The Acceleration Framework

Accelerating students is not pre-teaching; that risks tedium. Rather, it is an enriching experience designed to stimulate thinking, develop concrete models, introduce vocabulary, scaffold critical missing pieces, and introduce new concepts just prior to acquisition of new learning. Students are provided with just enough prior knowledge to latch on more readily to new concepts. There is a symbiotic, complementary relationship between "the core" and "the more"—that is, the core content and the supplemental learning and support provided by acceleration. The core and the more share the single purpose of helping students master standards the first time.

The acceleration model includes several crucial components, which I have developed as six steps over time, first through my work with my own students and later through my work with numerous schools tweaking the acceleration model. Each step is essential to student learning and motivation.

Step 1: Generate Thinking, Purpose, Relevance, and Curiosity

One or two days before the core class begins the concept or standard, acceleration begins with a thought-provoking, hands-on activity that encompasses the big idea of the standard. Typically working in small groups or pairs, students explore the new concept by generating their own formulas, developing ideas, discovering patterns, discussing observations, or examining the content's real-world relevance. In math or science, the teacher can use some of this time to develop concrete representations before embarking on abstract ideas. In all content areas, this step speaks to students' need to answer the question "What does this have to do with me?"

Success starters, which vary by standard and content area, are a good way to get students to plunge into the new content and gain curiosity and confidence. Here are some examples (see Chapter 3 for a more in-depth discussion of success starters).

In math, students could

- Use string to measure the circumference of a jar lid, then discuss the relationship of the circumference and the diameter using the string as a guide.
- Go on a scavenger hunt for items with surface area.
- Sort angles by similarities or differences.
- Read a picture book about fractions.
- Spin a game spinner and then discuss why the game may not be fair and determine what would make it fair.

In science, students could

- Draw items from bags, determine which ones they believe are renewable and which ones are nonrenewable, and explain their reasoning.

- Choose a pretend animal from a grab bag and brainstorm how their animal may adapt physically and behaviorally to changing environmental conditions, such as a drought or flooding.
- Respond in writing to pictures of earthquake damage.
- Watch the weather report and jot down vocabulary used.
- Tour the school as environmentalists searching for evidence of the building's carbon footprint.

In social studies, students could

- Develop their own Bill of Rights.
- Create a rapid-fire list of everything they know about government at any level.
- Examine websites of local banks and list common characteristics.
- Respond to a slideshow of images from World War I using just adjectives.

In language arts, students could

- Watch a short clip of a cartoon that uses alliteration and jot down examples.
- Identify elements of a story in a piece of literature similar to one that will be studied in class.
- Piece together a sort of the parts of an essay.
- Create a sort on tricky verb conjugations.

Why step 1 should never be skipped: Students who struggle academically are more likely to shut down on concepts that they perceive as irrelevant. Their motivation to work increases in direct correlation with their perception of the content's value and interest level. Right out of the gate, success starters create value, relevance, and interest and foster both motivation and long-term retention of content.

Step 2: Clearly Articulate the Learning Goal and Expectations

The placement of this step is quite purposeful. Step 1 showed students the real-world relevance of the new concept and triggered their curiosity. By step 2, their brains should be primed for the teacher's introduction of the learning goal—for example, "What we just explored is actually the first part of the standard we'll be learning" or "In 40 minutes, you will be able to compare and contrast the core, the mantle, and the crust."

Explicit learning expectations are essential, but students often lack clarity about what they are studying. Learning goals are the basis of student learning, and this step is too important to rely on a wordy posted standard. Leahy, Lyon, Thompson, and Wiliam (2005) concur that simply posting a standard is rarely successful because standards tend not to be written in student-friendly language. Stiggins (2007) holds that standards should be deconstructed into classroom targets that unfold into opportunities for daily formative assessment. Personally, I advocate for standards walls (discussed further in Chapter 2), which provide a visual avenue for articulating the patterns of standards. Standards walls help clarify for students the progression of learning—how separate goals crescendo into an understanding of the big picture of a concept. Providing these patterns for learning has an additional benefit: Willis (2006) explains that delivering new information to students in a way that

builds connections to other learning enhances brain cell activity, leading to improved long-term memory and retrieval.

