CHAPTER 2

How Do I Know What to Assess?

Ilford Press eachers make decisions constantly, both planned and unplanned. A widely used figure suggests that teachers make around 1,500 decisions every day. Read up on this if you are curious. Researchers at Carnegie Mellon and Temple universities (Koedinger, Booth, & Klahr, 2013) suggest that teachers make decisions based on the type of learning required by the students. Is Ahmed's understanding of the material the same as Beth's? If not, what instructional technique is likely to be most effective for each student? When should feedback be provided? Should it be given immediately, or after the student has time to think through the processes of completing the assigned task? Is the instructional approach for relatively simple learning the same as for more complex or abstract learning? You can probably surmise that most teachers could expand this list of possible decisions infinitely. Okay, maybe we exaggerate—or maybe not. Koedinger and colleagues (2013) identified several instructional techniques and different dosage levels (e.g., the spacing in time of similar learning tasks) and came up with the following astounding calculation reported in the prestigious journal Science.

If we consider just 15 of the 30 instructional techniques we identified, three alternative, dosage levels, and the possibility of different dosage choices for early and late instruction, we compute 3^{15*2} or 205 trillion options. (p. 935)

Wow! At the same time, students also have choices to make. Do I begin this essay with an anecdote, or should I jump right into the topic? Am I reading this essay to gain information, to enjoy the material, or some combination of both (e.g.,

¹Larry Cuban's thoughts on teacher decision making are here: https://larrycuban.wordpress.com/2011/06/16/jazz-basketball-and-teacher-decision-making; Larry Ferlazzo shares his ideas here: http://larryferlazzo.edublogs.org/2014/02/22/quote-of-the-day-have-you-ever-wondered-how-many-decisions-we-teachers-need-to-make-each-day.

Rosenblatt, 1995)? I'm having trouble understanding this text, so is it worth it to stop and try to summarize it?

Every time a decision is made by students and by their teachers, there is an opportunity for assessment. Not every one of these intersections of decisions by students and teachers warrants assessment, of course. But we educators are left with a host of questions. What student behaviors and products deserve our attention? Which of our own teaching behaviors and experiences should we self-assess? And, most important, what do we do with the assessment data and insights gathered?

ASSESSMENT THAT TELLS A STORY: HOW MUCH IS JUST RIGHT?

Stories often involve a problem and a resolution, whether that resolution is good, bad, unexpected, or something else. Consider poor Hamlet. Is he ready to be king? Does he want to be? What about his moral code that presents a difficulty when his ghost father suggests he murder Claudius? If ever there was a problem, this might be it: "Dad wants me to murder his murderer; should I?"

Hamlet's problem is probably not something you will face in your classroom, but the idea of determining how and what we teach and learn is important. By problematizing teaching and learning, we must think about the best ways forward or the best course corrections when necessary. One other point about the stories assessments can help tell is that these stories are always coauthored by the students with our help and guidance.

KNOWING OUR STUDENTS

Because our assessment stories should have satisfactory and happy endings, unlike poor Hamlet, our first stop on the road to telling that story is to know our students. For most teachers we have met, this goes without saying. They know their students' interests; their readiness to learn a skill, strategy, or concept; their eagerness to tell what happened in the lunchroom or what happened at home last week when a favorite uncle passed away; and much more. But knowing our students has particular implications for assessment as well.

A student's first language, if not the language of the school, is a prime consideration for teachers and how they assess student learning. The same can be said of cultural or ethnic differences. Students who cannot read a test question because it is in a language they have not yet mastered are at a disadvantage no matter how much they know about the subject or skill to be learned.

How do teachers get to know their students? If you are reading this book, you likely are a teacher or work with teachers closely, and you could easily write this

section yourself. Still, it's worth taking a little time to review what teachers do that helps them to know and understand their students.

Cumulative Files

This is going in your permanent record. Did anyone tell you that when you were in school, whether for an accomplishment or as a kind of warning? Permanent records or *cumulative files* (cums) can be useful, but it is paramount to remember that these files are legal or regulatory documents, not a picture of who a student is or what she can be. We agree with the sentiment expressed by teachers who say they do not look through cum files at the beginning of the year to get a sense of who the students are because starting with predetermined notions of what students are capable of achieving is problematic if our business is to guide students to productive time in our classrooms.

