The Role of Assessment in Teaching and Learning

Integrating Instruction and Assessment
- Realities of teaching
  - fast paced
  - hectic
  - complex
- Teacher decision making
  - before instruction
  - during instruction
  - after instruction

Factors Influencing
- 21st-century knowledge, skills, and dispositions
- Technology
- Principles of cognitive and sociocultural learning and motivation
- Standards-based education
- High-stakes testing

Types of Assessment
- Preassessment
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- Summative assessment

Classroom Assessment
- Four components
  - purpose
  - measurement
  - interpretation
  - use

Assessment Standards for Teachers

Assessment and Grading Decision Making
- Internal beliefs and values
- External factors

Recent Trends
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- Student involvement with assessment
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Research on Learning, Motivation, and Instruction
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  - meaningful
  - self-regulated
  - active construction
- Thinking skills
- Motivation
  - feedback

ROLE OF ASSESSMENT IN TEACHING

Students' perceptions of assessment
CHAPTER 1

Learning Outcomes

After reading this chapter, you should be able to:

1.1 Understand the nature of classroom assessment, its purposes and characteristics, and how classroom assessment differs from other types of assessment.

1.2 Understand and be able to give examples of how classroom assessment of, for, and as learning can be integrated with instruction.

1.3 Know how different contextual factors, such as high-stakes accountability testing and theories of learning, influence teacher decision making about how classroom assessments are designed and implemented in a specific classroom.

Introductory Case Study

What Should Abby Do?

When John walked into the math teachers’ workroom, Abby was thinking about her upcoming unit on fraction computation and the changes this year she wanted to make in assessing student learning. She wasn’t happy with the end-of-unit summative test that her peers and administration suggested be given to students. Her belief that assessments should help her understand her students’ strengths, misunderstandings, and learning errors simply didn’t merge with the current assessment. The assessment was computerized and contained 30 questions that were multiple-choice, fill-in-the-blank, and technology-enhanced items similar to those on the end-of-year high-stakes test.

Instead, Abby wanted to ask her administration if she could give a constructed-response assessment with fewer items that followed recent assessment trends and learning theories. Her proposed assessment would provide a scenario involving cooking pizzas at the new pizzeria in the neighborhood and allow student choice for which eight of ten teacher-created open-ended problems students wanted to complete. Students would also create and solve two of their own fraction problems. Throughout the fraction unit, students had completed these types of tasks and Abby had provided feedback to students on their progress in mastering the learning targets. Abby knew her assessment would allow students to apply their knowledge within an authentic task. Additionally, by using a rubric for scoring, she could emphasize student effort, which she knew would encourage her students to stay motivated for learning.

Abby explained her idea to John, a teacher with whom she had collaborated in designing most of the math unit’s real-world applicable lessons, and asked John if he wanted to codevelop the assessment and give it to his students. John looked at Abby with questioning eyes. He declined her offer and suggested she stick with the current computerized assessment. Abby bantered with John telling him that she believed the traditional summative assessment was solely for providing students with a grade, that this test didn’t align with their teaching methods, and that the end-of-unit assessment lacked impact on student learning and motivation.

The Role of Assessment in Teaching and Learning

There’s response was that he believed the current assessment provided reliable standardized feedback to teachers and parents on students’ mastery of learning targets. Additionally, teachers could use the efficient computer data analysis to drive immediate remedial efforts. He also believed it was important for students to be exposed to assessments similar to the end-of-year high-stakes test so students would have practice in preparing for it.

To encourage Abby and show his support of her assessment beliefs and values, John suggested that Abby give the computerized summative assessment and instead incorporate her assessment ideas throughout the unit of study.

As you read this chapter, think about what Abby should do. Should she follow John’s advice and give the computerized assessment or ask permission to give her end-of-unit assessment? If she follows John’s advice, how can Abby integrate her assessment beliefs and values throughout the unit?

Allow me to begin with two stories that are directly relevant to the importance of classroom assessment. When my daughter, Ryan, was 11, she was heavily into gymnastics, working out most days of most weeks. During this particular year, the gym where she worked out hired new coaches, both from Russia. Immediately, the review of her work (performance) changed dramatically. What she was once praised for now received detailed, critical feedback (e.g., “No, put your hands in this position, not like this”). When the girls were “tested,” doing their routines, they were judged with higher expectations and only received praise when well deserved. Instead of hearing “good” all the time, they heard “wrong” most of the time. Negative comments, though, were accompanied by suggestions for doing something different and practice that would help them. The gym and training assessment environment changed, and with it, eventually, the level of performance. The acceptance of mistakes and honest feedback changed the “assessment” culture in the gym. The end of the story is a happy one. As a team, they were the best in the state, and Ryan made positive contributions!

Consider as well my son, Jon, who decided to be an art major in college. He gravitated toward ceramics, sold his work as a potter after graduation, then enrolled in a master of fine arts program. His experiences in graduate school impressed me from an assessment perspective. His work was continually and publicly subjected to criticism from both his professors and other students. It was as if this method of instruction, which could be brutally honest, fostered a perspective that what might seem to be “negative” feedback was what was needed to learn. As with my daughter, mistakes and errors were pointed out. They were an integral part of the assessment process and helped him advance in his craft. Another happy ending. Jon is now a ceramics professor!

These stories illustrate how important assessment is for learning, whether in the gym, the studio, or the classroom. It shows how the right kind of assessment, and the manner in which it is integrated with instruction, can have dramatic effects on how much is learned and how well something is performed.
The Bigger Picture Context of Classroom Assessment

OK, so it’s clear that as a teacher you will be responsible for assessing what students in your classroom have learned, essentially gathering evidence of student learning and using that evidence to document and, hopefully, promote student motivation and achievement. But more than that, you instruct, follow a curriculum, and influence students in a multitude of ways. All of these occur in a larger context that has changed considerably in recent years. Essentially, there are a number of powerful influences now that affect everything you do in the classroom, including assessment, and understanding these factors is essential in developing and using effective assessments. That’s because of something I’ll be talking a lot about in this text—alignment. Alignment simply means that things are configured so that they reinforce and support each other. In science, for example, it’s important to have alignment between research questions and methods; in gymnastics, it’s critical to align music to the floor routine.

Teaching, which includes the use of student assessment, is most effective when these powerful contextual forces are aligned with what the teacher is doing in the classroom. For example, when the curriculum and your instruction are aligned with state standards, it’s likely that students will achieve well on state tests. When your teaching and assessment are aligned to what we know about how students learn, achievement and motivation are enhanced. What, then, are these contextual influences? I’ve laid them out in Figure 1.1 to emphasize their impact on classroom assessment.

