

CHAPTER

3



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This is the tale of two schools, both trying to ensure that their students learn. In both schools, teachers work hard. There are teachers on the campuses at six in the morning and teachers on the campuses at six in the evening. Students in both schools indicate that their teachers care for them and that they like being at school. Both schools serve a similar demographic of students, with about half of their students living in poverty and a wide range of languages spoken by the students. But these two schools realized very different results on every measure of student learning, from teacher-created progress monitoring tools to state assessments.

Walking through each school and talking with students about their learning revealed significant differences in the students' experiences in the classroom. In the first school—we'll call it Blossom Valley—the principal regularly stopped to talk with students, typically asking, "What are you doing?" Nearly every student queried related information about the task at hand. In the second school—we'll call it Mountain View—the principal asked students a different question: "What are you learning?" And nearly every student responded with a personal version of the learning expectation from the day.

This situation got us thinking about students' ownership of their learning. We believed that students at Blossom Valley were more focused on completing tasks whereas students at Mountain View were more focused on their learning. But given that the questions they asked were different, we asked the principals whether we could talk with students again. As we walked classrooms a second time, we asked students a consistent set of three questions:

- 1. What are you learning?
- 2. Why are you learning that?
- 3. How will you know that you have learned it?

The students at Blossom Valley had a very difficult time answering these questions. In most cases, they answered what they were doing rather than what they were learning. When asked why they were learning the content, the answers focused in three areas: (1) future events such as

getting into college or getting a job; (2) the state standards; and (3) they had no idea. Not one of the Blossom Valley students could tell us how they would know if they learned the content. Some could describe how their teachers would know (e.g., looking at their homework, grading papers, giving a test).

This contrasted significantly with the student responses at Mountain View. Nearly every student we talked with could tell us what he or she was learning. They understood the daily learning intention but expressed it in their own words. For example, a group of students was studying life cycles. The learning intention on the board read "Students will recognize that insect life cycles are similar to and different from human life cycles." When asked what they were learning, Brandon said, "I'm learning about life cycles, and today we're learning how butterflies are different from humans; like we don't lay eggs and butterflies do." Rachael said, "I'm learning about different life cycles. Humans are different from butterflies and frogs. Everything is born, but they're born in different ways. Like butterflies and frogs lay eggs, but people don't. And the butterfly life cycle has the chrysalis when they change a lot. Frogs change a lot from tadpoles that live only in the water. Humans don't change like that. We just grow bigger."

When asked why they were learning the content, students' responses clustered into one of three categories:

- 1. **They would use this information outside of the class- room**. For example, Hasan said that he was learning about fractions "so that I can measure things at home accurately," whereas Marla said that she was learning about fractions "because people give you information that has fractions, like half past 10, and you need to know what it means."
- 2. **They would learn about themselves**. For example, Michael said that part of the lesson on writing was so that he could "learn about how I write and how my writing processes change because of the audience." Tyler said that she was learning "how I solve problems. The teacher has one way but it's not the only way. I have to learn about how I solve problems myself."

When students know what they are supposed to learn, why they are learning it, and how they will know that they have learned it, they learn more, behave better, and engage in school in more substantial ways.

3. They needed to know this for future learning. Tanya said, "I'm learning these sight words so that I can read faster." "I'm learning sight words because they are in my books," Billy said. Andrew said, "This is important to learn because if I don't understand the reasons that the colonists were not happy with Britain, then I might not understand the reasons for the American Revolution."

And finally, when asked how they would know if they learned it, the vast majority of students at Mountain View described their personal use of the knowledge. Some talked about being able to teach others. Some talked about using their knowledge on projects and other assessments. Others said that they could tell their parents what they learned. And still others focused on feeling good about what they learned because they could remember the information.

It is probably no surprise that the students at Mountain View significantly outperformed the students at Blossom Valley academically. We attribute a significant part of this to the fact that their teachers were clear about the learning targets and made learning relevant. These teachers also had developed success criteria, and students had taken increased ownership of their learning. In other words, there was significant clarity in what students were learning. You might be surprised that the students at Mountain View also outperformed the students at Blossom Valley behaviorally. Mountain View students are subject to disciplinary action far less frequently than their counterparts at Blossom Valley. The suspension rates were also very different, with Mountain View experiencing fewer suspensions and no expulsions. Although this occurred at two elementary schools, it is equally applicable at middle and high school. It seems that when students know what they are supposed to learn, why they are learning it, and how they will know that they have learned it, they learn more, behave better, and engage in school in more substantial ways. The intersection between the teacher and the content—teacher clarity—contributes to student learning in valuable ways, and it further expands an engagement by design approach, which views the interaction between relationships, clarity, and challenge as imperative.

### Clarity in Teaching

All of us are driven by purpose. When actions are attached to a purpose, we engage in a more meaningful way. We can compare our progress to the goal, make adjustments along the way, notice when we need

help, and gauge our own success. Purpose transforms our actions from compliance to commitment, and it allows us to draw on intrinsic motivation to get the job done. Isn't that what we want for our students? Clarity in teaching is key to unlocking the curiosity and creativity that are essential traits for learning. But try as we might, the national Student Voice data tell a different story. Among high school students, only 57% responded positively to the statement, "School inspires me to learn," and only 38% agreed that "my classes help me understand what is happening in my everyday life." At a time when they are poised for adulthood, a significant number of young people are struggling to find the purpose of their school experiences.

Clarity in teaching is crucial if students are to accomplish the intended objectives in the classroom. To our thinking, teacher clarity consists of four essential elements:

- The teacher knows what students are supposed to be learning
- The teacher knows how students learn (pedagogical content knowledge)
- The students know what they are supposed to be learning
- The teacher and students know what success looks like

Teacher clarity has a large effect size of 0.75 (Hattie, 2009), equivalent to nearly two years' worth of growth for a year in school. And that makes sense, doesn't it? When teacher and student are in agreement about what is to be learned and how both of them will know when intended learning has occurred, we save a whole lot of time that would have otherwise been spent floundering around looking for purpose.