With the advent of increasingly sophisticated student information systems (SIS), vast amounts of data are available to teachers, ready to be punched up on a laptop on demand. Cum files in the digital age contain testing data, information about home languages spoken, behavior records, and much more. This information can be overwhelming, creating what John McCarthy (2014) of the website *Edutopia* calls "assessment fog." In an assessment fog, so much information is available that it can obscure the path forward and lead teachers and students alike into a thicket.

The cum file can be useful beyond its purpose as a legal document. A student who needs particular attention can benefit when his teacher examines the information in the file looking for patterns in attendance, grades, behaviors, and high-stakes test scores. The secret is to open the file for the purpose of helping a student succeed, never to prejudge or pigeonhole a student into categories in our minds that become self-fulfilling prophecies for the student. Rather, look for strengths, interests, and struggles the student faces that you can use as a foundation for a successful future and happy ending to the story.

Stand at the Door

When I (Thomas) taught middle school students, I made a practice of greeting them at the classroom door, nearly every day and every period. Why? First, I learned their names very quickly. The students quickly learned the rules, too. If I missed some as a large group came through the door, they called me out. "Hey, you didn't say 'hi' to me!" And, of course, I then did so. The practice had benefits for classroom discipline as well. Students who had a rough time at home or on the playground were met with a smile. It is hard to stay upset when someone just said "hi" and was happy to see you.

Each day, students came through the door and told me about a new baby sister, a sick brother, or an award from the chorus class, and that made it possible for me to respond, "How is that new baby sister?"; "Did you win your football game last night?" These things matter, and little by little, students can come to trust the teacher who puts aside all the administrative stuff (catching up on attendance, filling out the lunch count form) at the beginning of class and meets them at the door. Little by little, the teacher begins to know each and every student who is pursuing a learning adventure that day.

Wander Around

The other teachers nicknamed him "Ditto" because he spent his conference or preparation period running off reams of packets that students would silently complete during class. When the bell rang, the students knew to file in, to take a packet, and to work until the bell rang again at the end of class. Out they would file, and a new class filed in as Ditto sat in his chair at the back of the room reading his newspaper. Not a very exciting class, but the students sure knew what to do, and they did it. Until one day. You have likely figured out that this is fiction, from the movie *Teachers* (Levinson, Russo, Russo, & Hiller, 1984). Today, photocopiers have replaced ditto machines, so imagine the teacher who is in a panic because the copy machine is not working on a particular day and you'll have Ditto.

Then, one day, Ditto died while reading the paper. His chair kept him upright, and rigor mortis set in. None of the students noticed, and the bell rang. Out filed the students, and a new group came in, took their packets, and began to work. About halfway through the class, Ditto toppled over in his chair. The students noticed.

Ditto is a caricature, but he serves to make a useful point. Sometimes our desks beckon with grading to do, scores to record, and reports to file with the school administration. Get up anyway. Wander around the room. Look at the work students are doing as they are doing it. Listen to small groups process complex ideas and explain challenging concepts.



Professor tip: We explore this idea and its relationship to assessment in more detail later. For now, it is also a good way to learn what our students know, what they can do, and what they care about.

Student Conferences

Meeting, however briefly, with our students is a good way to get to know who they are. Doing so can be a challenge in a classroom with 30 or 40 kids in it, but it can be done. Confer with students about their writing with gentle nudges to help them

improve. Confer with them about their progress as well as their struggles in class. Confer in order to understand a behavior you find to be a problem. Getting to know students this way builds trust and helps you know more about your students and how best to communicate with them. Quick note: You might have noticed that we used the term *confer* instead of the terms *conference* or *conferencing*. Why? Because the perfectly good English verb *confer* already exists, and it's shorter!

KNOWING STANDARDS AND OBJECTIVES

At the top of most written lesson-plan templates there is a space for standards. Often there is a space for objectives or outcomes as well. This space is always placed at the top before any of the lesson activities are described. It is not just a convenient place to include this information; the space is at the top for a reason. Standards and objectives should drive the types of learning activities that are included in any lesson. Stiggins (2005) used the term *learning targets* to indicate what it is that students should know and be able to do. Some time ago, Grant Wiggins and Jay McTighe (2005) proposed what they called "backward design," in contrast to what they called "forward design," in which teachers choose the activities in which students will engage and the instruction they will provide. In their view, forward design presents a problem because it focuses on what the teacher does and directs students

to do. A side effect of this approach is that the activities and instruction can be, and often are, mistaken for learning.