21st Century-Knowledge, Skills, and Dispositions

You have probably heard much about what students need to know and be able to do to function effectively in life in the 21st century, and what high school graduates need to do to be ready for college and/or careers. From many levels, including national and state government, business, and educational policy wonks, there is an almost endless series of high-profile calls to action for changes in education to meet the new demands of an information-based, interconnected world. We’ll consider these in more detail in the next chapter, but here is a short summary of what is now considered “essential” for students:

- Deep understanding of fundamental concepts of important content areas and disciplines
- Cognitive skills such as problem solving, decision making, critical thinking, and metacognition
- Creativity and innovative thinking
- Effective communication skills
- Effective social skills
- Global understanding and perspectives
- Dispositions such as responsibility, flexibility, self-direction, determination, perseverance, risk taking, and integrity

![Figure 1.1 Significant Factors Influencing Classroom Assessment](image)

Your challenge is to develop and use assessments to foster the development of all of these 21st-century skills, not just to assess the subject you are teaching.

Technology

The prevalence of technology has significant implications for classroom assessment. Not only are we teaching postmillennial digital natives (though careful
meaningful feedback to students and encouraging them to regulate their own learning, teachers encourage students to enhance their sense of self-efficacy and self-confidence, important determinants of motivation (Brookhart, 2008). Meaningful learning is intrinsically motivating because the content has relevance. The implication here is that assessment does not end with scoring and recording the results. Motivation is highly dependent on the nature of the feedback from the assessment. Thus, in keeping with the integration of assessment with instruction, feedback is an essential component of the assessment process.

There have also been significant recent changes in curriculum theory that have clear implications for classroom assessment. Due in part to the standards-based movement, curriculum is now based on the premise that all students can learn, that standards for learning need to be high for all students, and that equal opportunity is essential. Curriculum needs to show students how learning is connected to the world outside school.

The research from cognitive learning and curriculum theories has laid the foundation for significant changes in classroom assessment (Penuel & Shepard, 2016). As we discover more about how students learn and what motivates them, we realize that assessment practices, as well as instructional practices, need to change to keep pace with this research. The list of principles is long and I can’t do them justice here, but in Table 1.1 many of them are listed with implications for assessment. I’ve done this to again emphasize the importance of alignment of assessment with the principles.

Over the past 20 years or so, research on teacher decision making, cognitive learning, student motivation, and other topics has changed what we know about the importance of assessment for effective teaching. For example, one finding is that good teachers continually assess their students relative to learning goals and adjust their instruction on the basis of this information. Another important finding is that assessment of students not only documents what students know and can do but also influences learning. Assessment that enhances learning is as important as assessment that documents learning. As a result of this research, new purposes, methods, and approaches to student assessment have been developed. These changes underscore a new understanding of the important role that assessment plays in instruction and learning.

**Standards-Based Education**

Essentially, we have a “standards-based” educational system in America. Standards-based, using commonly accepted objectives for student learning, is now a ubiquitous buzzword in education, if ever there was one. As we’ll see in detail in Chapter 2, standards frame what students should know and do—they formalize and standardize what gets taught and assessed. Every state has learning standards, with corresponding pacing guides and curriculum at the district level for implementation. While mostly content-driven, standards have become the benchmarks for evaluating students, schools, and very recently, teachers.
TABLE 1.1 Implications for Assessment from Cognitive Learning Theories

<table>
<thead>
<tr>
<th>Theory</th>
<th>Implications for Classroom Assessment</th>
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<tbody>
<tr>
<td>Cognitive Theory</td>
<td>• Use multiple modes of assessment that allow flexibility in how students demonstrate knowledge and understanding.</td>
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<tr>
<td></td>
<td>• Assess current state of knowledge to target instruction and subsequent assessments.</td>
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<tr>
<td></td>
<td>• Use assessments that require application of knowledge.</td>
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<tr>
<td></td>
<td>• Individualize feedback so that it is meaningful for each student.</td>
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| Differentiation        | • Provide choices in how to show mastery/competence.                                                      |
|                        | • Provide sufficient time for all students to demonstrate knowledge.                                     |
|                        | • Provide students opportunities to revise and retest.                                                   |
|                        | • Use multiple modes of assessment.                                                                        |

| Goal Setting           | • Make standards explicit before beginning instruction.                                                     |
|                        | • Give students examples of performance at different levels.                                              |
|                        | • Provide specific feedback that links performance with standards.                                        |
|                        | • Use assessment during instruction.                                                                      |
|                        | • Use student self-assessment.                                                                            |

| Self-Regulation        | • Use performance assessment with actual "real-life" problems and issues.                               |
|                        | • Use student self-assessment.                                                                            |
|                        | • Use assessment during instruction.                                                                      |
|                        | • Limit objectively scored assessments.                                                                  |
|                        | • Provide progress monitoring feedback.                                                                   |

| Self-Efficacy          | • Use "real-life" tasks and examples.                                                                     |
|                        | • Use assessment during instruction.                                                                      |
|                        | • Provide individualized feedback to see the connection between effort and performance.                  |
|                        | • Provide feedback that encourages internal attributions, especially effort.                            |

High-Stakes Testing
Like it or not, it is abundantly clear that externally mandated high-stakes accountability tests have a profound impact on teaching and classroom assessment. For most teachers, there is no escaping this reality. What you do in the classroom will be influenced by both the content and the nature of these tests.

Students, teachers, and administrators have always been held accountable, primarily at a local school or district level, and sometimes at the state level. In the last two decades unprecedented federal and state accountability testing policy initiatives have increased the pressure on schools to show positive test results, as well as to evaluate teachers on the basis of their students’ test scores. High-stakes tests are ones that have important consequences. This is the case for tests that determine whether a student can graduate from high school, when school accreditation is tied to test scores, or when teacher evaluation is determined by how their students perform on tests.

In 2002 the No Child Left Behind (NCLB) Act was passed, with federal-level pressure for demonstrating consistently improving student test scores. The heart of NCLB was to ensure that states had “challenging” content standards and extensive testing of the standards to hold schools accountable. By the 2005–2006 school year, all states tested reading and mathematics annually in grades 3–11 (once in grades 10–12). Science tests were required in 2008–2009. To hold schools accountable with these tests, each state was required to establish a “starting point” target for the percentages of students that need to be classified as “proficient” in 2002. Then, using a concept called adequate yearly progress (AYP), states established increasingly high percentages of students reaching the proficient level at each grade each year. The Race to the Top initiative, launched in 2009, was focused on national standards and testing in major subject areas. The Every Student Succeeds Act (ESSA) was signed in 2015 to address increasingly unworkable and unrealistic prescriptive requirements from earlier legislation. ESSA places much less emphasis on a one-size-fits-all federal process, allowing states more flexibility in testing and standard-setting. For teachers, this means some easing of pressure in one sense but introduces new testing demands that can also be onerous. Regardless, there is little doubt that some kind of federal and/or state pressure will ensure that large-scale accountability tests will have high stakes and negative sanctions for low-achieving schools, resulting in some cases with state takeover of schools. It is also clear that administrators and local boards of education, as well as state-level policy makers, want these measures of student performance to be as strong as possible.

