Assessment is the use of a variety of procedures to collect information about learning and instruction. Formative and summative assessment represent two classifications of assessment, each with a distinct purpose. Formative assessment is commonly referred to as assessment for learning, in which the focus is on monitoring student response to and progress with instruction. Formative assessment provides immediate feedback to both the teacher and student regarding the learning process. Summative assessment is commonly referred to as assessment of learning, in which the focus is on determining what the student has learned at the end of a unit of instruction or at the end of a grade level (e.g., through grade-level, standardized assessments). Summative assessment helps determine to what extent the instructional and learning goals have been met. Formative and summative assessment contribute in different ways to the larger goals of the assessment process.

PROCEDURES USED IN FORMATIVE ASSESSMENT

Formative assessment includes a variety of procedures such as observation, feedback, and journaling. However, there are some general principles that constitute effective formative assessment. Key requirements for successful formative assessment include the use of quality assessment tools and the subsequent use of the information derived from these assessments to improve instruction. The defining characteristic of formative assessment is its interactive or cyclical nature (Sadler, 1988). At the classroom level, for example, teachers collect information about a student's learning, make corresponding adjustments in their instruction, and continue to collect information. Formative assessment can result in significant learning gains but only when the assessment results are used to inform the instructional and learning process (Black & William, 1998). This condition requires the collection, analysis of, and response to information about student progress.

The most common procedures of formative assessment include the following.

- Feedback. A teacher provides oral or written feedback to student discussion or work. For example, a teacher responds orally to a question asked in class; provides a written comment in a response or reflective journal; or provides feedback on student work.

- Curriculum-based measurement (CBM). This set of standardized measures is used to determine student progress and performance (Deno, 2001). An example is the use of oral reading fluency (the number of words a student can read correctly during a timed reading of a passage) as an indicator of a student's overall reading ability (Fuchs et al., 2001).

- Self-assessment. Students reflect on and monitor their progress. This activity may be performed in conjunction with a CBM, in relation to predetermined academic and behavioral goals, or with learning contracts.

- Observation. A teacher observes and records a student's level of engagement, academic and/or affective behavior; develops a plan of action to support that student; implements the plan; and continues to record observations to determine its effectiveness.

- Portfolios. A growth portfolio can be used to create a record of student growth in a number
PROCEDURES USED IN SUMMATIVE ASSESSMENT

Summative assessment also employs a variety of tools and methods for obtaining information about what has been learned. In this way, summative assessment provides information at the student, classroom, and school levels. Defining characteristics of effective summative assessment include a clear alignment between assessment, curriculum, and instruction, as well as the use of assessments that are both valid and reliable. When objectives are clearly specified and connected to instruction, summative assessment provides information about a student's achievement of specific learning objectives.

Summative assessments (or more accurately, large-scale, standardized assessments) are frequently criticized for a variety of reasons: 1) they provide information too late about a student's performance (Popham, 1999); 2) they are disconnected from actual classroom practice (Shepard, 2001); 3) they suffer from “construct underrepresentation” (Messick, 1989), meaning that one assessment typically cannot represent the full content area, so only those areas that are easily measured will be assessed, and hence, taught; and 4) they have a lack of “consequential validity” (Messick, 1989), meaning that the test results are used in an inappropriate way. This last concern is related to state accountability systems because high stakes, such as student retention or teacher performance pay, are attached to performance on state assessment systems, yet most of these assessments have not been designed for the broad and numerous purposes they serve (Baker & Linn, 2004). Nevertheless, summative assessments can provide critical information about students' overall learning as well as an indication of the quality of classroom instruction, especially when they are accompanied by other sources of information and are used to inform practice rather than to reward or sanction. Examples of summative assessment include the following.

End of unit tests or projects. When assessments reflect the stated learning objectives, a well-designed end of unit test provides teachers with information about individual students (identifying any student who failed to meet objectives), as well as provides an overall indication of classroom instruction.

Course grades. If end of course grades are based on specified criteria, course grades provide information on how well a student has met the overall expectations for a particular course.