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A deep understanding of how students learn undergirds teacher clarity. Fendick (1990) describes four practices that ensure classroom instruction and assessment are properly marshaled, such that learners know what they are learning and how they can measure their own progress:

- Clarity of organization: lesson tasks, assignments, and activities include links to the objectives and outcomes of learning
- 2. **Clarity of explanation**: information is relevant, accurate, and comprehensible to students
- Clarity of examples and guided practice: the lesson includes information that is illustrative and illuminating as students gradually move to independence, making progress with less support from the teacher
- 4. **Clarity of assessment of student learning**: the teacher is regularly seeking out and acting upon the feedback he or she receives from students, especially through their verbal and written responses

This is the science of learning, and it marks the difference between a person with subject matter knowledge and one who possesses pedagogical content knowledge. Perhaps you have encountered this in your own education, when you enrolled in a course with a brilliant professor with deep knowledge of her subject but little understanding of how knowledge is developed in novices. A teacher needs subject matter knowledge, of course. It's difficult to conceive of an effective Algebra II teacher who doesn't understand the knowledge base. But at a 0.09 effect size (Hattie, 2009), the teachers' subject knowledge doesn't predict how well students will learn the content. The teacher also needs pedagogical knowledge, which is the science of teaching, and knowledge of how that interfaces with the subject being taught. That's pedagogical content knowledge (Shulman, 1987).

In this chapter, we will explain how to incorporate each of these four essential elements of teacher clarity into your teaching:

- Know what students are supposed to learn
- Know *how* students learn (pedagogical content knowledge)

- Know how to communicate what students will be learning
- Know how to develop success criteria

As we noted in Chapter 1, the *conceptual intersection* of the content and the teacher is an essential component of engagement by design.

# Know What Students Are Supposed to Learn

It's impossible to plan a trip when you don't know your destination. Sure, you could wander through the landscape and encounter a few surprises along the way, but chances are that doesn't describe the kind of trip you usually take. The knowledge building we do with students has some parallels to a trip, in that we have some specific outcomes in mind, and we plan accordingly. These outcomes are articu-

lated through the content standards, and although we promise this isn't a chapter about standards documents, it is important to acknowledge that they serve as a road map for teaching. Two assumptions are embedded in every standards document. The first is that the teacher holds an expectation that each child can meet and exceed the standards for the grade level or course. The second is that the teacher possesses an ability to organize the content such that skills and knowledge are built in a logical way. Seventy-three percent of students think their teachers believe in them and expect them to be successful. Our dream is that 100% of students will know without a single doubt that we believe in them and know they can be successful!

## **Communicate Expectations**

When teachers communicate high expectations of students, they let learners know that they belong, that their teacher believes in their potential, and that the teacher's primary role is to help them achieve success. Teacher expectations have a powerful effect on learning. Hattie (2015) reports that teacher expectations of student learning have an effect size of 1.61, making it among the strongest overall of the nearly 200 effects examined and equivalent to three years' worth of growth for a year in school.

73% of students think their teachers believe in them and expect them to be successful.

But how do teachers communicate expectations of students? In the previous chapter, we discussed monitoring the ways we interact with learners verbally and nonverbally such that we aren't differentially

Only 47% of students believe teachers are willing to learn from them.

lowering expectations for some students (Good, 1987). One behavior of note in this context is the amount of public interaction we have with students who are not yet achieving at expected levels (we chose those words deliberately, as *yet* conveys optimism). When you engage a student in dialogue about the content, you are signaling to him and the rest of the class that he is valued as a learner. We don't mean interrogation, but rather true exploration of a learner's thoughts and perspectives that other students and the teacher can learn from. A low 47% of students believe teachers are

willing to learn from them. A classroom is significantly transformed when students believe their participation in class is not just about getting a grade and they are truly engaged in a learning environment that values the thoughts of every individual as critical contributions to the collective learning of the class—including the teacher.

We understand that some students are reluctant to share their ideas, especially if they have been socialized to believe that "doing school" is all about having the correct answer every time. So have a few tools in your arsenal:

- Give students time to consult with one another first in a small group before posing more complex questions
- Make sure you've got an equitable distribution of respondents
- Ensure that wait time is provided, both before and after the response

Lots of teachers pose a thought-provoking question, then ask their students to signal to them when they are ready to answer, such as giving a thumbs up. "I see five people who are ready. Now it's seven. Keep thinking," says Kindergarten teacher Amy Washington. "I'm seeing 12 people who are ready to answer," she continues. "A few people aren't quite sure. Can you confer with your neighbor for a moment to check in?" she asks. Next, Ms. Washington calls one of the children who took a bit longer to signal. "I want to be sure I'm not always calling on the same six kids

who seem to have an answer right away," she said. "There's nothing wrong at all with giving ideas a chance to percolate."

#### **Understand the Standards**

One way to ensure that expectations for students are appropriate is to consult grade-level standards. These documents serve as a guide for the content students should master over the course of the year. Larry Ainsworth (2011) developed a process for helping teachers analyze standards to identify what students still need to learn. His recommended process begins with understanding the demands of a given standard or standards, which can be accomplished by listing the standard(s) and then identifying in each:

- Verbs—How students will demonstrate their understanding
- · Nouns—What students are required to know

For example, second-grade students are expected to

Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures. (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010, p. 11)

The verbs tell us students need to compare and contrast. That means that students will have to understand the terms *compare* and *contrast*. They will also have to understand how to engage in compare and contrast activities cognitively. And they will have to use that knowledge in the context of reading. The nouns *versions, story, authors,* and *cultures* jump out. Again, students will need to understand the terminology and then how to use that information in analyzing a text. Hopefully, you can already see that this standard will require multiple lessons for students to eventually master. Many districts have engaged in extensive professional learning for teachers on analyzing standards. The true value of this work can be found in the deep understanding of groups who have engaged in such processes. More informally, there is much to be gained from working collaboratively with colleagues at your school in analyzing the standards to plan for learning.

67% of students believe what they

are learning will

benefit their future.

As we plan instruction, we also consider the prerequisite knowledge, the key vocabulary (especially terms not included in the standard), as well as ideas for teaching and assessing. Figure 3.1 contains a planning tool that

teachers can use to analyze standards for planning instruction. Returning to the second-grade standard above, the standard seems to assume that students know that there are different versions of the same stories. If they don't, instruction will likely need to start there. In addition, the standard requires that students know the difference between stories and informational texts. For this standard, students should already know the difference between characteristics of narrative versus expository

texts. If they do not, then the unit of instruction will need to include that information as well. Moving along, in addition to the vocabulary within the standard, students might need to know the terms *point of view, characters, setting, problem, goal, message, moral, events, solution, plot, similarities, differences,* and so on. Instructional ideas could include teacher modeling using two versions of Cinderella as well as collaborative groups with various versions of Johnny Appleseed. Alternatively, the teacher might plan a series of lessons analyzing two texts using different perspectives each day, such as characters on the first day, setting on the next, goal the next, and so on. Assessment options include retellings, concept maps, written responses to writing prompts, and so on.

