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## The Rest of the Story

**The power of formative classroom assessment depends on how you use the results.**

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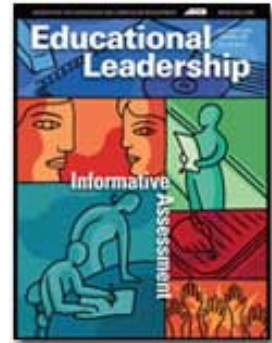
Radio commentator Paul Harvey gained widespread fame by reporting factual stories with a twist at the end. What he called "the rest of the story" typically gave the report entirely new meaning, leaving listeners surprised but well informed. Were Harvey to report on the use of formative classroom assessments, he undoubtedly would describe how increasing numbers of educators today consider these regular checks on learning progress to be an integral part of the instructional process. He would point out that well-designed formative assessments can provide students with essential feedback and inform teachers about the quality of their teaching by identifying concepts that students have and haven't mastered (Guskey, 2003; Hattie & Timperley, 2007).

The rest of the story, however, would be that formative assessments alone do little to improve student learning or teaching quality. What really counts is what happens *after* the assessments. Just as regularly checking your blood pressure does little to improve your health if you do nothing with the information gained, what matters most with formative assessments is how students and teachers use the results. Unfortunately, many educators today overlook this vital aspect of formative assessment. And by missing "the rest of the story," they fail to produce the most valuable benefits of the formative assessment process.

### An Old Idea Reborn

The importance of using classroom assessments as learning tools was identified more than 35 years ago by Benjamin Bloom and his colleagues in *Handbook on Formative and Summative Evaluation of Student Learning* (Bloom, Hastings, & Madaus, 1971). They described the benefits of offering students regular feedback on their learning progress through formative classroom assessments. As the name implies, formative assessments are designed to inform (see Scriven, 1967). They pinpoint for both students and teachers what concepts and skills have been learned well and what learning problems still exist.

Bloom and his colleagues stressed, however, that to improve student learning these regular progress checks must provide feedback (identifying students' individual learning difficulties) and be followed up with correctives (specific remediation strategies). Such procedures are



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precisely what make individual tutoring so effective. When a student being tutored makes a mistake, the tutor points out the error and immediately provides further explanation and clarification. Academically successful students typically initiate their own feedback and correctives: They follow up on the mistakes they make on quizzes and tests, seeking further information and greater understanding so that they do not repeat their learning errors. Most students, however, need a more structured classroom corrective process to help them use formative assessment results to improve their mastery of the concepts and skills.

Bloom and his colleagues further emphasized that correctives will be effective *only* if they are qualitatively different from the original instruction. Having students repeat a process that has already proven unsuccessful is unlikely to yield any better results the second time around. Effective corrective activities provide students with alternative pathways to learning success, adapted to meet their individual learning needs and interests (see Duffy & Kear, 2007).

## **Planning Corrective Activities**

Effective corrective activities possess three essential characteristics (see Guskey, 1997). First, they *present the concepts differently*. For example, if a language arts unit initially taught the use of metaphors in poetry with a deductive approach (presenting the general concept and then giving specific examples), the corrective activity might use an inductive approach (presenting a variety of specific examples and building an understanding of the general concept from these examples). The best corrective activities involve a change in format, organization, or method of presentation.

Second, effective corrective activities *engage students differently in learning*. They consider different learning styles or modalities (Given, 2000; Lawrence, 1997; Sternberg, 1994) or different forms of intelligence (Armstrong, 2000; Gardner, 2006; Silver, Strong, & Perini, 2000). If science students initially learned about cell structure through a group activity, for example, a good corrective might involve an individual activity, such as reviewing an informative Web site and then using the computer to write and illustrate a report. If students originally learned the events of the American Revolutionary War in social studies by reading passages in their textbook and studying wall maps and charts (visual intelligence), a useful corrective might employ a group discussion of the events (auditory and interpersonal intelligence). To make a corrective strategy effective, students' engagement in learning must be qualitatively different from what took place during the initial instruction.

Finally, effective corrective activities *provide students with successful learning experiences*. If an activity does not help students overcome their learning difficulties and experience success, the teacher should abandon it for another option. Corrective experiences should make students better prepared, more confident, and more motivated for future learning tasks.

