. Groups do their work on larger sheets of poster paper, which are displayed around the room when completed. As students work in groups, Ms. Gibson moves around the room listening and noting strategies and struggles encountered by the students in the groups. These conversations, along with the posters created by the groups, provide the teacher with insights into her students' thinking.

As posters are being completed and displayed, Ms. Gibson asks the students to review other group's posters, individually, looking for ways that the solutions are alike and ways that they are different. When all posters are up, she asks students to talk in their small groups about what they noticed. Again, she listens to students' conversations, analyzing what sense they are making of the mathematics on the poster and where the students are in their thinking and understanding. She compares the reasoning strategies she hears to the ones she anticipated when planning the lesson to help her make decisions about selecting and sequencing work samples and to adjust some of the questions she anticipated asking. For example, in analyzing the visual models on two of the posters (see Figure 9), she notes how the approaches are different, and considers how she would use these pieces, as well as what she heard the students saying, to help her make decisions on the best way to debrief the mathematics in the posters.

With this evidence in mind, Ms. Gibson starts the whole class discussion by calling on different groups to share what they noticed. She is intentional in selecting students and/or groups so as to get all ideas, right or wrong, in the open for the whole class to think about and consider. Yet, this does not mean that a student from each group is called upon to share her/his group's discussion, as some groups had the same or very similar ideas.

Based on what is shared during the analysis of posters, Ms. Gibson selects some groups to explain their work. She is strategic about which group she calls on to present

FIGURE 9.
Posters from Ms. Gibson's class.

first, second, and third, as she works to use the mathematics on the posters to move students' understanding along the learning progression. Based on her plans and student work/comments, she starts with a poster that shows the least movement in the learning progression and ends with a poster that shows the greatest. Although this is not the only way one might sequence the presentation of strategies, it was deliberately and intentionally chosen by this teacher for this class on this day as a means of further developing student understanding by making connections among the different strategies presented. In another situation, she might have used a different approach, such as looking for patterns across the solutions or to compare and contrast solutions in an effort to debate and question the solutions being presented (Smith, Bill, & Hughes, 2008).

As Ms. Gibson's students share their ideas, she uses the questions she anticipated when planning the lesson, sometimes asking a particular student what s/he thinks about another's explanation and other times asking the students to think about what was shared and then discuss it with the others in their group, using a—think, pair, share—technique in the middle of a whole class discussion. Through out this lesson's summary discussion, the teacher works to make the mathematics transparent, helping students see and connect ideas, and engaging all students in the discussion.

Reflection

With this lesson, like all of her lessons, Ms. Gibson works hard to move students' understanding of important mathematics (e.g., fractions) along a learning progression. Her incorporation of at least three formative assessment strategies (i.e., *engineering effective classroom discussions, questions, and learning tasks*; *providing feedback that moves*

FIGURE 10.
Evidence for self-assessment (Eley, 2012).

	This category means...	Pieces in this category might include...	You will need...
Growth/ Progress	You will show how a concept has grown for you over the course of a week.	• a piece of classwork that shows growth on an idea • an exit book goal and question showing understanding • proof of applied feedback on a tast or assignment	**3 pieces in this category**
Questioning	You asked questions of yourself and others to seek help or extend thinking.	• examples of times a concept didn't make sense and you sought help • examples of times a concempt made sense and you took on a challenge • extensions to a problem you explained • questions you asked of yourself or others	**3 pieces in this category**
Group Work/ Particpcation	You worked with others in as a (cannot read) mathematician in math classroom.	• work that shows you changed your thinking based on someone else's ideas • proof work that shows collaboration with others in class • patience with others in math thinking	**3 pieces in this category**

learners forward; and *activating students as resources for one another*) into this lesson, and all five into her class routine on a regular basis, indicates her knowledge of these tools that she knows can help her in her effort. The point of her lessons and her work with her students, like the other examples in this paper, is not to "do formative assessment" but rather to use the tools/strategies of formative assessment to help students learn mathematics.

