



Feed Up, Back, Forward

Teacher response is only one part of an effective feedback system. We must also set clear learning goals and let data influence instruction.

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Like the sailors in Samuel Coleridge's poem "The Rime of the Ancient Mariner" who see "water, water everywhere, nor any drop to drink," teachers often feel awash in a resource that is of little help. Teachers have more assessment data about individual students at their fingertips than we could have imagined a decade ago. Unlike saltwater to a thirsty mariner, the data are of course highly usable resources for teachers. Yet many feel unable to "drink" the data around them because they don't have a system for processing it.

We recently saw a teacher collect literacy assessment data on her iPhone and then upload the scores instantly into the school's computer. It was impressive. When we asked how she planned to use this information, however, the teacher replied, "It's just a benchmark test I'm required to give; I don't really use the data." Therein lies the problem: A resource that could significantly enhance teaching and learning is left unused.

The solution is twofold. First, educators have to understand the three components of any powerful feedback system. Second, we have to align the multiple measures we use to create a coherent system of data collection, analysis, and instruction that responds to data in a way that lifts student achievement.

What Makes a Strong Feedback System?

Feedback is a powerful way to affect student achievement (Hattie & Timperley, 2007). Research consistently ranks feedback as among the strongest interventions at teachers' disposal (Kluger & DeNisi, 1996). But feedback is a complex construct with at least three distinct components, which we call *feed up*, *feed back*, and *feed forward*. To fully implement a feedback system, teachers must use all three.

Feed Up: Clarify the Goal

The first component of an effective feedback system involves establishing a clear purpose. When students understand the ultimate goal, they are more likely to focus on the learning tasks at hand. Establishing a purpose is also crucial to a feedback system because when



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teachers have a clear overall purpose, they can align their various assessments. For example, when it's clear that the purpose of a unit is to compare insects and arthropods, students know what to expect and the teacher can plan readings, collaborative projects, investigations, and assessments to ensure that students focus on content related to this goal.

Feed Back: Respond to Student Work

The individual responses teachers give students about their work are the second component of a good feedback system, and the one that is most commonly recognized. These responses should directly relate to the learning goal. The best feedback provides students with information about their progress—or lack of it—toward that goal and suggests actions they can take to come closer to the expected standard (Brookhart, 2008). Ideally, teachers give feedback as students complete discrete tasks that are part of a larger project so that students can use teachers' suggestions to better master content and improve their performance on the larger project.

For example, in a unit on writing high-quality introductions, a teacher gave students multiple opportunities to introduce topics using such techniques as beginning with a question or startling statistic, leading off with an anecdote, and so on. The teacher provided students feedback on each introduction they wrote so students could revise that introduction and use the suggestions to improve their next attempt. Rather than simply noting mechanical errors, the teacher acknowledged areas of success and highlighted things students might focus on sharpening.

Feed Forward: Modify Instruction

This formative aspect of a feedback system is often left out. In an effective feedback system, teachers use assessment data to plan future instruction; hence the term *feed forward*. As teachers look at student work, whether from a checking-for-understanding task or a common formative assessment, they use what they learn to modify their teaching. This demands greater flexibility in lesson planning because it means that teachers can't simply implement a set series of lessons.

For example, student groups in one 3rd grade class we observed each completed a collaborative poster in response to a word problem. Students had to answer the questions in each problem using words, numbers, and pictures. A typical problem read, "Six students are sitting at each table in the lunchroom. There are 23 tables. How many students are in the lunchroom?" Nearly every group got the wrong answer to its problem. Given this information, the teacher knew she needed to provide more modeling to the entire class on how to solve word problems.

Another teacher noted that six of his students regularly capitalized random words in sentences. Mauricio, for example, incorrectly capitalized *fun*, *very*, and *challenge*. Considering that the other students were not making this error, the teacher knew that a whole-class intervention was unnecessary. Instead, he provided additional instruction for the six students who consistently capitalized at random.

