



Formative Assessment: Mapping the Road to Success

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“Are my students learning?”

“What are their current skill and ability levels?”

“Do they have the chance to monitor their own progress toward learning outcomes?”

“When the yearly, high-stakes test is administered, how will they perform?”

All educators want to know how their students are performing academically. And in today’s climate of high-stakes testing and increased accountability they need to know how they are achieving. How can educators meet this challenge, close existing achievement gaps between subgroups of students, and ensure all students succeed? An important tool on the journey to achievement is **assessment**.

Educational **assessment** involves gathering and interpreting information about a student’s performance to determine mastery toward defined learning objectives or standards. Typically, results of tests, assignments, and other learning tasks provide the necessary performance data.

Assessment is not instruction, but it can influence learning and support achievement. It can serve as a roadmap of sorts, allowing teachers and students to chart a course toward achievement. Effective assessment is an integrated component of any instructional program. While many programs are limited to summative assessment, formative assessment has a larger role in affecting student performance at the classroom level.

“Formative assessment is essentially feedback to the teacher and the student about present understanding and skill development in order to determine the way forward” (Harlen and James 1996, p. 4). Formative assessment allows students to self-assess their progress. It allows teachers to identify students’ areas of strength and weakness and adjust learning activities and their instructional emphasis to meet each student’s learning needs.

Educators can use a variety of strategies to collect performance data via formative assessments. Classroom tests and quizzes, in-class and homework assignments, discussions, and projects are all examples of data-rich, formative assessment vehicles. While teachers routinely use many of these activities, they don’t always use them with the idea of formative assessment. By moving beyond merely assigning a grade to using assessment results to inform instruction and learning (Black and Wiliam 1998; Boston, 2002; Hurley and Tinajero, 2001), teachers are able to more effectively meet each student’s unique learning needs and promote achievement for all students.

Assessment Definitions

Assessments can confirm and ensure the effectiveness of an instructional program at the district, school, classroom, and individual student levels. It answers questions: “What did the student learn?”

Formative Assessment is the use of assessment to give students and teachers feedback on student ability levels and performance prior to and during instruction.

Summative Assessment is the use of assessments at the conclusion of a program or instructional unit; for example, a mastery test covering the program’s key learning objectives.

Formative Assessment and the No Child Left Behind Act

While formative assessment has always had a place in outcomes-based instruction, the *No Child Left Behind Act* (NCLB) has heightened educators' attention on all forms of assessment. In response to decreasing scores in reading, math, and science and increasing gaps between demographic subgroups, the legislation mandated increased assessment and accountability to ensure that no child is left behind academically (Campbell, J. R., Hombo, C. M., and Mazzeo, J. 2000; U.S. Congress 2002; U.S. Department of Education 2004a, 2004b). Today, NCLB's accountability requirements impact every student, school, and district in the nation.

The NCLB mandate directs states to design, develop, and implement education programs that have their foundation in rigorous standards in reading, math, and science. Under this legislation, states, school districts, and schools are accountable for the academic performance of all students. They must record and monitor data and disaggregate performance by gender, ethnic/racial group, English language proficiency, disability, socioeconomic status, and migrant status.

If districts and schools do not demonstrate adequate yearly progress (AYP) of all students toward proficiency goals, then the federal government may impose a variety of sanctions (U. S. Congress 2002; U.S. Department of Education 2004a, 2004b). The push for adequate yearly progress affects funding, selection of instructional programs, student support, parent choice, and the very viability of a school.

Formative assessment tracks each student's performance and provides feedback along the way. Teachers who use continuous, formative assessment are seldom surprised by an individual student's performance on the annual achievement test. Annual achievement testing then shifts from a "one-shot" pass or fail chance to perform, to a single point along each student's continuing path to mastery.

Benefits at the Classroom and District Levels

Formative assessment benefits students, teachers, and district administrators alike. In the classroom, students better understand their own strengths and weaknesses and can chart a course to mastery. Teachers can monitor the effectiveness of their instruction and adjust their work based on solid student achievement data. Administrators can use formative assessment at the district level to monitor individual school performance and provide assistance and intervention as necessary.