Our point here is that teacher clarity requires that teachers know what students are expected to learn. This requires maintaining high expectations for students and a deep understanding of the grade-level standards. Teachers should also be able to explain to students how these standards are helping prepare them for the future. Sixty-seven percent of students believe what they are learning will benefit their future. When students do understand the link between standards and the rest of their lives, the learning experience becomes all the more meaningful and engaging for students. Additionally, teacher clarity requires an assessment of students' current level of understanding.

## **Pre-Assess Understanding**

As we have noted earlier, most standards have assumptions about students' prior learning. When that learning is absent, teachers have to

## **ANALYZING STANDARDS**

Standard(s)				
Concepts (nouns)	Skills (verbs)			
Prerequisite Knowledge				
Key Vocabulary				
Instructional Ideas				
Assessment Tools				
c 06,				

Figure 3.1

online resources

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When students do understand the link between standards and the rest of their lives, the learning experience becomes all the more meaningful and engaging for students.

fill in the gaps. But there is another side to this coin. There are students who have already mastered specific aspects of the content, and it could be a waste of time for them to sit through another set of lessons. Thus, really knowing what students need to learn is more complex than simply analyzing standards. It also requires some sort of pre-assessment of students' knowledge. Of course, we don't want to squander too much time on this, but imagine the waste of time if students already understood the next unit of study.

Nancy and Doug had been teaching two large-section twelfth-grade English classes with more than 80 students in each class. One of the units required that students compare the opera *La Bohème* with the film and stage productions of the musical *Rent*. The reason we selected these texts related to the traveling Broadway production of *Rent*, which all students would be invited to attend. At the outset of the unit, we gave students a 10-item assessment focused on dramatic elements, consistent with the 12th-grade standards. For example, one question asked the following:

#### The antagonist is the play's

- a. villain
- b. main character
- c. supporting character
- d. obstacle

Nearly every student answered this question correctly, which did not surprise us, as this content should have been covered before high school. Based on these data, there was really no reason for us to focus on this content. Had a large number of students incorrectly answered this question, we would have had to start the unit at a different place.

There are a number of ways to pre-assess students' understanding, and we are not advocating for total reliance on multiple choice items. We have used essays, constructed responses, retellings, visual representations, and performances to determine which aspects of the content students had already mastered. The point is not the specific tool, but rather an understanding of the gap between the grade-level expectations and

the current levels of performance for a group of students. When that gap has been identified, teachers can organize the content, and a series of lessons, in a logical sequence to ensure learning.

#### **Organize Content**

A skilled teacher understands the scope and sequence of the content being taught and knows how to convey skills and concepts in logical ways (Donovan & Bransford, 2005). The learning progressions featured in many standards documents organize content such that knowledge deepens over time, from surface learning to deep learning and then transfer (Fisher, Frey, & Hattie, 2016). The surface phase of learning describes time when students are learning the initial contours and boundaries of the topic, including fundamental principles and associated vocabulary. Students move into the deep learning phase when they begin to link concepts, see patterns, and build schema about the topic. The intent is to teach for transfer of knowledge; that is, the ability to apply learning to increasingly novel situations. These are not strictly developmentally based. In other words, it's not that primary students are in the surface phase, while middle schoolers are deepening knowledge, and lastly high school students are only about transfer. Rather, students cycle through these phases as they acquire new knowledge. Writing is a good example. Students should be continually learning new techniques to apply to their writing (surface), recognizing when writers are using similar techniques (deep), and utilizing them in their own writing (transfer). Primary writers may be moving through these phases as they learn about using descriptive language, and older students are similarly learning about argumentation and rhetoric. Expert teachers understand this progression and organize content learning such that students are able to acquire, consolidate, and apply knowledge.

Although surface, deep, and transfer phases unfold over weeks and months, attention to daily learning expectations is critical if students are to organize knowledge. Whether you call them learning intentions, learning targets, or purpose statements, the aim is the same: Describe what it is that students will be learning today. The daily purpose for learning is threefold:

- content purpose
- language purpose
- social purpose (Fisher & Frey, 2011)

Together, these describe the cognitive, linguistic, and behavioral objectives for the lesson. For instance, Margarita Espinoza's fifth-grade science lesson on stars includes the following purposes:

**Content purpose:** Understand that a star has a life cycle that begins with its formation and ends as a white dwarf.

**Language purpose:** Use star life cycle vocabulary (*stellar nebula, star, red giant, planetary nebula, white dwarf*) to describe the phases.

**Social purpose:** Collaborate with classmates to share information, ask questions, and listen closely.

Ms. Espinoza's purpose at this surface phase of learning in her science unit is to equip her students with fundamental principles and associated vocabulary. Later in the unit her purposes change, reflecting her students' progress into a deeper phase of learning. She is inviting them to link their current learning about stars and matter with knowledge previously learned about food webs:

**Content purpose:** Trace the path of matter in systems as it changes.

**Language purpose:** Compare and contrast how matter changes in the life cycle of a star and in a food web on Earth.

**Social purpose:** Ensure that each table partner has an opportunity to contribute to the discussion.

Later in the unit, they return again to conservation of matter, learned earlier in the year, to see how this principle applies in space as well as on Earth. This time, they are completing a lab experiment.

**Content purpose:** Investigate the relationship between a star's color and its density.

**Language purpose:** Develop a hypothesis and explain your reasoning in discussions and in writing.

**Social purpose:** Observe lab safety rules during your group's experiment.

As a result of her organization of the content and her attention to the daily purpose of each lesson, Ms. Espinoza's students are better able to understand the sequence of information about stars, further linking this to how energy and matter behave on Earth as well as in space. Her

approach suggests that she is not simply marching through a prescribed curriculum with little thought to learning; she is able to "aim for surface and deep outcomes," an identified mind frame characteristic of expert teachers (Hattie, 2009, p. 5). In fact, in a large-scale comparative study of teachers who obtained National Board Certification (NBC) and those who applied but did not earn certification, the differential was their relative ability to move their students from surface to deeper learning (Smith, Baker, Hattie, & Bond, 2008). Although 74% of their students' work for NBC teachers was at the deep and transfer levels, only 29% of the

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teachers was at the deep and transfer levels, only 29% of the student work submitted by noncompleters represented deep learning. In other words, experience only does not equate to expertise. Expert teachers have high expectations for their students and understand how to deepen knowledge.