To remedy this, Wiggins and McTighe coined the term backward design to suggest that the first part of any lesson (or unit or course) has to be determining what the learning goals, targets, or objectives should be. The second part of lesson planning is determining what an effective performance of the learning target might look like. Only then is it a good idea to move to the third part of backward design—determining which types of instruction and which activities will guide the students to achieve that target.



Wise teacher tip: Knowing what students should be able to do is not the same as asking

OBJECTIVES, OUTCOMES, AND STANDARDS

Often these terms are used interchangeably, but they do mean slightly different things. An *objective* is what a teacher plans for her students to learn, and an *outcome* is what students actually learned. Ideally, objectives and outcomes are always the same, so it makes sense that the terms are used the same way. In schools that rely on *standards* (and which schools don't these days?), the standards guide the learning objectives. Standards are not necessarily the same thing as objectives, either. An objective guides students toward mastery of the standard, often in conjunction with other, related objectives.

Objectives are what students should learn at the end of the lesson, however long that lesson might be. Sometimes that learning is accomplished in one class session or period, and other times it extends across several days. them to complete an activity or worksheet. Activities do not necessarily equal learning.

A little over 40 years ago, a researcher at the University of California, Los Angeles, noticed something irregular about the basal reading books she found in teachers' classrooms. Irregular, or perhaps downright odd. The teachers' editions of the basal readers prompted teachers to do two things: assign and assess (Durkin, 1981). Durkin (1990) analyzed the texts and discovered that the books had no provision for direct instruction. Her research on reading comprehension instruction revealed that less than 1% of the time spent during reading at school was devoted to comprehension instruction. Most of the classroom time was spent assessing comprehension through the teacher asking questions about what students had been assigned to read. Years later, the RAND Study Group (2002) found that teachers in the primary and upper elementary grades still did not devote adequate time to comprehension instruction.

There are a few lessons we can derive from this example. Relying on supplied materials, such as a basal reader, for instructional guidance may not be the best instructional strategy. The other lesson is that teachers are in the best position to determine what objectives are to be met, what a good performance demonstrating understanding of that objective looks like, and what activities and instruction will most likely lead to that outcome.

Effective assessment rests on knowing what concepts, knowledge, skills, and dispositions students should achieve based on the standards that inform curriculum planning and on having a clear plan, based on objectives, to guide students to success. An extra benefit: If students know and understand what they are attempting to learn and what learning performances look like, they are more likely to be successful.

STORIES FROM THE CLASSROOM

Quentin Fields teaches 11th-grade English Language Arts at James Logan High School in Union City, California. Here he describes how he assessed a problem his students encountered with public speaking and how he used assessment to help them overcome the challenge.

How I Determined My Thesis and Its Effects on Public-Speaking Students

QUENTIN FIELDS

As a first-year teacher, the thought of saving the world one child at a time is what dictates which lessons are prepared. Well, that and the state standards, of course.

It was in my first year that I decided to take a different approach in teaching both argumentative writing and discourse: I created a debate unit. Seeing that I was teaching 11th grade, I figured that giving students an opportunity to practice their argumentative skills in a professional setting would prove to be fun and helpful. Students were organized into teams and therefore had a support system in place to help them when the day came to present their argument against another team. Unfortunately, I began to witness multiple students struggle when tasked with speaking in front of the class. However, it wasn't until one student actually had an anxiety attack that I realized how difficult public speaking could be for students.

Fast forward to the next year, and just before we started the argumentative unit, I held a discussion with each class. We focused on the reasons why students tend to have more anxiety when speaking in front of the class than at any other time. Students began to share many reasons, such as self-consciousness, lack of preparation, and even a lack of interest in the topic. After holding this class conversation, I decided to use this opportunity to focus my master's thesis on how to reduce anxiety among high school students during public speaking.

Our first step was to try different methods before and during the public speaking presentations. Some students presented with the lights off in order to see if a darkened room decreased their feeling of self-consciousness or inadequacy. Others used slide shows to take the focus off them, giving the audience a visual aid to occupy their eyes. In order to allow for better preparation and stimulate interest in the topic, students were allowed to choose anything they wanted to inform their classmates about. We even had students compare sitting and standing during their speeches, and it was interesting to see the difference in the level of comfort displayed between the two presentation styles. Speaking with confidence is half the battle, and after each presentation, the audience provided positive feedback to help generate more confidence for future speaking situations. In a sense, having students present informative speeches before the argumentative debate unit gave them more confidence and an opportunity to share something they truly cared about.