The Princeton Review Formative Assessment Programs

School districts have three primary purposes for initiating a formative assessment program:

- providing data-driven differentiated instruction;
- charting growth in student scores; and
- predicting student performance on the state assessment.

While these goals are not necessarily mutually exclusive, many districts find them challenging to implement together. We believe it is the sum of the parts that provides the most powerful instructional support and monitoring of student achievement.

Benefits of Classroom-based Formative Assessment

If the expectation is that *all* children can achieve a mastery level, then formative assessment is a tool that can help educators meet that goal. Formative assessment can counteract a common cycle in which students attribute their poor performance to a lack of ability, become discouraged, and are then unwilling to persevere until they master the content (Ames 1992; Boston 2002; Vispoel & Austin 1995).

Formative assessment provides a powerful and proven means to improve performance for all students. Research validates the relationship of formative assessment to increasing student performance and closing the achievement gap. Black and Wiliam (1998) reviewed 250 articles and chapters on formative assessment research and found that research has provided quantitative evidence that formative assessment is directly linked to learning gains and that the gains are, in fact, “significant and often substantial” (p. 3). Further, their research indicates that formative assessment “helps low achievers more than other students and so reduces the ranges of achievement while raising achievement overall” (p. 3).

Classroom strategies that support formative assessment

Research has identified a variety of activities that support formative assessment in the classroom.

- **Classroom tests and quizzes**, based on defined, measurable objectives, can be used as formative assessment when feedback includes specific information on correct answers and errors, and ways to remediate the errors (Commission on Instructionally Supportive Assessment 2001; Gronlund 2000; Mager 1997; Nitko 1996; Walvoord and Anderson 1998). Short, frequent tests provide “occasion for learning,” allowing teachers to evaluate new learning within the first week after the content is introduced, ensuring that learning has occurred and that a foundation for new learning has been laid (Black and Wiliam 1998). Correcting tests and issuing a summative score does not ensure learning. Students need feedback that guides them toward the steps necessary steps for improved student achievement.
- **Self-evaluation** is an underused formative assessment strategy. Experimental research studies have illustrated that students improve their academic performance when they have a thorough understanding of both learning objectives and corollary assessment criteria. This dual understanding enables students to reflect on their performance and then self-define and monitor a plan toward mastery (Fontana & Fernandez 1994; Frederickson & White 1997). Teachers can use this method before or after an assessment or learning activity. Students receive information about the goal of a learning activity before they begin and/or receive feedback about how they performed afterward. They then reflect on their current proficiency--the learning gap between what they know and the learning goal--and the path to improvement. Self evaluation empowers students to take control of the learning experience and, in turn, improve their achievement (Boston 2002; Fontana & Fernandez 1994; Frederickson & White 1997).

- **Observation** is the oldest known scientific method for the study of nature, and when applied to the classroom can reap benefits for both teacher and students (Hein 1991). Here, the teacher observes students' verbal and non-verbal behavior, and the steps they take to complete assignments. The goal is to gather data for diagnosing student challenges and provide corrective feedback. Tracking these observations through a journal or log allows the teacher to monitor progress over time. It also allows teachers to categorize particular types of behaviors with particular problems and the steps that were successful in solving them.
- **Classroom discussion** involves open-ended questions and discussions with and between students. The goal is to build knowledge and develop critical and creative thinking skills. Discussions allow students to increase the breadth and depth of their understanding while discarding erroneous information and expanding and explicating background knowledge (Black and Wiliam 1998; Doherty 2003).
- **Classroom assignments and homework assignments** provide interactions that allow students to demonstrate proficiency and understanding of learning objectives. They also provide teachers with a vehicle to diagnose student performance and suggest activities to improve achievement (Wiske 1998). Teachers can use formative assessment results to monitor student progress and individualize learning, creating a multilevel classroom in which all students can succeed. Activities and scoring criteria in the differentiated classroom are customized for learners at all levels.
- **Student written work and projects** can provide information concerning authentic student performance. During the life of the project, teachers can observe student planning, development of ideas, and thought processes along with the development, revision, and presentation of a particular project. These observations will give teachers and students insight into students' abilities to function in the real world, which requires the ability to judge and refine their work and efforts before, during, and after they have accomplished them (Zessoules and Gardner 1991). When using authentic representations, teachers should respond to them meaningfully; both teachers and students should review to assess improvement over time. (Duschl & Gitomer 1997).
- **Teacher feedback** is integral to student improvement since students must first understand what the learning goal is, what their own proficiency is, and how they can close the learning gap between what they know and what they need to know. Teachers fulfill the first step when they present learning objectives and assessment criteria to students during instruction. The formative assessment activity helps students understanding their proficiency, and the feedback the teacher gives the student helps close the learning gap (Boston 2002; Ramaprasad 1983; Sadler 1989; Tunstall and Gipps 1996). The more specific the feedback about errors and steps to improve learning, the more students will improve (Bangert-Drowns, Kulick, & Morgan 1991; Elawar & Corno 1985; Boston 2002). Students, particularly those who are low-performing, need a path to mastery that builds on their current proficiency and moves them toward mastery.