#### **Know How Students Learn**

Earlier in the chapter, we introduced *pedagogical content knowledge*, which describes a teacher's ability to translate subject matter knowledge through pedagogy, that is, instruction. Teaching K–12 students effectively demands knowledge of child and adolescent development, as well as an understanding of how people learn. Although the concept of the blank slate has long been disproved, the lecture remains a primary approach to delivering content in some schools. But simply telling students is not the same as teaching them. People learn through a variety of channels, including demonstration and modeling, guided instruction, collaboration with peers, and opportunities to expand their learning independently, a system referred to as a "gradual release of responsibility" (Fisher & Frey, 2014). The good news is that the national Student Voice data suggest that the teaching methods used by teachers are varied, with 74% of high school students reporting that their teachers "present lessons in different ways."

Simply telling students is not the same as teaching them. Expert teachers inspire a level of psychological and emotional security among their students. They acknowledge that the learning at times will be difficult, but their students know they are in good hands. Hattie (2009) calls this "teacher credibility," and with an effect size of 0.90, it has an impressive impact on student learning. The four dimensions of teacher credibility are

- Trust in the teacher.
- The perception that he or she is competent. "One of the factors that increases trust is competence. We trust people who know what they are talking about and who deliver on what they promise. Students will be more inclined to trust teachers who provide the instruction and feedback they need to succeed" (Knight, 2016, p. 198).
- **Dynamism.** This is demonstrated by one's enthusiasm for the content. Sadly, only 38% of students report that teachers make school an exciting place to learn. And here's where relationships come in again.
- **Immediacy**. This is the ability to make connections with students using many of the interactions profiled in the last chapter in the section on Teacher Expectations and Student Achievement (TESA).

Your believability and authenticity are in play every moment of the day, and students are excellent barometers of credibility.

In this section, we will spotlight three concepts we consider to be crucial in thinking about the overlap between teachers and the content:

- The ability to perceive content through the eyes of learners and respond accordingly through pedagogical content knowledge and **noticing**
- 2. An understanding of students' **prior knowledge** and the ability to leverage it for new learning
- 3. The belief that **errors** play an important role in learning and the teacher's stance toward seeking out and celebrating errors as opportunities to learn

#### **Teacher Noticing**

Teacher noticing is the ability to

- Notice the perspective of a student's thinking
- Interpret it as an indicator of what he or she knows
- Respond accordingly to advance his or her knowledge

But teacher noticing can be limited by what is known as the "expert blind spot." In a study that has been replicated several times, Nathan and Petrosino (2003) surveyed the understanding of early career secondary mathematics and science teachers about their students' foundational knowledge. These content experts had difficulty perceiving the school an exciting cognitive trajectory their students needed to follow, relying instead on formal, abstract reasoning to introduce concepts. The researchers referred to this phenomenon as the "expert

Only 38% of students report that teachers make place to learn.

blind spot . . . that can lead people to assume that learning should follow the structure of the subject matter domain rather than the developmental needs and learning profiles of novices" (p. 909). In other words, a teacher's subject matter expertise is not sufficient. The fact is that these teachers, although well-versed in their disciplines, had forgotten what it was like to be a novice to the content. Expert teachers understand the learning perspectives of novice learners, notice their misconceptions, and are able to scaffold their understanding using concrete representations of concepts. It should be noted that the expert blind spot findings were similar among English language arts teachers (Grossman, 1990).

The expert blind spot can leave students feeling—incorrectly—that they are not able to master the content. However, it is not because they can't grasp the material, but rather that the teacher's insufficient pedagogical content knowledge obscures his ability to see it through his student's eyes. On the other hand, teachers who are able to do so regularly employ the habit of noticing (Jacobs, Lamb, & Philipp, 2010). The ability to interpret students' cognition, including misconceptions and naïve understandings, and craft responses is a hallmark of an expert teacher. It's the assumption that what a child does, says, or writes makes sense, given what she currently knows. The teacher's purpose, then, is to rapidly hypothesize what gaps might exist and offer questions, prompts, or cues that move the student forward (Fisher & Frey, 2010). These interactions, which are primarily dialogic, form the core of formative assessment.

Kindergarten mathematics teacher Samantha Brownstein works with her student teacher, Jonas Lincoln, to develop his noticing skills. Ms. Brownstein presented the following problem to her students:

Ava wants to make fresh orange juice for her family. She has 6 oranges. She needs 10 oranges. How many more does she need?

Ms. Brownstein was interested in seeing how her students might apply their mathematical thinking to solve this unfamiliar problem. When planning the lesson, she explained to her student teacher, "I'm curious to see whether they use the 10-frame we've been working with this year [a mat and counters with 10 boxes] and how they process the word *more*."

Mr. Lincoln was puzzled by this. "Well, it's a subtraction problem, right? So they should be able to start with 10, take away 6, and come up with 4 as the answer."

Ms. Brownstein said, "Yes, you're right because you're thinking like a math expert. But they don't have those same formal logic skills. In their limited experience, 'more' means that you add. I anticipate that most of them will say 16 because they'll add the two numbers together. But there's some algebraic thinking that needs to happen. If that error happens, what would you deduce are the reasons?"

Mr. Lincoln thought for a moment. "So the problem is that they aren't seeing 'more' in the context of the problem. Using the 10-frame might help them visually represent the problem."

Ms. Brownstein replied, "There you go! That's what I want you to notice in this lesson. Not just *what* they are doing incorrectly but *why* they are doing it. It doesn't make sense to teach them the algorithm before they understand the concept. Based on what we see from our students, we'll go from there."

#### **Prior Knowledge**

Each student comes to the classroom with a host of experiences and knowledge, from both in school and out. Effective teachers actively seek an understanding of their students' prior knowledge, knowing that it is foundational to new learning. But it is more difficult to leverage students' prior knowledge if your relationships with them are not strong, if only because you have limited connections to them. In the last chapter, we discussed the importance of demonstrating interest in students' lives, which is an important source of information for gleaning past experiences. Their prior content knowledge is an equally important tool for developing student learning. Teachers can use a variety of tools, such as surveys and anticipation guides, to garner information about what students already know before a new unit of study is introduced.

Middle school English teacher Latrelle Peterson **surveys** her students regularly to find out information about their prior knowledge. "The students in my class are coming from seven different elementary schools, so I don't have a good handle on what they've done," explained Ms. Peterson. "So I start out the year with a survey on the learning management system for the class." Her first one, featured in Figure 3.2, asks students about their experiences with books that have been made into films. "It gives me something to immediately begin talking about with them, but it also lets them know that these stories came from somewhere. A lot of them are surprised that there's a book. That gives me a way to introduce them to some new reading," she said.