Now the stakes attached to accountability tests are set to even higher. Our profession has entered a new era of teacher evaluation, with student performance on high-stakes and what are called “common” tests (those given every quarter rather than at the end of the year), a primary measure of teacher effectiveness. Can you imagine that your evaluation as a teacher will depend on how well your students do on high-stakes tests? (This has happened in many cities, including Los Angeles and New York, which have seen publicly available rankings of...
data is the emphasis on multiple sources of data, habits of mind (Bocca & Boudett, 2015), data properties, transformation of data, data management, data transformation, and communication (Mandinach, Friedman, & Gummer, 2015). A very important consequence of the emphasis on big data that directly impacts teaching and assessment is a renewed emphasis on understanding and using quantitative analyses related to standardized and other large-scale and common testing. This includes the need to understand with greater depth more technical concepts such as reliability/precision, standard error, pretest-posttest analyses, accurate graphic presentations, validity, and a host of other complex topics that are typically given little space, especially in teacher preparation.

Assessment is typically portrayed as one, relatively small, component of data literacy. Some use the term “assessment literacy” to convey what assessment knowledge and skills are needed by teachers, but the new push on data literacy puts new pressures on teachers’ use of assessment. Since data literacy includes the interpretation of all types of data (including, e.g., classroom climate, attendance records, behavioral, family information, extracurricular activities), you will need to integrate these data into what is needed for assessment. At this point this is uncharted territory, but the train has left the station.

If you are still wondering why these six factors in Figure 1.1 are important, here’s my take on classroom assessment and what I stress throughout this text. Assessment is an integral part of teaching and learning, not something just done after instruction to document student achievement. It happens all the time during teaching, in informal and anecdotal ways, as well as in the form of tests, papers, and projects. The simple fact is that what and how you assess, on a continual basis, will directly influence your teaching and student learning and motivation in the broadest sense, and that process is influenced by these six factors.

Integrating Instruction and Assessment

The Realities of Teaching

Classroom life is fast paced, hectic, and complex. To illustrate this reality, I summarize here some of what Michelle Barrow does during a typical day in her first-grade classroom. She has 10 boys and 11 girls in her class, four of whom are from racial minority groups and six of whom are from single-parent families. As many as four of her students will participate in the gifted/talented program, and four students were retained from the previous year. See how easy it is for you to get through this list of disparate tasks.

Before school begins in the morning, Michelle:

- Reviews what was learned/taught the previous day
- Goes over student papers to see who did or did not grasp concepts
- Prepares a rough agenda for the day
- Speaks with aide about plans for the day
- Puts journals on student desks
As soon as students enter the classroom, Michelle:

- Greets students at the door
- Reminds students to put away homework
- Speaks with Brent about his expected behavior for the day
- Reminds Anthony about what he is to do if he becomes bothered or frustrated by others

During the morning, Michelle:

- Calls students to the table to go over the reading assignment
- Has Dawn read a column of words and then goes back and randomly points to words to see whether Dawn knows them or simply has them memorized
- Comments to Lucy that she has really improved since the first day of school
- Discusses with Kevin the importance of doing homework every night
- Listens as Tim attempts to sound out each word and gradually blends them together
- Reminds Maggie that she is to be working in her journal rather than visiting and talking with others
- Gives Jason, Kory, and Kristen a vocabulary sheet to do because they have completed their journals
- Observes students in learning centers before calling reading groups to tables
- Verbally reinforces correct answers, gives each student a copy of the week’s story, goes through the book, and points out action words
- Calls up the low reading group and focuses on letters m and f
- Notices that Kevin has poor fine-motor skills and makes a mental note to send a message to his parents telling them that he should practice his handwriting
- Checks on Anthony to see how many centers he has completed
- Notices that students in the writing center are not doing as they were instructed
- Walks beside Anthony down the hall, verbally praising him for following directions
- Notices that Sarah has some difficulty answering higher-level thinking questions
- Makes a mental note to split gifted group up into two smaller groups

After lunch, Michelle’s day continues as she:

- Starts math lesson on beginning addition with hippo counter
- Walks behind Scott and gives the next problem to the class
- Punches cards of students who have followed directions
- Notices that another table immediately stops talking and starts paying attention
- Tells students to rewrite sloppy copies

- Reminds Kevin and Brent to use guidelines on the paper
- Praises and gives punches on cards to Sarah and a few other students for good handwriting and concentration
- Notices that Tim is watching others, asks him if he needs help
- Gives 5-minute warning for music time, notices students working more intensely
- While students are in music, looks over their writing, arranges the papers into groups

After students leave for the day, Michelle continues by:

- Grading student papers
- Making sure materials are ready for the next day
- Making notes in her gradebook about notes sent home and how the day went
- Checking portfolios to see progress
- Calling some parents

And so it goes for most classrooms. There is a hectic immediacy while multi-tasking. Many decisions are made continuously about students, instruction, and assessment. What is represented here is just a small sample of Michelle’s actions, all of which are based on decisions that in turn depend on how well she has assessed her students. How did she decide to discuss with Kevin the importance of homework? What evidence did she use to decide that she needed to check Dawn’s reading? In each of these cases, Michelle had to conduct some kind of assessment of the student before making her decisions. The role of an effective teacher is to reach these decisions reflectively, based on evidence gathered through assessment, reasoning, and experience.

Each decision is based on information that Michelle has gathered through a multitude of student interactions and behavior. Research indicates that a teacher may have as many as 1,000 or even 1,500 interactions with students each day (Billups & Rauth, 1987; Jackson, 1990). Often these interactions and decisions occur with incomplete or inaccurate information, making the job of teaching even more difficult.

Consider how the following aspects of Michelle’s and other teachers’ classrooms affect decision making (Doyle, 1986).

1. **Multidimensionality:** Teachers’ choices are rarely simple. Many different tasks and events occur continuously, and students with different preferences and abilities must receive limited resources for different objectives. Waiting for one student to answer a question may negatively influence the motivation of another student. How can the teacher best assess these multiple demands and student responses to make appropriate decisions?

2. **Simultaneity:** Many things happen at once in classrooms. Good teachers monitor several activities at the same time. What does the teacher look for
and listen for so that the monitoring and responses to students are appropriate?

3. **Immediacy**: Because the pace of classrooms is rapid, there is little time for reflection. Decisions are made quickly. What should teachers focus on so that these quick decisions are the right ones that will help students learn?

4. **Unpredictability**: Classroom events often take unexpected turns, and distractions are frequent. How do teachers evaluate and respond to these unexpected events?

5. **History**: After a few weeks, routines and norms are established for behavior. What expectations for assessment does the teacher communicate to students?

It is in these complex environments that teachers must make some of their most important decisions—about what and how much students have learned. Accurate and appropriate student assessment provides the information to help teachers make better decisions. In the classroom context, then, **classroom assessment** is gathering, interpreting, and using evidence of student learning to support teacher decision making in a variety of ways:

- Diagnosing student strengths, weaknesses, misunderstandings, and learning errors
- Monitoring student effort and progress toward proficiency
- Documenting student learning
- Improving student learning, motivation, and 21st-century skills and dispositions
- Assigning grades
- Providing feedback to parents
- Improving instruction

Assessment is an umbrella concept that encompasses different techniques, strategies, and uses. It is much more than simply “testing.”

