Overcoming
TEXTBOOK
FATIGUE

21st Century Tools to Revitalize Teaching and Learning

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Introduction

Textbooks as we know them have been around since the end of the eighteenth century, but if you compare Thomas Dilworth's *The Schoolmaster's Assistant, Being a Compendium of Arithmetic both Practical and Theoretical,* first published in 1773, to a contemporary algebra textbook, you will find few similarities (Dilworth, 1798). Back then, the content was delivered in a question and answer style, mostly for the purpose of memorization. Today, textbooks practically dance on the desk. Despite the evolution, the 21st century brings challenges that publishers could never have imagined twenty years ago, beginning with a ubiquitous source of information online accompanied by a generation of students more comfortable with tapping keys than turning pages. Textbooks are still a mainstay in most classrooms throughout the world, either in print or online, but smart teachers are learning how to use them as one of many resources for a burgeoning curriculum rather than as the single, authoritative source of information to be taught to students.

Contributors to Textbook Fatigue

As a consultant, I have the great fortune of spending a lot of time with teachers (and students) in various situations. It is through my experiences during these collaborations that I coined the term

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"textbook fatigue." Textbook fatigue is more than a "tired of text-books" malaise. It is a weariness with the entire business of using textbooks and programs as curriculum guides, a hopelessness brought on by robotically following both the sequence outlined by textbook publishers and the activities they provide. It is a term that targets scripted programs and step-by-step teachers' manuals that dismiss individualization of schools, teachers, and students. I hope that this book will be an antidote to textbook fatigue and spark a renewed commitment to working within a community where staff and students embrace active, thoughtful, and relevant learning through a variety of resources and tools.

Fidelity to the Textbook

I began to think in terms of textbook fatigue when I was sitting at a tiny table in a tiny chair with 1st grade teachers who were also perched uncomfortably on chairs that looked as if they were straight from the doll house in the corner of the room. I will never understand how K–2 teachers manage to sit on chairs that are made for the bottoms of humans weighing less than forty pounds, but that's another issue entirely. On this day, we were talking about writing, and these teachers were telling me that they simply did not have time to incorporate writing into their curriculum. Being a former English teacher, this sounded like heresy to me, but I managed to remain relatively calm. "How can you *not* have your children write?" I asked.

"There just isn't enough time for everything in the textbook," explained the team leader, pointing in dismay to the large teacher's edition of their reading text.

"We're already going so fast that the kids aren't getting it," a first-year teacher said, nearly in tears. "I can't fit in one more thing."

"Then why don't you slow down," I asked, "and include what you know is important, like writing?" They looked at me as only primary teachers can look at someone who has had way more experience with adolescents than with children who do most of their writing with a crayon.

"We have to follow the program with fidelity," the team leader explained patiently.

Ah . . . fidelity. I was reminded of when a well-respected literacy expert called "fidelity" the new *F*-word. Thankfully, the principal walked into the room. We had a great conversation about fidelity, about having teachers use their own knowledge to make wise curricular choices, and about slowing down if the kids aren't getting it. These teachers are first-rate professionals who care very much for their students, but they and so many others have been convinced that following the prescribed program is somewhat akin to giving your child the entire course of antibiotics: missing one dose could sabotage the treatment.

Let me make clear that I understand the necessity of following a sequence for many topics, particularly those in science and math. Curriculum is all about organizing information so that it scaffolds deep learning. And one strength of most textbooks is that they are impeccably organized. The problem is that teachers are often left out of the curriculum loop and feel they must follow, often in a mechanical way, the teacher's edition as if it were handed down from on high. That's a real concern today, especially with the increasing emphasis on 21st century skills and Common Core State Standards: We need to have students analyze, synthesize, and use information rather than simply memorize it; skeptically evaluate sources instead of obediently accepting everything in print; and learn to work collaboratively to solve problems instead of only passing tests. Teachers (whole schools, actually) must be actively involved in the planning, implementation, and evaluation of all phases of the curriculum, not obedient followers of a packaged textbook series.

So, using textbooks *as well as* a wide variety of supplemental resources to support effective instruction is what modern schooling is all about. Driving instruction from the textbook's table of contents or trying to cover everything in the text is actually counterproductive in that it distracts us from our most important task: Helping students to internalize, apply, and transfer new learning in ways that are fresh and meaningful.

Insufficient Background Knowledge and Volume of Information

We have all experienced textbook fatigue and we've seen students suffer from it as well. The symptoms are obvious: we hide out in the teachers' lounge during textbook adoption, our students moan audibly when we ask them to open their texts, and we all try to figure out ways of transporting textbooks without risking permanent back injury.