Activating Students as the Owners of their Learning

Background Information

The importance of activating students as the owners of their learning cannot be underestimated. Multiple studies have shown that strategies used to help students regulate their learning have had significant positive impact on performance (Wiliam, 2011). This classroom example, which was observed in a single classroom, demonstrates one way to accomplish the *essence* of this strategy.

Classroom Example 4

Building on his intentional and systematic approach to engaging students in goals of lessons, exemplified in Classroom Example 2, Mr. Phillip's students complete a weekly self-assessment of their progress. Given a set of criteria (see Figure 10), students are asked to take *ownership of their learning* by providing evidence of their progress in three categories: concept growth/progress; questioning; and group work/participation. Students assess their progress in each of these areas based on the stated criteria and provide concrete evidence of their learning from a range of sources: class work, exit questions, challenge problems, problem extensions, descriptions of changes, and evidence of seeking help on a topic.

Reflection

What is interesting about Mr. Philips's student self-assessment is how the Leahy et al. (2005) strategies are woven into the analysis that the students complete. For "growth and progress," students give evidence of their learning (*activating students as owners of their learning* and *sharing criteria for success*). In the section on "questions," students give evidence of *asking questions of themselves that moved them forward*. Finally, in the section on "group work," students give evidence that *they were a resource to their peers.*

Asking students to gather and analyze this type of information has the potential to do two things. First, it asks student to *take ownership* for making progress in the development of their mathematics learning. Second, it is another opportunity for Mr. Philips, and the students, to elicit, interpret, and use valuable information about their engagement and understanding of the week's mathematics ideas and concepts in the hopes of guiding instruction and the students next step in their learning.

Conclusion

These classroom examples demonstrate how formative assessment can be part of a teachers' regular practice. They are meant to highlight how formative assessment is more than an activity or an event, more than and different from another test or quiz. The examples are meant to show how the Leahy et al. (2005) strategies can support effective use of formative assessment, but only when teachers' use the strategies for the purpose of gathering information, analyzing student understanding, and influencing student learning. Although the examples demonstrate that the effective use of formative assessment is possible, it should be noted that in all of these teachers' classrooms it took time, effort, and a deep commitment to changing their practice. One cannot expect teachers who are beginning to use formative assessment to incorporate all of these strategies at once. Rather, they should focus on incorporating a few ideas at a time and building their practice over time.

Supporting teachers with expanding or incorporating the *essences* of formative assessment will need to include examining one's practice, broadening one's awareness of the strategies, and also constantly growing in one's ability to effectively analyze and appropriately use information to make instructional decisions. It also means connecting the strategies, as exemplified by the classrooms and teachers above.

Although we do not wish to underemphasize the complexity of this task, one starting point for such work is to use the questions that follow to examine teacher practice. These questions are designed to help one examine the actions that teachers take to gather, interpret, and act upon evidence of student learning in the spirit of implementing formative assessment at its *essence*.

- In what ways is there evidence that there is intentional planning for gathering evidence of student thinking throughout the lesson? What is the evidence?
- In what ways are teachers engaging students in the goal of the lesson so that they can begin to take ownership of their learning? What is the evidence?
- Is the teacher using strategies such as think-pair-share and group work to engage all students in the discussion? What is the evidence?
- Are the tasks used in instruction engineered to elicit student thinking in relationship to the instructional goal? What is the evidence?
- Are teachers using the evidence elicited as the lesson progresses to make instructional decisions? What is the evidence?
- Does the teacher have a strategy to gather evidence to inform the next day's instruction? What is the evidence?
- Does the teacher gather descriptive evidence about students' developing understandings, errors, and misconceptions rather than focusing exclusively on the answers to questions for correctness? What is the evidence?
- In what ways does the teacher help students self-regulate their learning? What is the evidence?

These questions can be used by both mathematics education leaders and teachers in a variety of ways: a) as a platform on which to observe practice and provide feedback to teachers on their implementation of formative assessment; b) in a Lesson Study group, to guide the planning, analysis, and revision to lessons; c) during a Professional Learning Community to focus discussion on formative assessment in practice; and d) as a self-assessment tool by teachers focusing on improving their formative assessment in their practice to name a few. ✪

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