**Instructional Decision Making and Assessment**

It is helpful to conceptualize teacher decision making by **when** decisions are made—before, during, or after instruction—and then examine how assessment affects choices at each time. Preinstructional decisions are needed to set learning goals, select appropriate teaching activities, and prepare learning materials. As instructional activities are implemented, decisions are made about the delivery and pace in presenting information, keeping the students’ attention, controlling students’ behavior, and making adjustments in lesson plans. At the end of instruction, teachers evaluate student learning, instructional activities, and themselves to know what to teach next, to grade students, and to improve instruction.

Thinking about teaching as phases that occur before, during, and after instruction is aligned with three major types of classroom assessments—**preassessment**, **embedded formative assessment**, and **summative assessment**. **Preassessment** is what you will do before instruction to ascertain students’ knowledge, attitudes, and interests. This information is then used as a starting point for designing instruction (Chapman & King, 2009). For example, a government teacher who wants to begin a unit on the 2009 recession might want to know how well students are prepared by examining scores on a previous test that demonstrate their knowledge of supply and demand. If students show weak understanding, these concepts need to be reviewed. **Embedded formative assessment** occurs during teaching. It is a way of assessing students’ progress, providing feedback, and making decisions about further instructional activities. (You’ve probably heard about formative assessment; it’s everywhere in the literature, but you may not have heard about embedded formative assessment. As we will see in later chapters, there is an important distinction.) **Summative assessment** is conducted after instruction, primarily as a way to document what students know, understand, and can do, but also as providing information that can be used to provide feedback and guide subsequent teaching and learning.

Table 1.2 presents examples of the types of questions teachers ask themselves at these different points in the instructional process. Table 1.2 also offers examples of the type of assessment information needed to make these decisions.

Figure 1.2 illustrates further how assessment is involved in each stage of the instructional process. This figure shows how preassessment is used to provide information to transform general learning goals and objectives into specific learning targets. You will usually be provided with general state, district, or school learning standards for a particular grade level or subject. These standards are used as a starting point to develop more specific learning targets that take into account the characteristics and needs of the students and your style and beliefs.

The next step in instructional decision making is to specify the evidence that is needed to evaluate student learning. This evidence is identified up front, before determining instructional plans, because it should influence the nature of instruction. This approach to planning is known as “backward design” (McTighe & Wiggins, 2004; Wiggins, 1998; Wiggins & McTighe, 2005; Wiggins & McTighe, 2011). It is called “backward” because conventional instructional planning typically considers assessment an activity that is done after instruction. But it is very helpful to think like an assessor before planning learning activities. This helps accomplish a true integration of assessment and instruction.

Once acceptable evidence is identified, the teacher selects instructional strategies and activities to meet the targets. This is often operationalized as a lesson plan or instructional plan. It consists of what teachers will do and what they will have their students do for a specific period of time. During instruction, there is interaction between the teacher and students that constantly involves making assessments about how to respond to students appropriately and keep them on
### TABLE 1.2 Examples of Questions for Decision Making and Assessment Information

<table>
<thead>
<tr>
<th>When Decisions Are Made</th>
<th>Questions</th>
<th>Assessment Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preassessment Before Instruction</td>
<td>How much do my students know?</td>
<td>Previous student achievement; test scores; observations of student performance</td>
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<tr>
<td></td>
<td>Are my students motivated to learn?</td>
<td>Observations of student involvement and willingness to ask questions</td>
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<td></td>
<td>Are there any exceptional students?</td>
<td>Student records; conference with a special education teacher</td>
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<td></td>
<td>If so, what should I plan for them?</td>
<td>Overall strengths and needs of students; comments from previous teachers; evaluations of previous teaching</td>
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<tr>
<td></td>
<td>What instructional activities should I plan? Are these activities realistic for these students?</td>
<td>Student progress and level of understanding</td>
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<tr>
<td></td>
<td>What homework assignments should I prepare?</td>
<td>Determine which assessment methods will provide needed evidence</td>
</tr>
<tr>
<td></td>
<td>What is acceptable evidence that students have attained desired proficiencies?</td>
<td></td>
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<tr>
<td>Embedded Formative Assessment During Instruction</td>
<td>What type of feedback should I give to students?</td>
<td>Quality of student work; type of student</td>
</tr>
<tr>
<td></td>
<td>What question should I ask?</td>
<td>Observation of student understanding</td>
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<tr>
<td></td>
<td>How should a student response to a question be answered?</td>
<td>Potential for this student to know the answer</td>
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<td></td>
<td>Which students need my individual attention?</td>
<td>Performance on homework; observations of work in class</td>
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<td></td>
<td>What response is best to student inattention or disruption?</td>
<td>Effect of the student on others</td>
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<tr>
<td></td>
<td>When should I stop this lecture?</td>
<td>Observation of student attention</td>
</tr>
<tr>
<td>Summative Assessment After Instruction</td>
<td>How well have my students mastered the material?</td>
<td>Achievement test results in relation to a specified level</td>
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<tr>
<td></td>
<td>Are students ready for the next unit?</td>
<td>Analysis of demonstrated knowledge</td>
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<tr>
<td></td>
<td>What grades should the students receive?</td>
<td>Tests; quizzes; homework; class participation</td>
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<tr>
<td></td>
<td>What comments should I make to parents?</td>
<td>Improvement; observations of behavior</td>
</tr>
<tr>
<td></td>
<td>How should I change my instruction?</td>
<td>Diagnosis of demonstrated learning; student evaluations</td>
</tr>
</tbody>
</table>

**FIGURE 1.2 Relationship Between Instruction and Assessment**

In the context of instruction, embedded formative assessment information is used to monitor learning, check for progress, diagnose learning problems, and apply instructional adjustments. After instruction, more formal summative assessment of learning targets is conducted, which loops back to inform subsequent learning targets, instructional plans, and interactive instruction. Assessment at the end of an instructional unit also provides information for grading students, evaluating teaching, and evaluating curriculum and school programs.

The point is that assessment is not only an add-on activity that occurs after instruction is completed. Rather, assessment is integrally related to all aspects of teacher decision making and instruction. Michelle Barrow did assessment before instruction by reviewing the performance of students on the previous day's work to see who did and who did not grasp the concepts. She used this information to plan subsequent instruction. During instruction Michelle constantly observed student work and responded to provide appropriate feedback and to keep students on task. After instruction she graded papers, checked student progress, and made decisions about the focus of instruction for the next day.

With this introduction, we will now consider in more detail what is meant by such terms as test and assessment and how current conceptualizations enhance older definitions of measurement and evaluation to improve teaching and learning.

### Components of Classroom Assessment

Classroom assessment is a multifaceted process that includes the collection, interpretation, and use of information to help teachers make decisions that both document and improve student learning. Conceptualized in this way, assessment is more than testing or measurement, which are familiar terms that have been used extensively in discussing how students are evaluated.
There are four essential components to implementing classroom assessment: purpose, measurement, interpretation, and use. These components are illustrated in Figure 1.3, with questions to ask yourself at each step. The figure shows the sequence of the components, beginning with identification of purpose.