Moving Toward Alignment

For a feedback system to be informative, all measures must align with one another to present a rich portrait of how students are progressing toward a common goal. For example, daily checking-for-understanding practices should contribute to a teacher's understanding of how students will perform with similar material in a unit, in a course, and on state assessments. The following practices form a system of assessment experiences that allow for feeding up, feeding back, and feeding forward.

Check for Understanding

At the core of daily teaching is the ability to check for understanding in such a way that teachers learn how to help students. Fostering oral language and using questioning techniques aid this kind of informed check-in (Fisher & Frey, 2007). The evidence on using student talk as a mechanism for learning is compelling; in classrooms with higher rates and levels of student talk, more students excel academically (Stichter, Stormont, & Lewis, 2009).

Language frames help stimulate academic talk in the classroom and also help gauge students' understanding of concepts. Language frames are cloze statements that provide students with the academic language necessary to explain, justify, clarify, and ask for evidence.

In a mathematics lesson, Ms. Kelly introduced her 1st grade English language learners to the language frame "The _____ is _____-er than the _____" to help them contrast the relative size of two objects, a math standard in Ms. Kelly's district. Using a feedup strategy, she explained that the students' purpose was to approximate the size of two objects. She then had the students, in pairs, practice making sentences using this language frame in several different contexts.

On the day we observed Ms. Kelly's class, student pairs were using this frame to compare the sizes of different animals on laminated cards (see www.ascd.org/el to view a video of this lesson). When Joseph, one of the students, said, "The snake is wider than the duck," his partner Mario asked, "Is the snake wider or narrower than the duck?" to cue Joseph to rethink his answer.

Ms. Kelly let the boys know they needed to approximate more accurately and asked each boy to show the width of each animal with two hands spread apart. Joseph could gesture correctly but could not accurately convert his knowledge to spoken language. Ms. Kelly understood that the barrier was language and not the measurement concept, so she concentrated on reteaching the language frame until Joseph could use it correctly (the feed-forward element).

Questioning is vital to checking for understanding, especially as it pertains to giving feedback on incorrect responses. When faced with a student error, we should remind ourselves that the answer usually makes sense to the student and reflects what he or she knows and does not know at the moment. We can rapidly form a hypothesis about what the student might *not* know to provide a prompt that will help that student achieve the needed understanding. Walsh and Sattes (2005) suggest these follow-up prompts:

- Words or phrases that foster recall ("Think about the role of hydrogen").

- Overt reminders to trigger memory ("The word begins with *d*").
- Probes that elicit the reasoning behind the answer to identify knowledge gaps ("What led you to think the character would do that?")
- A reworded question that reduces language demands. For example, instead of asking a student to "identify the role of tectonic plates in earth geophysical systems," the teacher might say, "Earthquakes and volcanoes have something in common; let's talk about that."

Use Common Assessments

In addition to providing a way to check daily for understanding, an aligned system includes common formative assessments that enable teachers to coordinate with other teachers in their grade level or department. These assessments are usually based on units of instruction and become part of the pacing guide for each course. Such benchmark assessments gauge increments of student performance and provide teachers with data that spur conversation about instructional and curricular design.

We recommend that teachers meet in advance of teaching a unit to develop common formative assessments. The assessment items teachers select should be geared to diagnose specific kinds of learning so that teachers can discuss any misconceptions students still hold after instruction and recognize patterns among students (Fisher, Grant, Frey, & Johnson, 2007). Teachers should meet as soon as possible after they score each assessment to discuss the relationship between the results and teachers' instruction and to plan next steps (the feed-forward component).