Standardized assessments. Tests that accurately reflect state performance and content standards provide an indication of how many students are achieving to established grade-level expectations.

Portfolios. When used as part of an evaluation of student learning, portfolios provide evidence to support attainment of stated learning objectives.

Although formative and summative assessments serve different purposes, they should be used ultimately within an integrated system of assessment, curriculum, and instruction. To be effective in informing the learning process, assessments must be directly integrated with theories about the content, instruction, and the learning process (Herman et al., 2006) and must be valid and reliable for the purposes for which they are used. Summative assessments should be created prior to instruction to capture and identify both the content and process of learning that represent the desired outcomes. In this way, summative assessment can serve as a guide for directing the curriculum and instruction.
Performance on summative assessments must serve as a valid inference of instructional quality. For example, teacher grades generally have strong validity when compared to student performance on other academic measures (Hoge & Colardarci, 1989).

Formative assessments are more informal in nature but must also serve as valid indicators of student performance if they are to be useful in informing the teaching process. Curriculum-based measurement represents a standardized process of formative assessment that relies on the use of valid measures of student progress in a given academic area. Additionally, a strong evidence base supports the use of interactive feedback (Black & William, 1998) to increase student achievement.

HOW OUTCOMES INFORM INSTRUCTION AND EDUCATIONAL PRACTICES

A consistent feature of the research findings on formative assessment is that attention to the interactive nature of formative assessment can lead to significant learning gains (Black & William, 1998; Herman et al., 2006). Reviews of research on formative assessment processes support the use of questioning, observation, and self-assessment. Similarly, research has demonstrated positive effects on student achievement with the use of CBM (Stecker et al., 2005). Frequent monitoring of student progress to a determined goal and performance level results in higher achievement for students, particularly when teachers use the data collected to inform their instructional practices (Stecker et al., 2005).

Formative assessment can be most directly used at the individual student level because it measures how a particular student is progressing in the instructional program and identifies where support may be needed. The focus on individual students provides immediate feedback on their progress within the curriculum. Formative assessment may also be evaluated at the classroom level to inform teaching practices because it reveals how many students may be experiencing difficulty. If several students are having difficulty, then perhaps a more general change in instruction is needed. CBM in particular serves in these dual roles, but other types of formative assessment such as portfolios and journals can be used in a similar way.

Summative assessment informs instructional practices in a different yet equally important way as formative assessment. Critics of large-scale assessments argue that they adversely affect the classroom and remain disconnected from instruction (Shepard, 2001) to the extent that they are not useful in the instructional process. However, summative assessment can serve both as a guide to teaching methods and to improving curriculum to better match the interests and needs of the students. A primary use of assessment data is in planning curricula. For example, if a school’s performance on a state assessment indicates high percentages of students who do not meet standards in writing, then the school could collect more information on its writing curricula, student writing performance (through portfolios or other classroom work), and professional development needs for its teachers. After collecting such information, the school may then review and adopt new writing curricula as well as provide professional development to its teachers in order to support stronger student achievement in writing. Ongoing evaluation of the writing program would be conducted through the use of formative and summative assessment. In this manner, when summative and formative assessments are aligned, they can inform the instructional process and support both the daily instructional practices of teachers as well as the longer-term planning of curricula and instruction.

Assessment entails a collection of procedures that inform the learning process. Formative and summative assessment entail integrated components of the larger process of assessment, instruction, and curriculum. However, an ample research base suggests that practitioners have difficulty implementing formative assessments (Marsh, 2007) and responding to data collected through
summative assessments (Popham, 1999). When formative assessments are used in conjunction with summative assessment, the potential exists to improve outcomes for all students (Stiggins, 2002), both those meeting a minimum performance standard and all other students across the spectrum. Assessments can only serve this purpose, however, when teachers are supported to implement and respond to the procedures through corresponding adjustments in their instruction (Herman et al., 2006; Marsh, 2007).

See also: Criterion-Referenced Tests, Standardized Testing

BIBLIOGRAPHY


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