The best ideas for effective corrective activities generally come from fellow teachers. Teaching colleagues often can offer new ways of presenting concepts, different examples, and alternative materials. Professional development opportunities that provide teachers with time for such sharing reduce the workload of individual teachers and typically yield higher-quality activities (Guskey, 1998, 2000). Faculty meetings devoted to examining classroom assessment

results and developing corrective strategies also work well. Such meetings also might involve district-level personnel or content experts from local colleges and universities.

## Types of Corrective Activities

Many teachers find it useful to organize corrective activities into three groups: those to be done with the teacher, those to be done with a friend, and those to be done by oneself (see fig. 1). Although any particular activity may fall into more than one category, every activity should be designed to provide students with a different presentation and mode of engagement. Most teachers plan several types of corrective activities for each instructional unit to give students some choice and to accommodate a wider variety of learning styles and modalities. Further, if a particular activity falls flat, having several activities planned makes it possible to turn to another immediately without wasting valuable time. These are a few corrective activities that many teachers find to be effective:

**Figure 1. How to Use Corrective Activities**

Corrective Activity	With the Teacher	With a Friend	By Oneself
Reteaching	X		
Individual Tutoring	X	X	
Peer Tutoring		X	
Cooperative Teams		X	
Course Textbooks	X	X	X
Alternative Textbooks	X	X	X
Workbooks and Study Guides	X	X	X
Academic Games	X	X	X

Learning Kits		X	X
Learning Centers and Laboratories		X	X
Computer Activities		X	X

## Reteaching

The simplest and most frequently used corrective activity involves reteaching. The teacher, or another teacher in team-teaching situations, explains difficult concepts again using a different approach or different examples. Most teachers use reteaching as they review the results from formative assessments with students, reexplaining concepts that many students misunderstood or found difficult, before turning to other types of corrective activities.

The greatest challenge with reteaching, of course, is ensuring that it involves a truly different presentation and level of engagement. When reteaching a difficult concept, some teachers simply restate their original explanation louder and more slowly, perhaps believing that increased volume and a slower pace are what some students need. This approach seldom works.

## Individual Tutoring

One of the most effective corrective activities is individual tutoring. In most cases, the tutor goes through the formative assessment with the student, explaining concepts that the student missed in a new way or from a different perspective, continually checking for understanding as they move along. Even teachers who employ other forms of correctives usually monitor students' understanding with some individual tutoring, especially for those students with more serious learning difficulties. Many teachers have obtained excellent results using older students, teacher's aides, and classroom volunteers as tutors (Topping & Bryce, 2004; Wright & Cleary, 2006). Regardless of who serves as the tutor, individual tutoring consistently ranks among the most efficient and most powerful types of corrective activity.

## Peer Tutoring

Students who have already mastered the important concepts and skills in the unit often make excellent tutors for their classmates. Like other tutors, peers typically explain concepts from a different perspective or in a different way (Kourea, Cartledge, & Musti-Rao, 2007). In addition, research indicates that students who serve as peer tutors generally benefit as much as the students they assist (Medcalf, Glynn, & Moore, 2004). Helping classmates understand new concepts or master new skills often deepens their own understanding. Most teachers find, however, that peer tutoring is best presented as one of several corrective options from which students can choose. Requiring two mismatched students to work together can be

counterproductive.

### **Cooperative Teams**

In cooperative teams, three to five students get together to discuss their learning gaps and to help one another. The teams are heterogeneous, assigned by the teacher, and usually stay intact for several learning units. During the corrective session, students review the formative assessment item by item. Any question or crucial element that one or more students have missed is explained by another team member who understands it. If all members of the team are having difficulty, they can work collaboratively to find a solution or call on the teacher for assistance. With modest direction and supervision, cooperative teams can be a highly effective corrective activity at any level of education (Johnson & Johnson, 1995; Slavin, 1991).

### **Textbooks**

Another simple but highly effective corrective is to have students reread relevant sections in the textbook. Rereading is especially effective when combined with other activities, such as having students write a short paragraph explaining the concept in their own words. Teachers who use the textbook as a corrective resource typically list page-number references beside each item or problem on the formative assessment so that students can turn directly to the relevant sections or examples. Although referring students to the textbook may seem to be repetition of the same old thing, focusing students' attention on specific passages often helps them recognize or clarify important concepts and information they missed in their initial reading.

### **Alternative Textbooks**

When available, alternative textbooks often provide a different presentation or explanation of crucial ideas or concepts. Many teachers save several copies of their old textbooks when a new one is adopted to offer students an additional source of information. Other teachers use alternative textbooks to provide additional practice exercises, examples, or problems.