Why step 2 should never be skipped: All students, but particularly those at risk of failure, benefit from explicitly stated, student-friendly learning goals. Vague references to academic expectations have little value. Without specific goals, students can lose sight of the purpose of learning, and class becomes a blur of papers and exercises to complete rather than a logical progression of learning that leads to an important goal.

Step 3: Scaffold and Practice Essential Prerequisite Skills

(*Note: steps 3 and 4 can be switched in sequence or taught in tandem.*)
After step 2, acceleration pauses as students briefly move backward to remediate the deficits that would present a barrier to learning the new standard. To edit a potentially long list of gaps, complete the following statement:

Students could master the new standard if they just knew _____.

Next, start filling in the high-priority gaps you identified. For example, if knowledge of integer rules is essential, have students create bookmarks listing integer rules and then provide guided practice reviewing integers. If students need to be able to multiply decimals, shore up their skills and develop a scaffolding device, such as a cheat sheet with an example. You can create these scaffolding cheat sheets with examples of anything students need reinforcement in, such as parts of speech or types of sentences (simple, compound, and complex). If a separate teacher is providing acceleration, the regular teacher should communicate these essential prerequisite skills so that students can shore up these areas before the lesson.

Figure 1.2 demonstrates judicious use of scaffolding: if students do not remember all of their multiplication facts, you can create a chart that includes just the ones they do not know. As students learn facts, take them off the chart. The purpose of scaffolding devices is to enable students to access the rigor of the standard. Without them, students can get mired in their gaps, and frustration sets in. It's just as important not to provide too much scaffolding, however; keep tabs on each student's progress to get an idea of when you need to reduce or withdraw support.

FIGURE 1.2. Scaffolding Example: Partial Multiplication Table

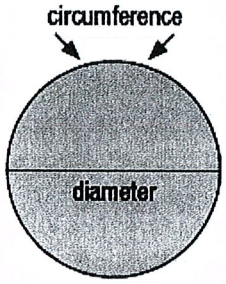
	6	**7**	**8**
6	36	42	48
7	42	49	56
8	48	56	64

Why step 3 should never be skipped: Without this step, students may embark on their work with enthusiasm but use the incorrect integer signs on every answer, or the decimal may somehow fall in the wrong place. All that work and no payoff! Scaffolding prerequisite skills in context allows students to realize success on new content.

Step 4: Introduce New Vocabulary and Review Prior Vocabulary

Because vocabulary understanding is developed over the course of time and is a key component of prior knowledge, acceleration students in particular benefit from rich vocabulary experiences. An effective starting point is to create a *TIP:* a continually growing anchor wall chart that includes vocabulary *terms*, *information* on those terms, and *pictures* of the terms. As words are introduced, they are added to the TIP. The TIP provides a constant reference point for students, so when a student is asked, for example, "What part of a cell is most like the water boy on a football team?" she can glance over at the TIP for guidance. Figure 1.3 shows an example of the TIP process for an acceleration math class. Once the term *circumference* has been introduced and defined, the class would come up with the picture together, with the teacher suggesting, "Circumference is the distance around a circle, so how about we draw a circle with arrows showing circumference?"

FIGURE 1.3. TIP Chart: Math Vocabulary

Term	Information	Picture
Circumference	Distance around a circle	
Diameter	Straight line passing through the center of a circle	

The TIP is a good start, but multiple representations are crucial to build students' deep, sustained knowledge of vocabulary. Jenkins, Stein, and Wysocki (1984) contend that students' sixth exposure to a word is around when they begin to truly internalize and be able to use it. Acceleration gives students a head start on this process.

A key to vocabulary retention is immersing students in hands-on, playful, multisensory vocabulary experiences. During acceleration classes, vocabulary development practices should be memorable, hands-on, and interactive. In Chapter 5, I discuss powerful vocabulary strategies to use in acceleration instruction.

Why step 4 should never be skipped: Providing targeted students with advance knowledge of new vocabulary reaps major benefits in the core class. As the heterogeneous group begins the new unit, acceleration students realize success and gain confidence: "Oh, I know what that word means!"

Step 5: Dip into the New Concept

During the first four steps, students have already begun work on the new concept. They have established the concept's relevance and purpose and have a clear idea of the learning goals. They are shoring up their gaps in prerequisite skills in the context of new learning, and vocabulary development is under way. Now students are poised for going a bit deeper into the new content. This is the part they really appreciate: they get to do some things that their classmates have not even seen yet!