**Purpose**

Whether done before, during, or after instruction, the first step in any assessment is to clarify the specific purpose or purposes of gathering the information. A clear vision is needed of what the assessment will accomplish. Why are you doing the assessment? What will be gained by it? What teacher decision making is enhanced by the information gathered through the assessment process?

There are many reasons for doing classroom assessments, some of which are traditional (such as the first four listed next [Popham, 2014]), and others that have become important with changes in learning and motivation theory, curriculum alignment, and the current context of high-stakes testing:

- To diagnose students’ strengths and weaknesses
- To monitor student progress toward achieving objectives
- To assign grades
- To determine instructional effectiveness
- To provide students feedback
- To prepare students for high-stakes tests
- To motivate students

Knowing the reason for the assessment is crucial because this will determine what the assessment should look like, how it is administered and scored, and how the results will be used.

**Measurement**

The term measurement has traditionally been defined as a systematic process of assigning numbers to behavior or performance. It is used to determine how much of a trait, attribute, or characteristic an individual possesses. Thus, measurement is the process by which traits, characteristics, or behavior are differentiated. The process of differentiation can be very formal and quantitative, such as using a thermometer to measure temperature, or can consist of less formal processes, such as observation (“It’s very hot today!”). Typically, measurement is used to assign numbers to describe attributes or characteristics of a person, object, or event. A variety of techniques can be used to measure a defined trait or learning target, such as tests, ratings, observations, and interviews. Among these many methods, the one that stands out is classroom assessment; it’s the most powerful type of measurement that influences learning and motivation.

**Interpretation**

Once measurement is used to gather information, you will need to place some value of value on different numbers and observations. This process is identified in Figure 1.3 as interpretation, the making of judgments about quality that determine how good the behavior or performance is. Interpretation involves an evaluation of what has been gathered through measurement, in which value judgments are made about performance. For example, measurement often results in a percentage of items answered correctly. Evaluation is a judgment about what each percentage-correct score means. That is, is 75% correct good, average, or poor? Does 75% indicate “proficiency”?

Teachers’ professional judgments play a large role in interpretation. What is a “good” student paper to one teacher may be only an “adequate” paper to another teacher. Assessment is more than correctness; it is also about evaluation.

**Use**

The final stage of implementing assessment is how the evaluations are used. The use of test scores and other information is closely tied to the decisions teachers must make to provide effective instruction, to the purposes of assessment, and to the needs of students and parents. As indicated in Figure 1.2, these decisions depend on when they are made; they can also be categorized into three major classroom uses: diagnosis, grading, and instruction.

**Diagnosis.** Diagnostic decisions are made about individual students as well as about group strengths, weaknesses, and needs. Typically, information is gathered that will allow the teacher to diagnose the specific area that needs further attention or where progress is being made. The diagnosis includes an assessment of why a student may be having difficulty so that appropriate instructional activities can be prescribed. For example, teachers use homework diagnostically to determine the extent of student understanding and to identify students who do not understand the assignment. A pretest may be used to diagnose specific gaps in student knowledge that need to be targeted. Students are closely monitored to check motivation, understanding, and progress.
Grading. Grading decisions are based on measurement-driven information. Although most teachers must adhere to grading scales and definitions, there is a great amount of variability in what teachers use to determine grades, how they use the process of grading to motivate students, and the standards they use to judge the quality of student work. Some teachers, for example, use grading to control behavior and motivate (e.g., “This assignment will be graded”), and often teachers use completed work as a basis for giving privileges and otherwise rewarding students (e.g., “good” papers are posted). Grades and associated oral and written comments also provide feedback to students and parents.

Instruction. Teachers constantly make instructional decisions, and good teachers are aware that they must continuously assess how students are doing to adjust their instruction appropriately. One type of decision, termed a process instructional decision, is made almost instantaneously, such as deciding to end a lecture or ask a different type of question. Planning instructional decisions are made with more reflection; they might include changing student seating arrangement or grouping patterns, spending an extra day on a particular topic, or preparing additional worksheets for homework. It is hoped that teachers will use credible measurement information with clear standards to evaluate student behavior accurately.

Finally, assessment processes can be used as instruction. For example, performance and authentic assessments are long term and provide opportunities for student learning. As we will see in later chapters, such assessments are useful as teaching tools as well as methods to document student learning. As such, they educate and improve student performance, not merely audit it (Wiggins, 1998).

Recent Trends in Classroom Assessment

In the past decade, some clear trends have emerged in classroom assessment for better alignment with the need to focus on 21st-century knowledge, skills, and dispositions, and year-end accountability testing. More established traditions of assessment that rely on “objective” testing at the end of instruction, promoted heavily as preparation for similarly formatted high-stakes tests, are being supplemented with other assessments that are better for measuring important outcomes. These have been called “alternative” assessments. Alternative assessments include authentic assessment, performance assessment, portfolios, exhibitions, demonstrations, journals, technology-enhanced items, simulations, and other forms of assessment that require the active construction of meaning rather than the passive regurgitation of isolated facts. These assessments engage students in learning and require thinking skills, and thus they are consistent with cognitive theories of learning and motivation as well as societal needs to prepare students for an increasingly complex workplace. In addition, teachers are starting to use more extended-type and interpretive-type objective items. Finally, as I have already emphasized, formative assessment is quite the rage.

Another trend is the recognition that knowledge and skills should not be assessed in isolation. Rather, it is necessary to assess the application and the use of knowledge and skills together. More emphasis is now placed on assessing thinking skills and collaborative skills that are needed to work cooperatively with others. Newer forms of assessment provide opportunities for many “correct” answers, rather than a single right answer, and rely on multiple sources of information.

At the same time that assessment is embracing new kinds of assessment that are based on solid theories of learning and motivation, and as previously mentioned, what and how teachers assess in the classroom is now influenced significantly by year-end, high-stakes accountability testing. We’ll discuss this much more, but suffice it to say now that there is a trend toward for classroom tests and other assessments to mimic accountability tests.

An intriguing and very recent trend is to involve students in all aspects of assessment, from designing tasks and questions to evaluating their own and others’ work. Engaging students in developing assessment exercises, creating scoring criteria, applying criteria to student products, and self-assessment all help students understand how their own performance is evaluated. This understanding, in turn, facilitates student motivation and achievement. Students learn to confidently evaluate their performance as well as the performance of other students. For example, if students are taught to internalize the key elements of what should be included in comprehending a short story, they are better able to monitor their progress toward achieving learning targets. Likewise, when students generate lists of the ways good essay answers differ from weak ones, they learn the criteria that determine high student performance. Thus, there is a change of emphasis from the teacher providing all assessment tasks and feedback to promoting student engagement in the assessment process. This is best accomplished when there is “a continuous flow of information about student achievement . . . to advance, not merely check on, student learning” (Stiggins, 2002, p. 761). That is, assessment for learning becomes as important as assessment of learning.