High school biology teacher Jorge Ramirez uses **anticipation guides** before a unit of study to learn about his students' prior knowledge. His anticipation guides usually feature between 5 and 10 statements about concepts related to the upcoming unit. Some of these statements are true, while others are false. "I don't get hung up on the technical details that I know they haven't learned yet, like the definition of an unfamiliar scientific term. But I do want to know about their understanding of major biological concepts," said Mr. Ramirez. Before teaching a unit on ecology, he posed statements that asked students to predict whether the population of a species would increase or decrease based on resource availability, population size, and density. "I get to see how it is that

## **ENGLISH CLASS SURVEY**

	I have read this.	I have seen a movie version of this story.	I haven't read or seen it yet.
Hugo			
The Giver			
Hunger Games			7,0
Stuart Little			
Charlotte's Web			00
Little Women			
The BFG			
Charlie and the Chocolate Factory (Willy Wonka)			
I, Robot			
The Martian			
The Princess Bride			
The Jungle Book			
Harry Potter			
The Book Thief	1/19		
How to Train Your Dragon			
Diary of a Wimpy Kid			
The Chronicles of Narnia			

Figure 3.2



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they're using what they already know to reason these scenarios," he said. "There's no grade, of course. They've come to expect that this is the way I kick off every unit."

#### **Errors in Learning**

Among the major achievements of the last decade is a growing appreciation for the role of errors in learning. The work of Dweck (2006), in particular, has assisted the field in understanding that errors are evidence of learning and that our responses to them contribute to a student's fixed or growth mindset. A student has a growth mindset when he or she understands that learning requires effort and that the learning process will include setbacks as he or she moves to mastery. A fixed mindset undermines his or her beliefs about learning, as the student attributes success to innate abilities, rather than effort. But it is important to say that these two constructs are on a continuum and are not an either/or proposition. All of us veer between these two mindsets, and they are situational. In other words, none of us is permanently in one corner or the other. Students aren't transformed into a growth mindset simply because we shift our praise from a focus on results to one on effort (although that is a good start).

Dweck (2006) cautions that all of us have triggers that send us back to a fixed mindset, such as trying something that is really outside our comfort zone. Therefore, being sensitive to what triggers a child, and then helping that student process it, is going to be more useful than just exhorting students to try harder. Our responses to their errors inform students about our belief in them. Thirty-three percent of students are afraid to try something new if they think they might fail. Supporting students in developing a growth mindset will help them embrace errors as an important part of the learning process.

High school mathematics teacher Kendra Gordon watches for such triggers with her students. "I get some kids who just freeze up when it comes to math," she said. "The mere mention of quadratic equations, and they've got this look of terror in their eyes," she said. Ms. Gordon began conferencing with her students a few years ago to help students move through these triggers. "Sometimes it's just a conversation about

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33% of students are afraid to try something new if they think they might fail.

something in their math past that we need to unpack," she said. "More often, we talk about what to do when you're stuck." Ms. Gordon makes sure that all her students have strategies for moving forward when

they're stuck. "I model how I get stuck, and unstuck, as I confront problems and remind myself that some problems are going to take some time to resolve," she said. "I've also restructured my math classes so that we spend lots more time working collaboratively in small groups on rich mathematical tasks."

Ms. Gordon reinforces the role of errors as a necessary part of learning. "I remind them that we can either fail or fail forward. If we give up, all we've done is fail. End of story. But if we regroup and look at what went wrong and why, we can use it to figure out a new approach." The math teacher uses a technique called

"My favorite mistake" several times a week. "I post problems that were solved incorrectly but had some great math concepts in use." Using an anonymous student's error, she and her class discuss what the mathematician did correctly and incorrectly and why that might have occurred. "It's shifting their perceptions about math, in that they can see that it's not just about whether the final answer was correct or not. It's appreciating all the sound mathematical thinking that did occur, too. Sometimes I use my own errors as examples." The teacher said that she is heartened by her students' responses. "There are times when a student will say, 'Hey, that's mine!' and it's said with confidence, not with shame."

Thus far, we have discussed two of the four major concepts related to clarity in this chapter: teachers know what students should learn, and they have knowledge of how students learn. In the next section, we turn our attention to the third, which is communicating to students what they are learning, why they are learning it, and how they can gauge their own progress.

# Know How to Communicate What Students Will Be Learning

While reviewing research for the development of this book, we read a 2013 article in a peer-reviewed journal for college professors about ways to engage their students. We were struck by statements in the article that suggested it was essential to "keep students on their toes" by making their classes "unpredictable" to create "suspense and curiosity." We don't agree. Yes, classes should not be mundane and rote, such that every day feels like the same old slog. And there's nothing wrong with letting some activities be a surprise. But "unpredictable" seems to be about the worst descriptor of a classroom. It's in direct opposition to clarity. Students should always have a clear understanding of what they are learning and how they will be learning the content. Without this, we risk turning our students into passive, rather than active, learners.

#### **Establishing Purpose**

There are many purposes for learning that can be included in a lesson. Often, they are posted in classrooms so that students can refer to them throughout the lesson. As noted earlier in this chapter, purpose statements consist of three parts: the content purpose, the language purpose, and the social purpose. At a glance, students can preview the focus of the lesson even before class has started. However, posting is only the beginning. Each lesson includes time when the purpose statements are discussed, with conversation about tasks and activities associated with the purposes. Purpose statements are not agendas, which are schedules, although many teachers use both. But an agenda alone does not adequately communicate the learning intentions, instead leaving it up to the student to infer meaning. Purpose statements, on the other hand, communicate the learning intentions and serve a cognitive priming function as they alert the student to what will follow. Whenever possible, let students know how the concepts they are learning transfer to their life beyond school. Currently, 67% of students believe what they learn in school will benefit their future, a statistic we are certainly looking to increase. It should be noted that cognitive priming assists learners in transfer, a major goal of education (Wexler et al., 2016).

In addition to discussing the purpose statements at the start of the lesson, they should be reviewed when the class transitions between tasks. In the hurry to physically move to another area of the room,



Video 8 Establishing Purpose

resources.corwin.com/ engagementbydesign or cognitively to a different task, students are often more focused on the directions and logistics, rather than the learning. Before releasing students to their collaborative groups, fourth-grade teacher Deanna Lockwood returns to the purpose statements:

Remember what you're learning about today. We're learning about our state's history in this unit, and our content purpose today is to identify the ways humans altered the physical environment to meet their need for shelter, food, and security. Your language purpose is for your group to provide at least three examples in a paragraph of how native peoples and early settlers did this. That means your social purpose is to reach consensus about the three examples your group will be submitting. I want you to compare your results with the stated purpose and ask yourself whether you have achieved this. Because this is a 20-minute activity, I'll set the timer so you can pace yourselves. I'll be sitting in on each of your groups during this time.