### **Alternative Materials, Workbooks, and Study Guides**

Alternative materials include videotapes, audiotapes, DVDs, hands-on materials, manipulative models, Web-based resources, and so forth. Because workbooks and study guides usually present ideas and concepts in a different way from textbooks and often include examples or practical applications, they can provide excellent corrective activities for a wide range of student learning styles. In addition, the variety of presentation formats allows the teacher to choose appropriate materials that the student can use with the teacher, with a friend, or for working alone.

### **Academic Games**

Most academic games consist of group activities in which students work together to solve a particular problem or accomplish a task that relates to specific learning goals (Harnadek, 1992; Larson, 2002). Many academic games can be adapted or modified to fit a variety of learning situations. Like cooperative teams, academic games typically promote cooperation and

collaboration among students and can be a highly effective corrective activity.

### **Learning Kits**

Learning kits usually present ideas and concepts visually and often involve the manipulation of materials. In addition, most kits can be used with the teacher, among a small group of students, or by a student working alone. Learning kits might include puzzles, learning tools, or other instructional materials. Many involve the use of models or manipulative materials; others are based on interactive multimedia content (Learning Kit Project, 2007). Although learning kits are widely available from commercial publishers and Web-based sources, many teachers assemble their own from materials they gather.

### **Learning Centers and Laboratories**

Directing students to learning centers or learning laboratories in the classroom or in another part of the school often serves as a highly effective corrective activity. In these centers, students get help on their specific learning problems, often under the guidance of a learning supervisor or center aide. Center activities typically engage students in more hands-on and manipulative tasks than might have been possible during the initial instruction. Centers are most effective as a corrective when students are involved in a structured activity and receive a specific assignment to complete.

### **Computer Activities**

Many teachers use computers and other forms of technology—including videodiscs, laser discs, interactive video, various forms of hypermedia, and a variety of powerful online resources—as a primary means of corrective activities. The highly versatile, user-friendly nature of technology makes it appropriate for almost any subject area and grade level. Computer activities enable students to work alone or in collaboration with classmates. Many tutorial programs also enable students to control the kind and amount of assistance they receive; this individualized interaction makes assistance potentially less embarrassing. When students become familiar with a program's operation, and when the software closely matches the learning goals, computer activities can be highly effective as a corrective (Dillon & Gabbard, 1998; Kumar, Greer, & McCalla, 2005; Perry, Thauberger, MacAllister, & Winne, 2005).

### **Planning for Enrichment Activities**

On any given formative assessment, some students will demonstrate their mastery of unit concepts and skills on the first try and will have no need for corrective activities. Rather than sitting around, biding their time while other students relearn the material, these students need opportunities to extend their learning through enrichment activities.

Effective enrichment must provide valuable, challenging, and rewarding learning experiences. Students who master the learning objective the first time and perform well on the formative assessment should view enrichment activities positively—not simply as harder tasks or busywork. Rather than being narrowly restricted to the content of specific instructional units, enrichment activities should be broadly construed to cover a wide range of related topics.

Students should have some degree of choice in selecting enrichments. For example, if a learner has a special interest in some aspect of the subject, using enrichment time to prepare a report on that topic not only provides a unique learning opportunity but also enhances this student's motivation to do well in subsequent formative assessments so that he or she can return to working on the report. Other examples of enrichment activities include challenging academic games and exercises, various multimedia projects, and peer tutoring.

Some creative teachers find it easy to develop different types of enrichment activities for their students. Others struggle to create such learning experiences. Besides consulting with colleagues, many teachers turn to materials designed for gifted and talented students as their primary resource for enrichment. Certain publishers focus specifically on activities that genuinely extend students' learning by involving them in higher-order skills (for example, Critical Thinking Press and Software in Pacific Grove, California; Dale Seymour Publications in Palo Alto, California; and Thinking Works in St. Augustine, Florida). Further, the game-like nature of many of these activities motivates students to want to take part. Most teachers use class time in early instructional units to engage all students in enrichment activities, both to encourage participation and to enhance students' motivation on future formative assessments.

## **Managing Corrective and Enrichment Activities**

Mr. Tanabe is a typical 4th grade teacher whose class has just studied a two-week unit on multiplying and dividing fractions. He administers a 20- to 25-minute formative classroom assessment that he corrects with his students in class, reviewing each item and stopping occasionally to reexplain ideas or concepts that appear troublesome to most of the students. After completing the review, he reminds students that the mastery or proficiency standard is 80 percent correct.