Finally, students were assessed based on a rubric that evaluated the multiple areas involved in public speaking (see Figure 2.1). Students were to try to maintain a proper posture; to feel comfortable with the audience; and to have appropriate volume, speed, and modulation. Last, students were asked to make sure that they were aware of their audience's needs, which is always a challenging task. This required them to try and use relatable examples, jokes, and current events to entice the audience into listening to their speech. In addition to the grading rubric, students also completed a reflection sheet sharing how they felt about their most recent performance compared to past performances. In the end, it was an experience that reminded me of how many factors are part of one's execution when it comes to speaking publicly.

Content	High 5	Mid High 4	Middle 3	Low Mid 2	Low 1
States the purpose.					
Organizes the content.					
Supports ideas.					
Incorporates examples.					S
Summarizes the main idea(s).				· Q	
Demonstrates awareness of listeners' needs.				10	
Speaks clearly with appropriate vocabulary and information.					
Uses tone, speed, and volume as tools.		C.	5		
Posture is straight and still.		1/1/0			
Appears comfortable with audience.	2))			

FIGURE 2.1. Informative speaking rubric.

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FORMATIVE, SUMMATIVE, AND BENCHMARK ASSESSMENTS

Before we launch into our discussion of what to assess, let's take a brief side trip. Many schemes deconstruct assessment in several useful ways. A quick tour of the approach most familiar to us as teachers should be helpful before we delve into the details of what needs to be assessed and how to do so. The particular instrument or artifact we use for assessment purposes doesn't define whether it is formative or summative. The purpose of the assessment is what counts. We can think of formative assessments as guiding learning, summative assessments as certifying learning, and benchmark assessments as both guiding and tracking learning, according to Kathy Dyer (2017) at NWEA, an educational testing firm based in Oregon.

Formative Assessment

A fairly useful and precise definition of formative assessment is just what we need here. Fortunately, Black and Wiliam (2009) provide one.

Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited. (p. 9)

Wiliam (2011) makes clear that formative assessment supports learning rather than determines if learning has occurred. He proposed that formative assessment involves three processes: deciding what the student has currently learned, knowing where she is going, and providing feedback that will help her move forward. These three processes can be acted on by the teacher, by peers, and by the learner herself. Formative assessment is often referred to in practice as "assessment for learning," and we use both terms in this book.

Put another way, formative assessment is focused on the student and his progress toward educational objectives. That's important to keep in mind when we turn to a discussion of grading practices and how they fit into our assessment practices. If formative assessment is intended to be useful to the learner, what about summative assessment?

Summative Assessment

Summative assessment is sometimes referred to as "assessment of learning," and it emphasizes information that teachers, school administrators, government agencies, educational institutions, and the public may need. Exams at the end of a unit or semester aid the teacher in deciding what was learned and to what degree. High-stakes assessments required by state or federal governments guide policymakers and others as they make educational decisions that affect large populations. Standardized tests for college admission provide information to college admissions officers as they determine which candidates of many would be a good fit for their universities. Summative assessments do not tell us everything about what has been learned, but give us enough to go on, usually after the instruction and learning activities are completed.

To be certain, assessments intended to be summative can be used by teachers to inform future learning events for students or to plan new instruction based on past summative assessment. If you have participated with your teaching colleagues in a professional learning community to analyze last spring's high-stakes test scores and make plans to address areas in need of improvement, you have been using a primarily summative assessment as a formative assessment.

Benchmark Assessments

Somewhere between formative assessments in the classroom and summative assessments at the end of a unit or semester lies the realm of the benchmark or interim assessment. Benchmark assessments often gather data in a way that charts a pattern of growth and makes it possible to predict what instruction is necessary to chart a way forward (see Dyer, 2017). They may also be useful in making appropriate determinations for differentiating instruction as well. Other benchmark assessments use instruments that capture snapshots of learning, such as the third edition of the Fountas and Pinnell Benchmark Assessment System. Earlier we mentioned that benchmarks and interim assessments get a pass on the caveat that the type of assessment is not necessarily determined by the instrument or activity. The reasons are that benchmark assessments are usually designed specifically for that purpose and that they provide formative, summative, and predictive information. With this foundation, we can now turn to the questions of what assessments are needed and how to determine what should be assessed.