The distinction between assessment of learning and assessment for learning is critical for understanding the influences of recent theories of learning and motivation on the one hand (for learning), and external accountability testing on the other (of learning). These differences are summarized in Table 1.3. Note, too, that assessment as learning is also important.

In the first of many Teacher’s Corner inserts, Susan Pereira makes a strong case for the integration of assessment with instruction. Note how she uses assessment to know “where” students are in their learning so that she can decide what subsequent instruction will be most effective.

These and other recent trends in classroom assessment are summarized in Figure 1.4. In presenting these trends, I do not want to suggest that what teachers have been doing for years is inappropriate or should necessarily be changed. Much of what we have learned about evaluating students from previous decades
### TABLE 1.3 Characteristics of Assessment of Learning, for Learning, and as Learning

<table>
<thead>
<tr>
<th>Assessment of Learning</th>
<th>Assessment for Learning</th>
<th>Assessment as Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative</td>
<td>Formative</td>
<td>Nature of assessment engages students in learning</td>
</tr>
<tr>
<td>Certify learning</td>
<td>Describes needs for subsequent learning</td>
<td>Fosters student self-monitoring of learning</td>
</tr>
<tr>
<td>Conducted at the end of a unit</td>
<td>Conducted during a unit of instruction; ongoing</td>
<td>Conducted during a unit of instruction</td>
</tr>
<tr>
<td>Sporadic</td>
<td>Tasks allow teachers to modify instruction</td>
<td>Emphasizes student knowledge of criteria used to evaluate learning</td>
</tr>
<tr>
<td>Often uses normative scoring</td>
<td>Suggests corrective instruction</td>
<td>Student selects corrective instruction</td>
</tr>
<tr>
<td>guidelines; ranks students</td>
<td>Specific</td>
<td>Specific</td>
</tr>
<tr>
<td>Questions drawn from</td>
<td>Specific</td>
<td>Fosters student self-monitoring</td>
</tr>
<tr>
<td>material studied</td>
<td>Used to give feedback to students</td>
<td>Enhances student motivation</td>
</tr>
<tr>
<td>General</td>
<td>In-depth testing</td>
<td>Testing teaches students</td>
</tr>
<tr>
<td>Used to report to parents</td>
<td>Focus on validity</td>
<td>Focus on validity</td>
</tr>
<tr>
<td>Can decrease student</td>
<td>Enhances student motivation</td>
<td>Immediate feedback</td>
</tr>
<tr>
<td>motivation</td>
<td>In-depth testing</td>
<td>Diagnostic</td>
</tr>
<tr>
<td>Highly efficient, superficial</td>
<td>Focus on validity</td>
<td></td>
</tr>
<tr>
<td>testing</td>
<td>Immediate feedback</td>
<td></td>
</tr>
<tr>
<td>Delayed feedback</td>
<td>Diagnostic</td>
<td></td>
</tr>
<tr>
<td>Summary judgments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


is very important and useful. For example, properly constructed multiple-choice tests are excellent for efficiently and objectively assessing knowledge of a large content domain. What is needed is a balanced approach to assessment, in which appropriate techniques are administered and used in a credible way for decision making. Just because the assessment focuses on complex thinking skills or uses portfolios does not mean it is better or more credible. Assessment technique need be matched to purpose and must be conducted according to established quality standards, and must be relevant to your teaching style and context. Some of the recent trends, such as making standards and criteria public, are helpful procedures regardless of the assessment employed, and they will improve traditional as well as newer types of measurement by engaging students in the entire assessment process.

### FIGURE 1.4 Recent Trends in Classroom Assessment

- From
  - General praise
  - Assessing outcomes
  - Isolated skills
  - Isolated facts
  - Artificial tasks
  - Decontextualized tasks
  - A single correct answer
  - Secret standards
  - Secret criteria
  - Individuals
  - After instruction
  - Little feedback
  - “Objective” tests
  - Standardized tests
  - External evaluation
  - Single assessments
  - Sporadic
  - Conclusive
  - Assessment of learning
  - Summative
  - Emphasis on ability
  - Learning successes
  - Recall of facts

- To
  - Specific feedback
  - Assessing process and metacognition
  - Integrated skills
  - Application of knowledge
  - Authentic tasks
  - Contextualized tasks
  - Many correct answers
  - Public standards
  - Public criteria
  - Groups and peer assessments
  - During instruction
  - Considerable feedback
  - Performance-based tests
  - Informal tests
  - Student self-evaluation
  - Multiple assessments
  - Continual
  - Recursive
  - Assessment for and as learning
  - Formative
  - Emphasis on effort
  - Learning errors
  - Thinking skills

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**Teachers’ Classroom Assessment and Grading Practices Decision Making**

Every teacher makes many decisions about the types of assessments that will be used, when these assessments are used, and grading. These decisions result in highly individualized and idiosyncratic practices. Despite policies and electronic grading programs that attempt to standardize assessment practices, each teacher does his or her own thing. This suggests that you, too, will develop your own assessment and grading practices.

To better understand the decision-making process teachers use, I participated in a study in which in-depth, individual interviews were conducted with...
Teacher's Corner
Susan Pereira
National Board Certified Elementary Teacher

In my classroom, instruction and assessment are always integrated. In fact, it's difficult for me to even think about them as separate entities. Assessment happens prior to any teaching, during teaching, and after teaching. Before the learning, sometimes this is done formally through standardized testing. Other times, it occurs informally in discussions with my students. Through both informal and formal assessments, I gather a "picture" of their previous learning and where they currently are in the learning process. After this initial data is gathered, I can analyze the group as a whole and organize the students into learning groups according to where they are in their learning. I can also use the data I have gathered to sit down and plan appropriate, engaging lessons for each small group of students. During the actual teaching, more assessment occurs. This assessment can look different—it may be a pencil-and-paper task, or it may be information gathered through questioning my students, watching their body language, noticing how often they volunteer to answer questions, and how they communicate their learning to me and to others. Quality assessment during the teaching guides me in how long I need to spend on a topic, when I need to reteach, and when students need enrichment activities. My ongoing assessments drive the lesson, not me as the teacher.

28 teachers to investigate the reasons teachers gave for the assessment decisions they made (McMillan, 2003; McMillan & Workman, 1999). The results have interesting implications because of the strong connection between this decision-making process and instruction.

We found that two major sources of influence affect assessment and grading practices decision making. One source lies within the teacher and consists of beliefs and values about teaching, and learning more generally, that provide a basis for explaining how and why specific assessment and grading practices are used. A second source lies external to the teacher, consisting of pressures that need to be considered, such as high-stakes testing. We found that these two sources of influence are in constant tension. Although internal beliefs and values that reflect a desire to enhance student learning are most influential, external pressures cause teachers to engage in certain practices that may not be in the best interests of student learning.