He then divides students into two groups: those who attained the proficiency standard and those who did not. Students who demonstrated their proficiency can choose from various enrichment activities—including working with partners to write original word problems or doing a guided Web search to learn about a famous mathematician—or they may volunteer to serve as peer tutors. Those who did not reach proficiency begin their corrective work under the teacher's direction. The cooperative teams that Mr. Tanabe has put into place move their desks together to begin working with their teammates.

Mr. Tanabe does three important things when dividing the class into separate corrective and enrichment groups. First, he recognizes students who attained the proficiency standard for their achievement. A quick show of hands followed by congratulations helps sustain these students' persistence in future learning units. Next, he reminds students that group membership is temporary and can change with every unit and every formative assessment. As students' performance changes, so will the members of both corrective and enrichment groups. Finally, he emphasizes his confidence in the skills of those students who have not yet attained proficiency. He assures these students that with a little extra time and effort they too will reach the proficiency standard and will be well prepared to tackle upcoming units.

After starting the enrichment group on its activities, Mr. Tanabe turns his attention to the

corrective group. He begins with reteaching, using some supplemental materials to present difficult ideas and concepts in a new and different way. He then moves to guided practice activities, leading students through structured problems or exercises. He includes practice time in which some students work independently to demonstrate their understanding and others work with peer tutors. As students work, he moves from student to student, asking questions and offering individualized assistance. At the same time, he checks on students engaged in enrichment activities, making sure they remain on task.

As this example shows, correctives rarely involve a single activity. In this case the teacher combined reteaching with alternative materials, guided practice, independent practice, and individual tutoring. When students work on their own or with a friend, most teachers require completion of a written assignment that summarizes their work. Enrichment activities may be similarly diversified, and many teachers require a tangible product from these students as well. After students become accustomed to the corrective and enrichment process, however, teachers often relax or eliminate this requirement.

## **Finding Time**

Some teachers fear that taking time for corrective and enrichment activities in each instructional unit will lessen the amount of material they will be able to cover. They believe that as a result of sacrificing coverage to allow a higher level of learning, some students may learn better but all will learn less.

Corrective and enrichment activities initially do add time to instructional units. Especially in early units, these activities must be done in class, under the teacher's direction, and typically require a class period or two. Teachers who ask students to complete correctives outside class as a homework assignment or during special study sessions held before or after school rarely experience success with this strategy. Instead, they quickly discover that those students who could benefit most from the corrective process are the least likely to take part.

After students become accustomed to the corrective process and realize its advantages, most teachers begin reducing the class time they allocate to correctives. They use more student-initiated activities and ask students to complete more of their corrective work outside class. As students remedy their learning problems in early units, they perform better on formative assessments in subsequent units. This improvement leads to more students becoming involved in enrichment activities and fewer students engaged in correctives. The amount of corrective work each student needs to reach the proficiency standard also diminishes (Whiting, Van Burgh, & Render, 1995).

Modest changes in instruction further lessen the extra time needed. Many teachers, for example, eliminate review sessions prior to formative assessments and shift that time to the corrective and enrichment process. With the results from the formative assessment, teachers can become more efficient in their review, concentrating on those concepts and skills that pose problems for students. In addition, by allowing fast learners to demonstrate their proficiency and move on to enrichment activities, teachers can spend their time working with a smaller group of students who need their assistance most.



In general, teachers do not need to sacrifice content coverage to implement corrective and enrichment activities, but they must be flexible in pacing their instruction. The time used for correctives and enrichment in early units yields powerful benefits that will make the pace of instruction faster later on. Teachers must keep in mind what the class needs to accomplish by the end of any learning sequence, but they also must see students' pathways to that end in more flexible and accommodating terms.

## **Making Good Use of a Valuable Tool**

Formative classroom assessment offers educators a valuable tool to improve student learning. But to realize the true benefits of such assessment, we need to focus attention on what students and teachers do with the assessment results. To close achievement gaps and help all students learn well, educators must provide students with alternative pathways to learning success. Engaging students in diverse corrective activities or exciting and challenging enrichment activities, depending on their performance on well-designed formative assessments, offers the practical means to do just that.

And now you know ... the rest of the story.

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