GATHERING INFORMATION AND EVIDENCE

For the remainder of this chapter, we focus on formative assessment because it is the assessment form over which teachers have the most control, and which they typically find the most useful. Benchmark and summative assessments are addressed in later chapters. In Chapter 1, we asked you to list a variety of assessments that are routinely part of your classroom practice. These could include observing students' performances; listening in to their groupwork; providing a rubric and models of excellent performances; and exit slips, quizzes, homework assignments, essays, and other written products. Every one of these assessments is a source of useful information about how students are performing and how they might move forward toward achieving objectives and standards.

A little reflective assessment of our own practices might be helpful, so let's give it a try. In Appendix A (see pp. 167–169), you will find an instrument for thinking about a single lesson or instructional event. Across the top of the assessment, there are several instruments or tools that might be used in a formative manner to gather information and evidence about how students are progressing. Along the left side are several types of activities or artifacts of those activities, like those mentioned in the previous paragraph, that students might produce.²

In Figure 2.2, we provide an example of how this form might help with the analysis of the many assessment tasks that might occur in your classroom. Not

²We want to thank Passant Mahmoud at the American University in Cairo for laying the substantial foundation for this instrument and others in this book.

Assessing the Tools

assessment tool that is also designed to be applied in many contexts, including different grade levels, different class subjects, different educational systems, Accordingly, they can modify, amend, or change their applied assessment techniques to be able to assess their students more effectively. This is a general This instrument is designed to analyze and evaluate the different assessment tools used by teachers in class. This assessment serves teachers in terms of and so forth. The criteria in this tool are derived from the assessment steps that teachers originally go through with their students in any educational cycle. 'assessment for learning" since it can help them measure the effectiveness of their assessment techniques used throughout the year with their students.

Assessment for Learning Checklist

Standards:

Date: February 4, 2020

Class: 3rd period

relevant evidence

CCSS.ELA-Literacy.W.7.1— Write arguments to support claims with clear reasons and

Subject: 8th grade English

Teacher: Mr. Yorick Observer: n/a

Objectives:

Students will be able to identify and analyze the claims made in a written argument.

Students will select and construct claims for an argument paper they will write.

(continued)

FIGURE 2.2. Completed example of Appendix A, Assessing the Assessments: Gathering Information and Evidence.

(C) Content	Assessment Tool			Gathering	Gathering Information and Evidence	Evidence		
(Pr) Process (Pr) Product	20%	Questioning	Observation	Quizzes, Tests, and Exams; Other Work Products	Checklists	Rubrics	Self- Assessment	Peer Assessment
Student Work Products or Activity	Description	Teacher asks focused and planned questions to ensure understanding of the material.	Teacher systematically observes and monitors students, including checking for understanding.	Teacher collects written evidence of what the students have learned.	Teacher measures students' learning by matching it to specific criteria in relation to learning outcomes.	Teacher effectively communicates expectations of quality and grading at different levels of achievement.	Teacher allows students to reflect on their own performance, supplying them with defined criteria to measure against.	Teacher allows students to reflect on the performance of their colleagues, supplying them with defined criteria, to measure against.
Homework and Assignments	Teacher assigns students with relevant homework and assignments that further enforce understanding.			Cornell notes (C) and (P)	cuil	Rubric (Pr) Written argument (Pr) and (C)	Graphic organizer (C) and (P)	
Informal and Quick Checks Checking for Understanding	Teacher uses exit slips, minute paper, polling with technology.	Responses to questions— whole class (C)	Discussion in pairs or triads (C) and (P)		loto	Ries		
						S		(continued)

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Teacher allows students to show their learning of the material by presenting it to their classmates.	Teacher allows students to deepen and show connection in their learning by working on individual/group projects.	Teacher promotes behaviors such as collaboration, on-task work, classroom routines, cognitive strategies, and critical thinking.	
Presentations	Projects	Behaviors and Dispositions	Comments

every instrument, work product, or artifact will appear in every lesson, so don't worry if some boxes are blank.

Imagine an eighth-grade lesson in which students are learning the fine art of argumentation as indicated in the Common Core State Standards (National Governors Association [NGA] & Council of Chief State School Officers [CCSSO], 2010). First the teacher shows a video clip explaining how argumentation is used in everyday life. Next, he introduces a couple of topics that have multiple viewpoints from which to argue (e.g., banning the sale of plastic straws and grocery bags or drilling for oil or minerals in the Arctic). The teacher probes with a few questions to get the pulse of how well the students understand the nature of the arguments presented.