In doing so, Ms. Lockwood reinforces the learning intentions of the lesson and shifts their attention from compliance and task completion to metacognitive reflection. Later, after the children have reassembled as a class, the teacher returns to the purpose once again, this time as part of the closure. She reviews the statements, asking students to consider their own learning.

"We call them Minute Notes," she said. "I have them write their name on a sticky note and answer three questions. The first is for them to write about something new they learned in today's lesson. The second is a question they have about the content, language, or social purposes. The third is to write down anything they don't understand." Ms. Lockwood has a poster in the room with each child's name labeling a grid. "They post their sticky notes on the poster where their name is, and at a glance I can get a sense of what they know and still don't know. I usually review it when they're at recess and sort the notes into piles so I remember who I need to follow up with. I get quick info to plan tomorrow's lesson."

#### **Giving Feedback**

Communication about what is being learned doesn't begin and end with purpose statements. The ongoing feedback students receive serve as course correctors on their learning journey, guiding them back to the path when needed and altering the pace to match their progress. The effectiveness of feedback on student learning is large, at 0.75 (Hattie, 2009). Feedback about the cognitive and metacognitive processes students are using and the tasks they are completing will scaffold their learning. But feedback additionally signals to the student that he or she is worthy of the teacher's time and attention and the teacher believes in the student's learning potential. Your optimism and respect for students, as well as your high expectations for them, communicate your personal regard for them.

Students value the feedback they receive from teachers. In a 2016 poll administered by Gallup and the Northwest Evaluation Association, 74% of students in Grades 5 to 12 said that feedback in the moment was very helpful for their learning. But there is variance in the relative effectiveness of that feedback. *Timeliness* is essential, as feedback quickly grows stale. When it comes weeks after a written essay has been submitted, the feedback is nearly useless to the learner. The feedback should be *actionable*, meaning that the student is able to do something as a result. Feedback on a final assignment for a unit when further submissions are not possible is not useful. Far better to

in Grades 5 to 12 said that feedback in the moment was very helpful for their learning.

74% of students

invest the time in providing feedback during development of the essay or project. Saving it for the end isn't feedback—it's evaluation. We used to make this same mistake, saving our very best feedback for the final product. Not only did it take seemingly forever to grade the assignments, but also the feedback we provided was neither actionable (as the assignment was done) nor useful (because there was little opportunity to apply it). We now use checklists to give rapid feedback during their drafts, and we save the grading (not feedback) for the final paper. In addition, the feedback should be *understandable* to the learner. When the feedback is developmentally or cognitively beyond the student's level of understanding, the feedback is not useful. (Think of those bewildering computer error messages you sometimes encounter. Here's our favorite: "Error Code 10: The

Feedback signals to the student that he or she is worthy of the teacher's time and attention and that the teacher believes in the student's learning potential.

environment is incorrect." What does *that* mean?) Finally, the feedback should reference the *goals* of learning. Therefore, linking the feedback to the purpose provides the student with a rationale for the feedback. Feedback that is timely, actionable, understandable, and goal-referenced gives the learner a path for improvement (Wiggins, 2012).

Feedback works on four different levels:

- **The task.** Provides the learner with information about the task, including whether it is correct, and gives directions such as, "You will need to add a transition sentence at the end of this paragraph."
- **The process.** Gives the student insight about the process being used. Adding the phrase "so your reader will know what to expect next in your essay" to the previous feedback example gives the student feedback about the task and the process she or he is using.
- **Self-regulation.** Focuses attention on the student's use of self-regulatory skills. "As you re-read what you've written so far, compare it to the outline you made. Are you hitting your main points?" reminds the learner about her or his ability to utilize strategies to achieve goals.
- **About the person.** Feedback about the person, often in the form of praise ("Nice job!"), is the least effective of all. In contrast, feedback about process and self-regulation are the most effective kinds (Hattie & Timperley, 2007).

Much of the feedback offered to students comes in the form of in-themoment conversations. But this can be a hit-or-miss proposition, as some students remain under your radar. Seventh-grade social studies teacher Tom Zhang tracked his own feedback habits over the course of a week and noticed that there were some students in each class period who rarely received any.

"That's when I decided to start conferencing with them," he said. Mr. Zhang explains that his class does quite a bit with document-based questions, especially for short constructed responses. "The kids work at their tables collaboratively to discuss the primary source documents. But what I've started doing is conferring with individual students

during this time. It's a writing conference, but it's focused on their constructed responses."

The teacher offered that he had developed any number of checklists and rubrics, but his students didn't seem to use them all that often. "I'm really focusing on self-regulation skills this semester. I want them to get

more skilled at using these tools so they can measure their own progress toward goals." Mr. Zhang uses his daily purpose statements as a way for students to link what they are doing with what they are learning. "Those [purpose statements] really help for keeping them on track—and keeping me on track, too. They remind me to target my feedback so that it aligns with the goals."

## Know How to Develop Success Criteria

Mr. Zhang's emphasis on feedback about self-regulatory behaviors is consistent with the fourth assumption about teacher clarity: that teachers and students understand what success looks like. Eighty-six percent of students report that they want to do their best at school, but in focus groups we often hear students express a need for increased clarity regarding expected outcomes. "I am just not sure what my teacher wants from me." "It is so hard to have seven different teachers and all of them expect different things." And one of our personal favorite responses, "Trying to get an A is like peeing in the wind . . . you just go for it and hope for the best."

86% of students report that they want to do their best at school, but in focus groups we often hear students express a need for increased clarity regarding expected outcomes.

Feedback is the effort to close the gap between current performance and desired outcomes. But feedback is far less effective when students are not clear on what those desired outcomes are. Termed *success criteria*, desired outcomes are concrete and demonstrable and are used by students to set goals and monitor their progress. Student goal setting is a powerful means for increasing student achievement; with an effect size of 1.44, it triples the speed of student learning (Hattie, 2012). It is heartening to hear that 85% of the high school students in the Student Voice database report that "getting good grades is important to me." But grades alone serve as poor success criteria, and in fact they can interfere with student goal setting.

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There's a difference between "I want to get an *A* in Math" and "I want to get really good at factoring polynomials because chemistry requires it." The first is a performance goal, which has its limitations because its focus is on demonstrating competence to others, rather than learning. Under the worst of circumstances, a focus on performance goals is associated with cheating (Midgley, Kaplan, & Middleton, 2001). The second is a mastery goal, in which the student's focus is on the acquisition of a skill or set of knowledge. To use another example, it's the difference between passing a world language course and actually learning how to speak a new language. Schools are predicated on grades as performance goals, but grades are best augmented by mastery goals that spotlight the learning.