In truth, textbook fatigue of both online and print texts may occur most often for students because they have insufficient background knowledge or vocabulary to help them make necessary connections with the many topics presented, invoking the "this is boring" chorus teachers hear every day. Texts are also sometimes written in a "just the facts ma'am" style that is not especially interesting to students or doesn't come at the material from their perspective. In addition, because of the sheer volume of information contained within the pages of the text as well as the overwhelming array of supplemental materials, students often don't have time to assimilate a concept before being rushed to the next.

A similar scenario plagues teachers. Teacher editions are bulging with the latest reading strategies, online resources, coaching tips, graphic organizers, vocabulary instruction—as well as pages (and screens) of color-coded benchmarks, standards, and curriculum alignment. This material might be helpful if teachers had a few extra years to read it; instead, every few years teachers face a new textbook adoption that is more complex, more all-encompassing, more daunting than the last.

One Size Fits All

One of the reasons that textbooks and their associated resources weigh so much is that they are created to meet the needs of as many states, districts, teachers, and students as possible, which makes it a one-size-fits-all product. Larger states such as Florida, Texas, and California get the most attention, not because those states have more worthy students and teachers, but because they have more students and therefore more money

to spend on textbooks. And lest we forget, all textbook publishers are for-profit businesses, in fact, multibillion-dollar businesses. Publishers spend millions keeping up with standards as well as with trends in education and often change their content when the political or educational winds shift. They use focus groups to report back to their marketing departments in much the same way that cereal companies survey their target audience to find out how much fiber they should put in their flakes.

Certainly, the individuals working for publishers may care about students and teachers, but the bottom line is sales. And if an idea isn't profitable, however engaging or commonsensical it may be, you won't see it in programs, textbook series, or supplemental resources.

Similarly, if a controversial topic such as the advantages of stem cell research in science or sexual content in literature (even Shakespeare) is questioned publicly by large groups of people, it is often soft-pedaled or omitted entirely. And if you think textbooks aren't political, think again. A significant example was highlighted in the *New York Times* in March 2010. "After three days of turbulent meetings, the Texas Board of Education on Friday approved a social studies curriculum that will put a conservative stamp on history and economics textbooks, stressing the superiority of American capitalism, questioning the Founding Fathers' commitment to a purely secular government and presenting Republican political philosophies in a more positive light" (McKinley, 2010). At the same meeting, "Efforts by Hispanic board members to include more Latino figures as role models for the state's large Hispanic population were consistently defeated" (McKinley 2010).

The *Washington Post* covered the story as well, writing that "Historians on Tuesday criticized proposed revisions to the Texas social studies curriculum, saying that many of the changes are historically inaccurate and that they would affect textbooks and classrooms far beyond the state's borders." They explained that because the "Texas textbook market is so large, books assigned to the state's 4.7 million students often rocket to the top of the

market, decreasing costs for other school districts and leading them to buy the same materials" (Birnbaum, 2010). This unfortunate occurrence supports the argument that textbooks should not be used as a single source of information, much less as a sole curriculum.

Perhaps more than anything else, textbooks are victims of the 21st century. With information doubling every two years, the vast textbook machine can't rumble along quickly enough. Editors begin working on print textbooks several years before publication; by the time the textbooks are published, much of the information may be stale if not completely wrong, especially in science. With so much information being generated by a global, digital world that never sleeps, editors must go crazy trying to determine what to include and what to discard.

That's not to say that there aren't some exemplary textbooks out there, but it's important to remember that textbooks were never intended to replace teachers' expertise, knowledge, or intuition in the classroom. Textbooks are simply a resource, a convenient way to allow students to have access to the same information at the same time, with suggestions from educational experts on how to use the information with students. Even as more schools are buying laptops or iPads and textbooks are moving into the online market, it's *how* we use these digital textbooks that will make the difference in students' learning. Using any online textbook as the only source of information ironically ignores the advantages inherent in electronic media, specifically the availability of high-quality (and often free) online articles, websites, and other open-source materials. What's more, text that is difficult to read doesn't become easier just because it is electronic.

How We Use Textbooks

In the United States, there is hardly a standard textbook use policy. When consulting in a large district in Kentucky, for example, the curriculum director told me that when administrators conduct walk-throughs, a teacher is "marked down" if she is

using the textbook as a curriculum guide instead of as a resource. In another state, the district superintendent laughingly told me that she couldn't pry teachers' fingers from the textbooks—and then admitted that because of budget cutbacks they had few other additional resources. In several schools I've visited, teachers had only a few textbooks because they were expected to work together to create lessons from a variety of sources. In a small southern district, a gifted grant writer was able to procure iPads for each teacher—her next goal was to make them available to students so they could switch from print textbooks to an online version.

I've been in schools that have only classroom sets of textbooks and others with policies that require that each student be assigned a textbook. In one school, each teacher had a classroom set and each student had a stay-at-home textbook. Although the cost was exorbitant, administrators cut back in other areas because they felt print textbook access was a critical component of their literacy goals.

