

What is Formative Evaluation?

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October, 2008

Two general instructional purposes for assessment are discussed in the literature.

Assessment data are either collected for summative or formative evaluations, both of which are important to the instructional process and lead to improved outcomes (Fuchs & Fuchs, 1986; Fuchs, Fuchs, Hamlett, & Allinder, 1991; Fuchs, Fuchs, Hamlett, & Stecker, 1990; Salvia, Ysseldyke, & Bolt, 2007). Curriculum-based measurement (CBM; Deno, 1985) has become somewhat synonymous with formative evaluation (Deno, 2003; Silberglitt & Hintze, 2005), perhaps because formative evaluation is often conceptualized as the collection of data to monitor student progress (Linn & Gronlund, 2000; Salvia et al., 2007) and CBM is definitively equated with progress monitoring (Burns, Dean, & Klar, 2004; Salvia et al., 2007; Shapiro, 2004). However, progress monitoring is only one purpose for which data are used in the instructional process and CBM seems to have somewhat limited utility in identifying specific strengths and difficulties for individual students, which suggests that it provides little data to formatively inform the nature of instructional plans (Fuchs, Fuchs, Hosp, & Hamlett, 2003).

Frequent evidence for progress toward goals and standards only identifies the need for instructional change and does not adequately tap the formative evaluation paradigm because it does not suggest specific items that need to be taught or how to best teach them (Stiggins, 2005). Thus, in order to fully inform instruction, we need both assessment OF student learning and assessment “FOR” learning (Stiggins, 2005, p. 327). To help answer the question “What is

formative evaluation?”), both summative and formative evaluation will be described in more detail and examples of each throughout the instructional process will be provided.

Summative Evaluation.

The terms summative and formative evaluations were used separately in the literature until Bloom, Hastings, and Madaus's (1971) seminal writing on the subject united the two and directly applied them to instruction. Summative evaluation was defined as the collection of data after instruction occurred to make judgments about the instruction such as “grading, certification, evaluation of progress, or research on effectiveness (Bloom et al., 1971, p. 117). Thus, any assessment that examines what a child has learned or did not learn from previous instruction could be conceptualized as part of a summative evaluation. Assessment used for summative purposes could include teacher-made tests, ratings of performance or assessment of products (Linn & Gronlund, 2000).

Summative evaluation samples the entire range of outcomes associated over a long-period and assesses student mastery of those skills (Bloom et al., 1971). Intermediate assessments may occur more frequently (weekly, at the end of a unit of instruction) and generally measures outcomes associated with the most recently taught material. However, summative evaluation broadly samples all objectives and includes a wide range of difficulty (Linn & Gronlund, 2000).

Formative Evaluation

Scriven (1967) coined the term formative evaluation in reference to curriculum development, but Bloom and colleagues' (1971) application to instruction conceptualized it as the “systematic evaluation in the process of curriculum construction, teaching, and learning for the purposes of improving any of these three processes” (p. 117). Scholars have more recently

characterized formative evaluation as data collected before instruction occurs as compared to summative evaluation, which occurs after instruction (Linn & Gronlund, 2000; Salvia et al., 2007). While this temporal definition likely holds true, the essential attribute of formative evaluation is that the data are used to identify student needs and to plan instruction that will better meet those needs (William, 2006). Thus, it is the use of the data that makes the evaluation formative in that collecting data before and/or during instruction only becomes a formative evaluation if the data are used to plan or modify instruction.

Formative evaluation is comprised of two arenas for assessment, the learning unit and student behavior (Bloom et al, 1971). An instruction unit generally comprises more than a single lesson, but is more likely a meaningful division of instructional material through presentation of different topics and/or objectives that are contextualized within a larger scope and sequence. Much of the evaluative activities regarding the unit involve examining what new material or objective is being presented and assuring that it builds on previous learning and prerequisites future instruction. After analyzing what elements of the unit are most important, formative evaluation tools can be developed that focus on them. Of probably greater concern to teachers is the assessment of student behavior as part of the formative evaluation, which involves knowledge of terms and facts, rules and principles for the tasks, processes and procedures necessary for successful completion, and the ability to translate or apply the information (Bloom et al., 1971).

Using Formative Evaluation Data to Inform Instruction

Algozzine and Ysseldyke (1992) presented the phases of effective instruction, which included 1) planning, 2) managing, 3) delivering, and 4) evaluating instruction. It makes intuitive sense that the first three phases would emphasize formative evaluation and the final one would

focus on summative evaluation. However, a temporal definition may not adequately define formative assessment because it matters more how the data are used than when they are collected. Listed in Table 1 are short descriptions of the four phases and how the types of formative evaluation activities accompany each phase.