These influences are depicted in Figure 1.5 to show the nature of the internal and external factors and how these factors are in tension. Internal beliefs and values include a philosophy of teaching and learning, and assessment practices are consistent with that philosophy (Bonner, 2016). For example, if teachers believe that all students can succeed and that individual differences among students should be accommodated, then the teacher uses multiple types of assessment to allow sufficient opportunities to show success. If teachers believe it is important to get students involved, engaged, and motivated, they may use performance assessments and give points for student participation and effort. To better understand how much students know and can do, most teachers rely on assessments in which students show their work.

External pressures include school or school district assessment and grading policies that must be followed; parental demands; large-scale, high-stakes testing; and 21st-century skills and dispositions. Teachers want to collect assessment information that will show parents why specific grades were given. Externally mandated accountability testing of students can be very influential, as well as in direct contradiction to teachers' internal beliefs and values. For example, if statewide testing consists of multiple-choice items covering a great amount of material, and student performance will have important consequences, teachers feel pressure to use the same kinds of tests for classroom...
assessments. This may be in direct conflict with wanting to use performance assessments that are more engaging and informative about what students really understand. Often a balance is needed in considering what external pressures suggest should be done and what you believe is in the best interests of your students.

Think about the model in Figure 1.5 in relation to your own beliefs and values and in relation to external pressures you may need to consider. Your decision making should consider these sources of influence so that the assessment and grading practices you implement reflect the relative importance of each. The most important question is this: To what extent are your assessment and grading practices consistent with principles of good instruction and theories of learning and motivation, and to what extent will the right kinds of student learning and motivation be enhanced?

**Students’ Perceptions of Assessment**

A new, exciting area of research on classroom assessment is investigating what students’ perceptions are about tests and other assignments, and how these perceptions impact the level of effort exerted, performance, meaningfulness of feedback, and emotional reactions to doing well or poorly, to getting right and wrong answers. Long neglected, we are now beginning to realize that assessment has meaning to students, and their interpretations, anticipations, and emotions are important.

In a recent review of the literature of students’ perceptions toward assessment (McMillan, 2016), it was clear that there are both trait and state characteristics that students bring to each assessment event. A trait characteristic is a relatively stable emotion, motivational disposition, or other personality dimension that lies within each student. Some students, for example, have a stronger self-efficacy than others or may have a greater mastery goal orientation. Some students see assessments as challenges, others are fearful. States are established more on the basis of what an assessment event looks like. These vary from situation to situation, as well as with different subjects. That is, some assessments are long, some are short; some contain mostly multiple-choice questions, others are mostly essay; some assessments are easy, some are hard. Students know pretty quickly whether assessments are for accountability or for helping them learn.

These traits and states affect motivation, effort, anxiety, and expectations. Obviously, for example, most students are more worried if they view the assessment as extremely difficult or something that they have had problems with in the past. They are more confident and focused when they bring a strong sense of capability, when they have exerted appropriate effort to succeed, and when they have done well in the past on similar tests.

Following an assessment event students display a wide range of emotions and thinking, and these reactions feed into subsequent actions and the development of motivational dispositions. After a generally positive outcome there may be a sense of pride, relief, and happiness, or when wrong, there may be a sense of hopelessness, confusion, or puzzlement. Attributions to success or failure are made typically either to effort, ability, or some outside factor, such as poor health or unfair test items. When students attribute success to effort and failure to lack of effort (internal attributions), the outcome is generally positive; when attributions are more external, the consequence is a lack of responsibility, often with negative implications for motivation.

A particular interest of mine is how students think about and deal with being wrong (McMillan, forthcoming). While it is no secret that students are often told that being wrong is helpful for learning, the reality in most schools is that being right trumps being wrong every time. The rewards are for getting high scores, “mastery,” and correctness, not for making mistakes or learning errors. This has led to a culture where the norm is that being wrong is somehow undesirable, bad, or negative, and should be avoided. Rather than seeing “wrongness” as a vehicle for learning, students learn to fear it. What is unfortunate is that there is a significant amount of research from several fields confirming that being wrong leads to more effective learning, as well as to the positive development of self-regulatory skills, persistence, and resilience. Dweck (2008) suggests that the development of persistence depends on being wrong and attributing the lack of complete success to one’s effort, having what she terms a growth mindset. Dweck has demonstrated that children praised for their ability to do well made them less likely to persist when facing difficulties or challenges, while children praised for effort showed greater persistence, even though mistakes were being made.

In some interviews I did with elementary and middle school students (McMillan & Turner, 2014), there was a clear difference between making “careless mistakes” and “not understanding.” When talking about careless mistakes students generally attributed their careless mistakes to what they thought of as “accidents,” like forgetting to check over their work or circling the wrong answer when they knew the correct one. They took responsibility for their actions, but they clearly did not dwell on them (e.g., “like I misunderstood the question, like it said NOT and I didn’t see, and I put the wrong answer,” “sometimes it just slips out of your mind”). The consequences of making careless errors entailed actions such as double-checking, their work before submitting it or managing their time better during the assessment. Their cognition, in other words, was about reminding themselves to be more careful. Emotionally, students voiced that they experienced brief negative affect, such as disappointment or frustration (e.g., “ugh,” “damn,” “rats”), though this quickly subsided because they understood that, as one student said, “everyone makes mistakes.”

Some further comments related to careless mistakes include the following:

- “I don’t feel bad. I feel disappointed in myself but I mean, usually if it’s like a silly mistake, I mean, yeah, I don’t feel bad.”
- “Sometimes I get a little aggravated with myself, especially if I already had the right question, I mean, the right answer, and then I’m like I don’t know and change it, I get kind of mad.”
When students were asked how they felt when they realized they did not know the content or were unable to perform the skill, the affective response was negative though muted, more serious than when making careless errors. They may have been "disappointed," "not happy," or "frustrated," "upset," or "kind of mad," but more severe emotions such as shame, despondency, and hopelessness were rarely mentioned. Rather, perceptions were not overly negative (e.g., "It's okay, just try harder next time," "I would be a little disappointed"). As would be expected, the level of negative emotion was tied to the resultant grade, for example, "When I answer them wrong, it all depends on how many I get wrong. If I get one wrong, I'm just going to be like a little disappointed because I got a good grade, but if I get a lot wrong, then I'm going to be really disappointed because I got a really bad grade." Notably, with the students we interviewed, there were healthy perspectives about being wrong:

- "If I have a bad grade, I feel like I didn't try hard enough or I didn't study hard enough."
- "It just means I didn't study long or hard enough."
- "I feel like when you pay attention in class, that's when you really know what you're doing."
- "It shows me that I didn't study enough."
- "I should have listened better, or you know I should have not talked."
- "It means you have to try harder."
- "Once I get it back and I know I've studied and I see that I got it wrong... I know that I need to study that more."
- "Any lower than that, I'm just like what did I do wrong?"
- "I just know that I need to study that more."
- "Well, if I don't get that god of a grade, that means that I didn't do the best I could in studying and I didn't really study that hard."