Mastery goals should not be so lofty that they are seen as nearly unattainable for students. To be able to explain the role of incentives and scarcity in a market economy is too distant a goal for a third-grade student and not of much use to her. However, a mastery goal of being able to explain concepts of scarcity in the story *The Hard-Times Jar* (Smothers, 2003) is attainable. Teachers of younger children often rely on "I can" statements to make mastery goals more concrete for students. Therefore, "I can explain how scarcity affects Emma's decisions" is a student-friendly version of success criteria.

Teachers share success criteria with students through

- Exemplars
- Modeling
- Negotiation

Eighth-grade science teacher Jeremy Hopkinson keeps *exemplars* gathered from previous years to show his students how lab reports are constructed. "I make sure to show them a range of quality, so they can see what constitutes successful and less than successful lab reports," he said. His grade-level colleague Monique Obonyo uses anchor papers identified by her state department of education for her English students.

A second method is *modeling and demonstrating* how you as a teacher make decisions about quality. Kindergarten teacher Linda Jamison used



Video 9
The Importance of Success Criteria

resources.corwin.com/ engagementbydesign samples illustrating stages of writing development that were in her commercial language arts program to make a large developmental writing continuum, and she displayed it at eye level for her students to use. "I meet with students during our conferences and we look at the 'writing

wall' together," she said. "With my help, the children place themselves on the writing continuum, and then we talk about their next goal. Right now I've got a number of them who are paying attention to the space they leave between words."

The third method, negotiation, is useful when you want to develop success criteria in partnership with students. Ninth-grade students in Walt Connelly's science class developed success criteria for designing an automatic dog feeder. Mr. Connelly collaborated with the class to develop agreed-on indicators of a successful project: consistent amount and timing of feedings, easy for the dog to operate, a storage system to keep the food fresh, sturdy enough to withstand a pet's physical contact, and a cost of no more than \$25.00 in materials. "This gave them a way to begin considering what qualities would make for a good automatic dog feeder, rather than me just doing the thinking for them. The only item I specified was the budget because that's how much they're allocated," the teacher explained. "But the 30 minutes or so that we took to develop this success criteria at the onset of the project was well worth it because it got their wheels turning."

85% of the high school students in the Student Voice database report that "getting good grades is important to me." But grades alone serve as poor success criteria, and in fact they can interfere with student goal setting.

#### **Rubrics and Checklists**

The examples of success criteria in the previous section fall into two categories: rubrics and checklists. These are tangible items that students can reference as they measure their progress toward goals. Rubrics can be either holistic or analytic, and they may be task specific or general. A holistic writing rubric will provide a point scale, often four points, with each level describing the overall quality. Holistic rubrics are used more often for large-scale assessments, as their drawback is that they do not provide specific feedback to the learner. They can be difficult to use for assessment purposes, especially when the characteristics of a student's work span more than one category. Figure 3.3 has an example of a holistic rubric.

## HOLISTIC ARGUMENTATIVE WRITING RUBRIC

4 Advanced	Essay has a clear focus, with multiple supporting details aligned to each claim.  Each claim is logical and is consistent with the overall purpose. There are few or no spelling or grammar errors that interfere with meaning.
3 Proficient	Essay has a focus, and there is at least one supporting detail for each claim. The argument is logical but lacks some transitions or enumerations to support the reader's understanding. There are few or no spelling or grammar errors that interfere with meaning.
2 Developing	The purpose is somewhat unclear and is left to the reader to infer. There is a least one supporting detail for each claim. There is a logical order to the information, but there are few enumerations or transitions. Some spelling or grammatical errors interfere with meaning and clarity.
1 Needs Improvement	The purpose is unclear, and the logic of the claims is disorganized. Some claims do not have supporting details. The number of spelling or grammar errors significantly interferes with meaning and clarity.

Figure 3.3



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Most classroom rubrics are analytic; they allow for a deeper look at specific criteria. These rubrics are more useful for feedback, especially formative assessment, as they provide the teacher and student with means for discussing elements that are meeting expectations and the next steps for improvement. An example of an analytic rubric appears in Figure 3.4. This citizenship rubric is used at the middle and high school where three of us work. This rubric provides the student, teacher, and sometimes the family with a shared understanding of the social and behavioral expectations of a successful student. We encourage students to use rubrics for academic and nonacademic purposes to regularly self-assess their progress toward goals. For example, a writing rubric takes on far more meaning for a student when she is asked to score it herself and attach it to a draft. This gives the teacher insight into how that student's perception of her status and progress align with the teacher's expectations.

Checklists offer a simpler format for a student to ensure that she has included all the elements of a project or assignment. Checklists can be task specific, as was the one developed by Mr. Connelly and his class for the automatic dog feeder. Because these are a yes/no format, the feedback about the quality of an item is less apparent, although it can signal to the learner when something has been omitted or is of an insufficient quantity. Again, these are best used by students first, as they build self-regulatory habits such as reviewing work and comparing it to criteria.



#### Video 10 Feedback

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#### **Formative Evaluation**

Purpose statements, feedback, and success criteria are contributory components to a formative evaluation system. Although sometimes narrowly understood as benchmarks or interim assessments that happen two or three times a year, formative evaluation occurs with much greater frequency, often daily. Daily purpose statements and exit slips or other end-of-lesson reflections, like the minute notes Ms. Lockwood uses to bracket each lesson, provide information that teachers can use to plan "next steps" lessons. Formative feedback, both verbal and written, moves students forward throughout the lesson as they approach success. The methods used to check for understanding throughout include noticing student cognition and responding with questions, prompts, and cues, a hallmark of an expert teacher (Jacobs et al., 2010).

## **CITIZENSHIP RUBRIC**

To receive a score, the student meets several, but not necessarily all, of the following criteria:

	Excellent	Good	Needs Improvement	Unacceptable
	Responds positively to and takes action on feedback.	Responds positively to feedback and frequently takes action on it.	Inconsistently responds to and takes action on feedback.	Regularly struggles with feedback and/or fails to take action on the feedback given.
Welcome	Demonstrates and models leadership qualities in the community (e.g., verbal and nonverbal communication is welcoming; encourages others to be welcoming; mentors others to foster a welcoming environment).	Demonstrates a welcoming attitude toward others (verbal and nonverbal).	Welcoming attitude is demonstrated at times (e.g., verbal and/or nonverbal communication is at times less welcoming).	Makes others feel unwelcome.  Refuses to help others when requested; disrupts others and/or the learning environment.
	Actively seeks out interaction with adults.	Interacts with adults regularly and occasionally initiates contact.	Interacts with adults positively when approached, but rarely initiates contact.	Avoids contact with adults.
	Demonstrates concern for others and the learning environment and models leadership qualities that improve circumstances.	Demonstrates concern for others and the learning environment and follows the lead of others to improve circumstances.	Often demonstrates concern for others and the learning environment.	Repeatedly does physical, verbal, or emotional harm to others and/or the learning environment.
Do No Harm	Consistently and actively participates in, and at times leads, the restorative process (circles, conferences, etc.). The contributions are insightful and advance the discussion.	Consistently and willingly participates in and contributes meaningful ideas to the restorative process (circles, conferences, etc.).	Participates in the restorative process (circles, conferences, etc.).	Significant disruption to the community resulting in harm (restoring harm to those hurt can result in change in citizenship).  Rarely or unwillingly participates in the restorative process
	Seeks adult assistance and intervention to prevent harm.			(circles, conferences, etc.).