In math, this "dipping in" may amount to some guided practice on whiteboards (used individually or in pairs) calculating perimeter, or a scavenger hunt to locate different angles. In language arts, students may score sample papers using a writing rubric. The science acceleration class might examine pictures of the circulatory system. These activities will not be duplicated in the core class; the repetition would lead to boredom. Instead, the acceleration time sets students up for mastering standards in the core class, so that when a new concept is introduced, students can say, "I know something about that!"

Why step 5 should never be skipped: Students' self-efficacy and enthusiasm soar as they are, possibly for the first time in their lives, ahead of the class.

Step 6: Conduct Formative Assessment Frequently

Because the goal of acceleration is to help students learn content in their core class the first time, it is essential to collect ongoing data of student progress. There should be a continual flow of formative assessment information between the core teachers and the "more" teachers, although the same teacher may serve both roles.

Acceleration lends itself beautifully to ongoing, transparent formative assessment that yields timely, detailed feedback from teachers and peers. Having students hold up their answers on individual whiteboards fits perfectly, as do strategies like sorts and problem solving on sticky notes. Or students can work on chart paper on the floor or at their desks. Essentially, anything that will help teachers continually "see" what students know provides valuable information on where students are and where they need to go. Formative assessment strategies are further explored in Chapter 4.

Why step 6 should never be skipped: Instructional adjustments in acceleration are immediate and ongoing based on student data. This is not a class in which papers are scored traditionally and returned days later. Students targeted for acceleration have an urgent need for real success right now. For that to occur, teachers must use primarily "soft" formative assessment to provide descriptive feedback.

Reflections on Acceleration

In my experience with the acceleration model, I have found that teachers and students alike can feel a strong gravitational pull to revert to remediation. Students may lack confidence in completing homework on their own or need tutoring on current work from the core class. Such bumps in the road can shift the focus from moving

students forward to helping them survive today. Teachers report that when a test is looming, students feel an urgent need for help with preparation and have difficulty focusing on learning concepts beyond the test. In cases when students' need for review or remediation is especially pressing, my advice is to split the time in two: first help students review, and then introduce the next concept.

Accelerating students as a method of boosting academic achievement is as much a shift in mind-set as it is in instruction. It will always be difficult to resist the urge to try to fill in students' gaps and fix, fix, fix everything that went wrong in the past. And it is all too easy to slip back into remedial worksheets when students have so many missing pieces. But don't give in to the temptation. Adherence to the acceleration instructional model is crucial. The model is carefully designed and highly tactical: your goal is to shore up just what students need to be successful on new concepts.

The following section highlights a school whose teachers decided to make the change from remediation to acceleration. The results they observed in their students mirror what I have seen and heard in many schools.

In the fall of 2012, the math teachers at East Jackson High School were ready to try something new. Dissatisfied with test scores from the previous spring, they embarked on a different path to help students who were struggling to master the content.

The biggest change came from Julie Bruce, who taught the support class, or double dose. In the past, she had always provided remediation, typically spending class time helping students with homework and revisiting concepts they had missed in the past. Not this year. She announced to her students, "I'm not worried about what you've already learned; I'm worried about what you're going to learn."

Instead of retreading old ground, Julie began getting her students ready for their upcoming core class. She introduced the new concepts and explained the vocabulary words as they came up, in student-friendly terms. At first, students were a bit wary of the new approach. But soon enough, Julie began seeing positive changes: one student announced, "This is the first day in math class that I wasn't confused!" while another proclaimed, "This is the first time ever in my school career that I could answer questions in math class."

Sandy Akin, one of the core teachers, noticed a change in the confidence level of the acceleration students in her heterogeneous class: they had begun participating more and asking questions. Sandy commented, "These aren't students who misbehaved. If they were lost, they didn't say anything; they just shut down." She attributed their increase in self-efficacy to the jump-start they received in their support class: "After starting acceleration, they came in the room with more confidence."

East Jackson teachers credit ongoing collaboration as a critical component of acceleration in their school. Core teachers quickly discovered that if Julie taught a concept a bit differently in acceleration, it threw students: "That's not how Ms. Bruce showed us!" Accordingly, teachers learned to get on the same page in terms of curriculum pacing, instructional approach to new concepts, and assessment.