These student reactions, generally positive, show the importance of the reactions. To the contrary, one student voiced when he didn't do well, "It means that I'm a loser and that I didn't know." It is easy to see the implications. The question for you as a teacher is how to structure your assessment environment and process to enable and encourage positive outcomes, not negative ones. From the research on student perceptions, as summarized in Table 1.4, there are several implications for positive practice. One thing is for sure, students take assessment very seriously, trust the results, and hope to do well. My hope is that you are as serious about assessment as they are.

**TABLE 1.4 Implications from Research on Students' Perceptions of Assessment**

<table>
<thead>
<tr>
<th>Implications for Practice</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider students' varied perceptions toward assessment.</td>
<td>When teachers know the full range of their students' perceptions of assessment, essentially emphasizing with students, they will be better able to align instruction, assessment, and feedback. Attention needs to be paid to reactions at each phase of assessment (before, during, and after), focusing on students as needed to facilitate positive reactions and consequences.</td>
</tr>
<tr>
<td>Take time to understand students' trait characteristics.</td>
<td>Knowing students' general dispositions enables teachers to directly address misconceptions about ability, dysfunctional levels of anxiety, and unrealistic expectations.</td>
</tr>
<tr>
<td>Stress assessment relevance and value.</td>
<td>Students can tell the difference between assessments that are relevant from those that aren't, those that have value and those that are meaningless, and they react much more positively when they believe the assessment is to help them learn. Being wrong needs to be addressed so that students see it as a way to enhance learning.</td>
</tr>
<tr>
<td>Use a variety of moderately challenging, untimed, relatively short assessments.</td>
<td>Moderately challenging assessments tend to produce good motivation and effort. Assessments that are either too easy or too hard result in lack of effort, hopelessness, or anxiety. Long, timed assessments lead to anxiety, fear, and other negative emotions.</td>
</tr>
<tr>
<td>Involve students in assessment.</td>
<td>When students believe they are partners in assessment, they are much more positive and serious about being engaged. As students identify targets, evaluate their performance, and determine next steps, self-regulation is enhanced.</td>
</tr>
<tr>
<td>Focus attention on effort and test preparation.</td>
<td>The right level of preparation effort is essential for making appropriate attributions.</td>
</tr>
</tbody>
</table>

**Classroom Assessment Knowledge and Skills for Teachers**

One of the perplexing, long-standing trends about classroom assessment is that most teachers receive very little training in it (Campbell, 2012). There have been several attempts to come up with standards for what teachers should know about assessment but, by and large, these haven't been adopted as professional standards in either teacher training programs or professional development programs. The standards that have been developed are good, in my opinion, in helping you understand the breadth of assessment and how it integrates with teaching. They represent serious efforts by major educational organizations to come up with specific areas of assessment knowledge and skills that teachers should possess to perform assessment roles and responsibilities (some of which concern large-scale testing). The standards also include responsibilities of the teacher for involvement in school and district decision making and involvement in the wider professional...
roles of teachers. The four major documents that summarize these competencies include the following:

- *Student Evaluation Standards* (2003). Joint Committee on Standards for Educational Evaluation. (These standards are set to be updated as this text is being published.)

Many of the standards from these four sources were prepared more from a psychometric than from a teaching perspective, with reliance on technical principles that have relatively little relevance to the classroom. Brookhart (2011) has updated the 1990 *Standards for Teacher Competency in Educational Assessment of Students* to reflect more contemporary issues concerned with formative assessment, high-stakes testing, and standards-based education. As such, they represent what I think is a very nice set of competencies that provide a foundation for what you should know and be able to do to develop and use assessments effectively. See if you can justify why each of these is important!

IX. Teachers should be able to articulate their interpretations of assessment results and their reasoning about the educational decisions based on assessment results to the educational populations they serve (student and his/her family, class, school community).

X. Teachers should be able to help students use assessment information to make sound educational decisions.

XI. Teachers should understand and carry out their legal and ethical responsibilities in assessment as they conduct their work. (p. 7)

Summary

This chapter introduced assessment as an integral part of teacher decision making and instruction. As a systematic method of collecting, interpreting, and using information, good assessment improves student learning. Major points in the chapter are the following:

- Classroom assessment consists of gathering, interpreting, and using information.
- Six important factors influencing classroom assessment include 21st-century knowledge, skills, and dispositions; technology; cognitive and sociocultural learning and motivation theory; standards-based education; high-stakes testing; and data literacy.
- Assessment includes four major components: purpose, measurement, interpretation, and use.
- Measurement consists of quantitatively differentiating behavior and performance.
- Interpretation involves professional judgment of the value or worth of the measured performance.
- Recent research on learning, motivation, and instruction suggests the need to use more alternative forms of assessment, such as performance assessments, simulations, portfolios, and interpretive items.
- Student involvement in assessment promotes student engagement and achievement.
- The current trend is for more emphasis on formative assessment and assessment for learning rather than of learning.
- State and federal accountability requires high-stakes objective testing, which influences classroom assessments.
- Teacher assessment and grading decision making is influenced by internal beliefs and values and external factors.
- Students’ perceptions of assessment are important determinants of subsequent learning, performance, and motivation.
- Professional standards have been developed to provide a framework for what teachers need to know about classroom assessment.
Introductory Case Study Answer

Abby should give the computerized assessment because balance is needed between external pressures of high-stakes tests and teachers’ notions of what they believe are in the best interest of their students. If Abby gives the computerized summative assessment, she can incorporate her assessment beliefs and values throughout her teaching unit. In doing so, Abby will have a balance in types of assessments that will give her a variety of data that she can use to:

- diagnose student strengths, weaknesses, misunderstandings, and learning errors;
- monitor student effort and progress toward proficiency;
- document student learning;
- improve student learning, motivation, 21st-century skills, and dispositions; and
- provide feedback to students and parents.

Abby can use her beliefs and values regarding assessment to guide her creation of multiple formative assessments. The assessments could be integrated with her instruction, and by giving them on a continual basis, the assessments would directly influence her instructional plan, as well as her students’ learning and motivation.

Suggestions for Action Research

At the end of each chapter are suggestions for action research. The intent of these suggestions is to help you apply what you are learning from the text to practical situations. By conducting this type of informal research, the principles and ideas presented will have greater relevance and meaning to you.

1. Investigate the time that is taken for assessment in the classroom by observing some classes. Compare your results to how much time the teacher believes is devoted to assessment. Also note in your observations the nature of teacher decision making. What kinds of decisions are made? How, specifically, does information from assessment contribute to this decision making?

2. Conduct an interview with two or three teachers and ask them some questions about assessment. For example, you could take Figure 1.4 and ask the teachers if they believe the so-called recent trends are actually evident. You could ask about the relationship between assessment and teaching/learning to see the extent to which assessment and teaching are integrated. Use Figure 1.5 to ask about “internal” and “external” factors that affect their assessment, grading practices, and decision making.

3. Interview a school administrator about what teachers need to know about assessment. Ask about the assessment standards to get a perspective on the reasonableness of the standards.

4. Talk with some students about assessment. Ask them what they think about different types of assessment, how motivated they are to perform well, and their reactions to doing well or doing poorly. See if they have any suggestions for how teachers should do assessment to be more helpful for their learning.