Table 1

Phases of Effective Instruction Models with Accompanying Formative Evaluation Activities

| Phase | Instructional Focus | Primary Formative Evaluation Activity |
|---------------------------|---|---|
| Planning Instruction | Deciding what and how to teach, and how to best communicate realistic expectations. | Assess student baseline skill before instruction. |
| Managing Instruction | Preparing students and classroom for instruction, using time productively, and establishing a positive classroom environment. | Assess the instructional level for individual children, identify specific skills and/or items that need to be pre-taught or taught, and assess the classroom environment. |
| Delivering Instruction | Providing relevant practice, keeping the students interested and motivated, and providing feedback. | Continuous assessment of mastery of the material during guided and independent practice. Noticing and immediately correcting student errors. |
| Evaluating Instruction | Deciding whether the approaches, methods, and materials used were effective. | Assess student learning and set goals for future instruction. |

Many of the activities listed in Table 1 can be conducted in a group format or are quickly and easily accomplished for individual students. Moreover, the activities listed in the managing and delivering phases can be accomplished through informal assessments, and the data may only be needed for struggling students. True formative evaluation is difficult to accomplish in most K-12 schools (William, 2006), but the adequately yearly progress requirements of the *No Child Left Behind Act* have increased interest in improving student learning and working from a truly formative evaluation paradigm might be the most effective and efficient approach to accomplish this lofty goal.

References

- Algozzine, R., & Ysseldyke, J. (1992). *Strategies and tactics for effective instruction*. Longmont, CO: Sopris West.
- Bloom, B. S., Hastings, J. T., & Madaus, G. F. (1971). *Handbook on formative and summative evaluation of student learning*. New York: McGraw-Hill.
- Burns, M. K., Dean, V. J., & Klar, S. (2004). Using curriculum-based assessment in the responsiveness to intervention diagnostic model for learning disabilities. *Assessment for Effective Intervention, 29* (3), 47-56.
- Deno, S. L. (1985). Curriculum-based measurement: The emerging alternative. *Exceptional Children, 52*, 219-232.
- Deno, S. L. (2003). Curriculum-based measures: Development and perspectives. *Assessment for Effective Intervention, 28* (3-4), 3-12.
- Fuchs, L. S., & Fuchs, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children, 53*, 199-208.
- Fuchs, L. S., Fuchs, D., Hamlett, C. L., & Allinder, R. (1991). The contribution of skills analysis to curriculum-based measurement in spelling. *Exceptional Children, 57*, 443-452.
- Fuchs, L. S., Fuchs, D., Hamlett, C. L., & Stecker, P. M. (1991). Effects of curriculum-based measurement and consultation on teacher planning and student achievement in mathematics operations. *American Educational Research Journal, 28*, 617-641.
- Fuchs, L. S., Fuchs, D., Hosp, M. K., & Hamlett, C. L. (2003). The potential for diagnostic analysis within curriculum-based measurement. *Assessment for Effective Intervention, 28*, (3-4), 13-22.

Linn, R. L., & Grolund, N. E. (2000). *Measurement and assessment in teaching* (8th ed.).

Upper Saddle River, NJ: Merrill/Prentice Hall.

Salvia, J., Ysseldyke, J. E., & Bolt, S. (2007). *Assessment* (10th ed.). Boston: Houghton Mifflin.

Scriven, M. (1967). The methodology of evaluation. In R. W. Tyler, R. M. Gagné, & M. Scriven

(Eds.), *Perspectives of curriculum evaluation*, 39-83. Chicago, IL: Rand McNally.

Shapiro, E. S. (2004). *Academic skill problems: Direct assessment and intervention* (3rd ed.).

New York: Guilford.

Silbergliitt, B., & Hintze, J. (2005). Formative assessment using CBM-R cut scores to track

progress toward success on state-mandated achievement tests: A comparison of methods.

Journal of Psychoeducational Assessment, 23, 304-325.

William, D. (2006). Formative assessment: Getting the focus right. *Educational Assessment*, 11,

283-289.

Ysseldyke, J., & Burns, M. K. (in press). Functional assessment of instructional environments for

the purpose of making data-driven instructional decisions. In C. R. Reynolds & T. B.

Gutkin (Eds.) *Handbook of school psychology* (3rd ed.). New York: Wiley.