The students are given an article to read that outlines some of the possible arguments, then they are permitted to choose a partner or triad with whom to work as they research their issue. They discuss the issues and jot down notes using the Cornell note-taking approach (Paulk, 2001) to identify the claims made in the article. Once they have finished the assignment, the students complete a short activity to think through how well they worked together (we call it the Goal 18 evaluation tool, and you can find it in Figure 5.13 on p. 100). Then they report what they found to the whole class. A rubric is given to the students that outlines the characteristics of effective arguments in writing and arguments that are suitable or may need improvement. The next day, students will use a graphic organizer to outline their arguments and begin writing. This lesson includes the tools, work products, and performances shown in Figure 2.3.

For discussion purposes, we use the term *tools* to refer to instruments that are intended to guide learning but are not the point of the learning; for example, the graphic organizer is not intended to be used as an end in and of itself; rather, it is used to help students organize their thinking. Work products are those artifacts that students create and that can be examined during production and at a later time. Performances are ephemeral and cannot be examined later. However,

Tools	Work products	Performances
		Responses to questions
		Discussion in pairs or triads
	Cornell notes	
		Goal 18
Rubric		
Graphic organizer		
	Written argument	

FIGURE 2.3. Artifacts, work products, and performances.

a teacher may choose to create anecdotal notes or an observation instrument that documents what information a performance might reveal.

We use the form in Appendix A, Assessing the Assessments: Gathering Information and Evidence (see pp. 167–169), to explore the assessment opportunities in the lesson. It's certainly possible to make an assessment by placing checkmarks in the matrix cells, which sometimes is enough, but a few keywords or notes can be helpful, too.

In the completed example in Figure 2.2, not all the cells in the matrix are checked upon because it is not necessary to use all the tools and activities in every lesson. As you can see, almost anything students do can produce assessment data even if that is not the primary purpose. For example, students may analyze an argument for the purpose of meeting the instructional objectives, but their analyses also provide information that the teacher can use to guide and adjust instruction.

Also note that each of the assessment sources in the matrix is coded to indicate whether it is primarily content (C), process (P), or product (Pr). Being precise by knowing what assessment information we are gathering can be helpful when it is time to act on the assessment information gathered.

INTERPRETING AND ANALYZING ASSESSMENT INFORMATION

Once evidence is gathered, we need to make sense of it. What do we have? What does it mean? Again, a chart may help us organize our thinking. Using the same example, the eighth-grade lesson on argumentation, we can parse the information and start planning our actions for adjusting instruction and providing feedback.

Before we jump in, we must first ask ourselves, how do we know students have learned? Put another way, how do we work with students to make learning visible? That age-old routine when Mom asks, "What did you learn in school today?" is instructive.

MOM: What did you learn in school today, Alex? ALEX: Nothing. We read from some old book.

Sound familiar? Teaching students to make their learning visible (e.g., Fisher, Frey, & Hattie, 2016) flips that exchange on its head. What if Alex knew why he read that book? One "move" students might be taught to make is to be able to explain any learning task and how it fits into greater understanding.

Doug Fisher and Nancy Frey write about their journey to make literacy learning visible at an urban high school in Chapter 7 (see the box "Using Effect Sizes to Determine Impact and Adjust Learning Experiences" on pp. 138–140). For now, literacy consultant Angela Stockman (2015) suggests three moves that students

should use to make their learning visible, and we have added our own to hers for a total of four:

- 1. Demonstrate or describe the purpose of any learning task and how it meets the standards and other measures of quality.
- 2. Explain and understand the process that resulted in their product.
- 3. Reflect before, during, and after learning.
- 4. Describe metacognitive moves (such as self-assessment or use of strategies).

If learning is made visible, then it is possible to better interpret and analyze assessment data. The form in Appendix B, Assessing the Assessments: Interpreting and Analyzing Assessment Data (see pp. 170–171), can be deployed in several ways. A teacher may use it to predict what information a planned assessment event provides or to assess the assessment events (yep, we assess our assessments to make sure they are of good quality). An observer might be invited to use the tool to help a teacher spot ways to improve classroom assessment, or students might use a modified version to reflect on what they learn, on how they learn, and on how they know they have learned. We give an example in Figure 2.4.

Another way to visualize the assessment and learning cycle is the feedback process cycle, which appears in Figure 2.5 (p. 29), and is produced by the Assessment Design Decisions project in Australia. You can read about the project's framework for assessment at www.assessmentdecisions.org/framework.