Partial conceptual understanding is a common cause of incorrect responses. For example, Ms. Goldstein's English as a second language class was studying affixes in preparation for a benchmark assessment. Ms. Goldstein explained that the lesson's purpose was to analyze new vocabulary words (feed up). Omar incorrectly identified *in-* as the prefix for *interlude*. Rather than simply supply Omar with the correct answer and move on, Ms. Goldstein asked him what the prefixes *in-* and *inter-* meant and received a correct reply. "Could the root be '-lude,' or is it '-terlude'?" Ms. Goldstein questioned. Omar stayed with his initial incorrect answer, so she tried again, asking Omar's small group, "Is the prefix *in-* or *inter-*? I'll let you figure it out" (providing feedback that something needed to be figured out).

Omar's group talked about the two meanings and how they would affect the overall word. Ms. Goldstein checked a few minutes later on whether Omar and his group had arrived at the correct answer.

After the English as a second language department administered its common formative assessment on affixes, Ms. Goldstein remarked, "I noticed some students in my class getting similar prefixes like *in-* and *inter-* confused. This was a pattern in all our classes. How can we teach look-alike prefixes more effectively?" The teachers decided to develop a Jeopardy-style game that included easily confounded affixes to give students practice.

Identify Competencies

Although unit-based formative assessments are valuable benchmarks to inform teachers' instruction, they offer students only snapshots of their progress. Learners need a system to measure their own attainment of course goals. Goals should be a balance of short-term ("I'm going to ask good questions today") and long-term ("I'll pass biology"); however, the gap between short-term and long-term goals can be overwhelming. Creating a system of specific competencies that students should achieve in a course and a series of assessments that measure those competencies and provide clear feedback enable students to measure their progress through any course.

Grade-level teams or departments usually specify course competencies and corresponding assignments. Competencies should reflect the state standards while offering students an array of ways to demonstrate mastery, not just paper-and-pencil tasks. The competency assessments should be numerous enough that students can adequately gauge their own progress at attaining competencies; generally 7 to 10 per academic year is best.

Ninth and 10th grade English teachers at one high school devised a series of 10 competency assessments for their common courses. These included four essays based on schoolwide essential questions, two literary response essays, an oral language assessment that included retelling a story and delivering a dramatic monologue, a poetry portfolio, and tests on persuasive writing techniques and summarizing.

These teachers designed a two-week unit on plagiarizing that, as they explained to students in a "feed-up" message, would help them write their formal essays. The teachers developed a common formative assessment that measured how well students could cite information from a newspaper article, a Web site, a book with two or more authors, and an interview. The results indicated that even after studying plagiarism, many students still couldn't correctly cite online sources. Knowing that students would need this competency to write their first essay, teachers analyzed students' incorrect answers and retaught the specifics of this type of online citation accordingly.

Build Toward State Assessments

An aligned system of assessments should build toward helping students do well on state tests that measure the progress of students and schools. Although we do not believe a few weeks crammed with test-prep worksheets are useful, we do believe that students should understand that tests are a genre, one they are capable of mastering. And we advocate assessment practices that build test wiseness by giving students encounters with test formats in the context of meaningful instruction.

For example, a math teacher might model thinking aloud as she eliminates distractors on multiple-choice questions. When faced with the problem $\frac{1}{7} + \frac{3}{7}$ and three answer choices of $\frac{4}{7}$, $\frac{3}{7}$, and $\frac{4}{14}$, the teacher might say, "I see one of the choices has 14 as a denominator. But I know you don't add the denominator when adding fractions so that can't be correct." When teachers embed test-format practice within daily checking for understanding, formative assessments, and course competency exams, students acquire the stamina and skills they

need to score well on state assessments.

What the Mariner Teaches Us

"The Rime of the Ancient Mariner" is a cautionary tale about failing to learn from one's mistakes. The mariner was doomed to walk the earth telling strangers that he had killed an albatross that had saved his ship from disaster. If educators view data as a liability simply because we don't know what to do with that data, we risk ignoring something that may help us. By viewing assessment as a system that gives us the power to feed up, feed back, and feed forward, we can avoid mistaking help for hindrance.

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