Figure 3.4

	Excellent	Good	Needs Improvement	Unacceptable
Do Not Harm (continued)	Consistently presents own work in class and encourages academic honesty in the learning community (e.g., does not allow others to copy his or her work, counsels others to make ethical academic decisions).	Consistently presents own work in class and contributes to an ethical learning environment (e.g., does not allow others to copy his or her work).	Inconsistently presents own work in class and occasionally contributes to an ethical learning environment (e.g., does not allow others to copy his or her work).	Submits plagiarized or copied work in class and/or allows others to copy his or her work.
Do Not	Consistently follows courtesy policy in regard to use of personal electronic devices and anticipates when and how these PEDs are best used.	Consistently follows teacher directions regarding use of personal electronic devices.	Occasionally needs reminders or redirection regarding the use of personal electronic devices.	Repeatedly uses personal electronic devices despite teacher reminder and redirection.
	Consistently influences others by modeling positive and appropriate language.	Often models positive and appropriate language.	Demonstrates understanding of appropriate and kind language and strives to use it.	Frequently uses language that degrades or belittles self or others.
Choice Words	Consistently communicates kindly with peers both in and out of the classroom.  Consistently uses academic language to express ideas in class discussions.	Often communicates kindly with peers both in and out of the classroom.  Strives to use academic language to express ideas in class discussions.	Occasionally uses language that degrades or belittles self or others, or is inappropriate for school, but understands its effects and consequences.	Regularly uses inappropriate language (language that is not well-suited for school or academic settings).  Remains unaware of or resistant to the effects and consequences of harsh language despite adult guidance.
Never Too Late to Learn	In attendance 95% or more of the time. Sets a scholarly example through careful preparation for learning (e.g., completing assignments, anticipating topics, bringing additional	In attendance 95% or more of the time.  Comes to class on time and prepared intellectually and organizationally to learn (e.g., completed assignments, materials,	In attendance 95% or more of the time.  Usually comes to class on time and prepared to learn (e.g., completed assignments, materials, completed	In attendance < 95% of the time.  Often unprepared to learn without assignments completed.  Often out of class for prolonged periods of time, negatively impacting

(Continued)

## (CONTINUED)

	Excellent	Good	Needs Improvement	Unacceptable
	materials to contribute to class discussion).	completed out-of-class readings for discussion).	out-of-class readings for discussion).	his or her individual learning and that of the group.
	Reliably present throughout class and makes decisions to minimize impact of brief time out of class.	Frequently present throughout class and often makes decisions to minimize impact of brief time out of class.	Usually present throughout class, although impact of time out of class is sometimes prolonged and requires teacher redirection.	Attitudes and/or contributions are counterproductive to the group and the learning environment.
arn (continued)	Constructive in groups as a member, regularly serving as a leader and promoting and supporting the leadership of others.	Constructive in groups, sometimes as a leader and consistently as a member.	Constructive in groups as a member.	Routinely inattentive to class discussions; rarely participates; often offers information that is off topic.
Never Too Late to Learn (continued)	Can be relied upon to contribute to discussions to advance the learning of self and others by posing questions and making connections to other disciplines and subjects.	Frequently contributes to class discussions in ways that advance the learning of self and others, occasionally posing questions or making connections to other disciplines and subjects.	Often contributes pertinent and on-topic information to class discussions.	Avoids accepting challenges. Needs to be reminded to get help when needed. Gives up easily. Does not take advantage of help offered.
	Reliably seeks resources or academic assistance independently in order to persevere (additional materials, academic recovery, tutoring, intervention, office hours, homework completion, etc.).	Frequently seeks resources or academic assistance with little or no prompting, in order to persevere (additional materials, academic recovery, tutoring, intervention, office hours, homework completion, etc.).	Needs prompting and encouragement to seek resources or academic assistance in order to persevere (additional materials, academic recovery, tutoring, intervention, office hours, etc.).	Needs continuous redirection and/or attention. Routinely needs to be reminded to put non-classroom materials away and return to a learning state.



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Ongoing formative evaluation is essential for teacher clarity. The responses, insights, and behaviors of students should rightly be seen as feedback *to* the teacher. It is difficult to imagine how a teacher would be able to adjust the pacing, content, and instruction of a unit of study without closely observing how students are responding. Formative assessment practices and pedagogical content knowledge have a reciprocal relationship (Falk, 2012). In other words, teachers simultaneously build and utilize formative assessments and pedagogical content knowledge to strengthen both.

Importantly, this information is then used to guide the next learning expectation. It's a never-ending cycle, with teachers identifying gaps in students' knowledge and performance, establishing learning expectations, designing lessons and tasks, monitoring success, providing feedback, and then taking action based on the results. Unfortunately, in too many classrooms, there are gaps in this system. And when there are gaps in teacher clarity, student learning suffers.

Conclusion

The intersection between the teacher and the content is an important consideration in student engagement. As we noted in the previous chapter, relationships are critical for students' learning. In this chapter, we focused on the value of teacher clarity. Both are important for students to learn. But the four components of teacher clarity are not always in sync. In some places, teachers do not know what students need to learn, either because they don't know their students' strengths very well or because they don't understand the standards. In other places, teachers need to focus on the evidence regarding how people learn. In still other places, teachers need to communicate the learning expectations to students so that they share in the responsibility for their learning. And finally, in some places, success is not clearly defined for teachers or for students, and they trudge along assuming that the tasks they complete will result in successful learning. These four aspects of teacher clarity deserve attention and are fairly easy to implement. In the next chapter, we focus our attention on the third piece of low-hanging fruit: challenge. As we have noted before, taken together, relationships, clarity, and challenge create engagement in students and teachers that results in better learning for everyone.

Formative evaluation occurs with great frequency, often daily.

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