While not a formative assessment strategy in and of itself, student motivation is directly influenced by the feedback it can provide. Students' motivation to learn and their belief that they can improve is at the foundation of achievement (Ames 1992; Jacob 1999; Slavin 1983). A

classroom in which formative assessment is implemented provides opportunities to engage and thus motivate students.

Characteristics of classrooms using formative assessment

In their examination of research on formative assessment, Black and Wiliam (1998) noted that classrooms in which teachers implement formative assessment show important differences when compared to those that don't. These classrooms feature the following attribute:

- Ongoing assessment that is integral to instruction
- Defined learning objectives and assessment criteria that are presented to students
- Actively involved students
- Opportunities for students to self-assess
- Teacher belief that all students can improve
- Assessment data is used to drive instruction
- An emphasis on improvement of learning rather than letter grades.

Activities and grades in formative assessment classrooms are a means to an end, with the end being *all* students' mastery of learning objectives. Because many students have been led to believe that grades—rather than learning—should be the focus of their attention, the first step in improving formative assessment is to reroute their focus to active learning. Formative assessment can have an enormously ameliorative effect with low-performing students when the focus changes from scores to learning and from competition with other students to self improvement (Black and Wiliam 1998).

Benefits of District-wide Formative Assessment

Administrators can realize equal benefits from district-wide formative assessment programs. Formative assessment programs allow administrators to benchmark student proficiency against state standards at district, school, and class levels at the beginning of the year and then track performance throughout the year. This not only provides ongoing accountability but, if designed appropriately, can help predict student achievement on end-of-year tests. This in turn allows districts to foresee if adequate yearly

***The Princeton Review* Formative Assessment Design**

How can teachers assure students are making adequate yearly progress towards mastering objectives covered on the state test? How can districts monitor student performance and make instructional decisions?

Districts that have adopted The Princeton Review's formative assessment programs use formative assessment item banks to monitor each student's performance throughout the school year. Formative Assessment programs are typically based upon one of the following three models:

- **Uniform Formative Assessment Design.** Assessments are designed to monitor achievement toward standards throughout the year that do not take into account curriculum pacing. Customers select a subset of skills to assess and build each test form so these selected skills are assessed on each test form.
- **Scope and Sequence Formative Assessment Design.** Each test form is designed to assess students on what they have just been taught. It is most useful in districts that have a standardized scope and sequence that is consistent throughout the district.
- **Hybrid Formative Assessment Design.** This model is a combination of the first two.

progress will be achieved and take steps to remediate any problems early in the school year when improvement is still possible.

A commitment to formative assessment as a vehicle for increasing student achievement likely requires changes in teacher instruction practices. Administrators at the school and district levels can use the results of formative assessment to determine teacher efficacy and identify topics and areas of instruction on which to focus professional development. “As researchers the world over have found, high-stakes external tests always dominate teaching and assessment. However, they give teachers poor models for formative assessment because of their limited function of providing overall summaries of achievement rather than helpful diagnosis” (Black and Wiliam 1998, p. 6).

Implementing formative assessment across a school or district also provides administrators with a powerful tool for ensuring student improvement and achievement. Its presence prompts teachers to use assessment data to inform instruction and to provide feedback to students so that the learning gap can be closed through ongoing improvement of student performance (Dahlkemper 2002). Administrators can also create formative assessment cohorts across districts. Such cohorts allow teachers to collaborate in study groups and lesson studies, determine the most effective methods and strategies for implementing formative assessment in different grade levels and content areas, and work together to support students’ mastery.

Formative assessment strategies can transform a school or district’s classrooms. They prompt teachers to change teaching and learning practices by

- involving students by telling students what they are going to learn and how they are going to be assessed;
- diagnosing individual student proficiency; and
- providing a path to improvement through specific feedback.

The Princeton Review’s Formative Assessment Programs

The Princeton Review’s formative assessment programs have been designed to benefit students, teachers, and administrator alike. They enable districts to benchmark student achievement throughout the year, allowing teachers to diagnose student strengths and weaknesses and create action plans to improve instruction at the classroom level.

The most effective formative assessment program is one that delivers valid, reliable assessments that are truly designed to be low-stakes and to drive student performance.

The Princeton Review’s formative assessment programs feature the following components:

Valid and Reliable Items. The Princeton Review’s system includes valid items based on more than 20 years of research and development, review, and quality improvement. With more than 180,000 items in the system, the Princeton Review offers assessment in all content areas.

Two assessment item banks are available, each offering high-quality, valid, and reliable items:

- Premium item bank: A broad item bank that aligns to a state’s standards.

- Custom item bank: A bank with items that have been specifically designed to match the idiom and format of an individual state assessment.

The assessment items in both banks are aligned to state standards and criterion-referenced.

Because each item also provides feedback for both correct and incorrect responses, teachers can provide item-specific coaching to students during the formative assessment process.

Expertise in All Forms of Assessment. *Assessment* is The Princeton Review’s business. A recognized leader in the field, The Princeton Review provides districts with the expertise of Princeton Review consultants and wide-ranging formative assessment services--from assessment blueprint design and mapping to formative assessment review and psychometric analysis.

The Princeton Review’s formative assessment programs are coupled with professional development to assure successful implementation. The professional development program helps teachers effectively implement the program and assist both teachers and administrators in analyzing and utilizing assessment results.

Support for All Stakeholders. The Princeton Review’s formative assessment reports are designed for all stakeholders – students, teachers, parents, and school administrators. Easy to read and comprehensive, they identify trends over time while drilling down to individual student responses on an individual assessment. Reports are delivered in an efficient, timely manner to provide teachers and administrators with the information to differentiate instruction. In fact, the reports are so user-friendly that little effort is required to interpret the data. This leaves teachers more time to do what they do best: teach.

Reports for Data-driven Decisions. The Princeton Review’s formative assessment system manages its assessments through Homeroom Assessment Center, a Web-based, scalable, user-friendly platform to provide an interim assessment program that is easy to implement and provides timely access to user-friendly data reports. The Center provides a flexible model for test administration. Depending on a districts’ preference, the formative assessments can be delivered online and/or in paper-and-pencil format.

Conclusion

This paper presents an overview of formative assessment as an important tool to be employed for both teaching and learning. In today’s climate of accountability and high-stakes testing, formative assessment provides all stakeholders—administrators, teachers, students, and parents—with frequent and useful data to guide student learning. Formative assessment lessens the burden of yearly testing by providing regular, ongoing, standards-relevant measures of student mastery. Skill deficiencies are identified early and can be addressed before progress is seriously

The Princeton Review Benefits to the Classroom and District

Districts implementing The Princeton Review’s assessment programs benefit from informed instructional decisions.

“[The Princeton Review’s] groundbreaking interim assessment program will help teachers identify problems during the school year so that they can effectively intervene to address student’s needs. The assessment data will also serve as an invaluable academic planning and professional development resource for our teachers, coaches and principals.”

affected. When used effectively, formative assessment serves as a map for each student's achievement, allowing stakeholders to continuously monitor and adjust the course to mastery.

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