Textbook use is as varied as schools themselves, but what I am advocating is changing the way we use *all* textbooks, both print and online, by cultivating teachers' knowledge and experience rather than sublimating their abilities to textbooks and programs.

How to Revitalize Learning

One of the goals of this book, besides revitalizing learning for students as well as for teachers, is to show how communal learning can be commonplace throughout the school. Although it is possible for teachers to make the move from a textbook-centered curriculum to a resource-infused curriculum individually, it is much more difficult without the support of a group of colleagues to help fashion this change.

Linda Darling Hammond, in her eye-opening book *The Flat World and Education,* examines why high-performing nations such as Finland, which she calls a "poster child for school improvement since it rapidly climbed to the top of the international rankings," are doing so much better than the United States on international tests (2010a, 164).

"In Finland, like other high performing nations, schools provide time for regular collaboration among teachers on issues of instruction." This collaboration is in the form of "powerful learning environments that continually improve as they learn to engage in a 'cycle of self-responsible planning, action and reflection/evaluation' " (2010a, 172–173). She goes on to point out that this shift in teachers' learning has an effect on classroom practices. Teachers who engage in a cycle of planning, action, and reflection discover the challenges and rewards in what they expect their own students to do.

How much professional development in the United States is devoted to planning, action, and reflection/evaluation? As Yvette Jackson wrote in the *Washington Post,* "Much of the professional development teachers are required to attend is attached to textbook adoptions, mandates, or scripted programs that promise results that are rarely delivered" (2011). It seems that textbook fatigue is also plaguing professional development.

Communities of Reflection and Practice

The advantages of professional learning communities (PLCs) are well documented, but, unfortunately, many PLCs exist in name only, especially when schools do not commit the time necessary to make them successful. Often, PLCs are hurried affairs that focus on checklists and protocols, leaving members little energy for reflecting on student work and teaching practices. These groups have become, in too many schools, one more thing to add to teachers' (and administrators') long and burdensome days rather than a place where collaborative planning makes their work more interesting and productive. Sadly, the acronym PLC does not always invoke a positive response from teachers.

I like what the National Council of Teachers of English (NCTE) calls these PLCs: Communities of Practice. NCTE cites the following as characteristics of these communities:

- Connection to something larger
- Coordinated perspectives, discourse, and actions

• Shared resources to address recurring problems of practice concerning student learning
• Making visible tacit knowledge or learning (NCTE, 2011).

One of the best ways to overcome textbook fatigue is by forming such communities, either by grade level, content area, or in interdisciplinary teams. Another option is to work with a co-teacher. If you want help with starting or continuing group learning, note the Community of Practice section at the end of Chapters 1 through 7. These sections are designed to help you capitalize on the informal and formal benefits of peer collaboration and explore concepts presented in the chapter. It is the wisdom of your own crowd, at your own school, that will transform what may have been a PLC in name only to a vibrant working community.

Daniel Pink says that "Human beings have an innate inner drive to be autonomous, self-determined, and connected to one another" (2011, p. 73). He contends that when those conditions are met, there is really no limit to what can be accomplished. In this era of standardization and scripted curricula, we need to reembrace autonomy, self-efficacy, and relationships before we even touch the cover of our textbooks. Through interdependence, especially within our communities of learning, we can make wise decisions about how to use textbooks as resources to support instruction.

The National Commission on Teaching and America's Future pinpoints the challenge: "If America is to meet the needs of 21st century learners, we must move away from the norms that governed factory-era schools. . . . Transforming schools into 21st century learning communities means recognizing that teachers must become members of a growing network of shared expertise" (Fulton, Yoon, & Lee, 2005, p. 1). Teachers already have the shared expertise, or they can certainly grow it through study and collaboration, but they need *time* to examine appropriate text, plan lessons, and discuss how to engage students in learning if we want to see schools move solidly into the 21st century.

Resources for Revitalizing Learning

By relying on communities of learning, both in classrooms and within faculties, the chapters in this book will help teachers choose textbook activities wisely, assist students as they unlock difficult text, and find appropriate supplemental resources.

• Chapters 1, 3, and 4 address how to help students engage in deep, meaningful reading of all texts;
• Chapter 2 focuses on how to build background information;
• Chapter 5 shows how to incorporate writing into content-area study;
• Chapter 6 provides suggestions for using assessments that guide instruction;
• Chapter 7 offers advice on building text sets for all subject areas; and
• Chapter 8 gives a picture of schools that are already using textbooks as resources.

Overcoming Textbook Fatigue

This is a book about how to manage your textbook before it overtakes you, reclaim your curriculum from the table of contents, and embrace teaching as a joyful activity, not one driven by textbook demands. Those goals may sound nearly impossible, but I have seen entire schools delivered from textbook fatigue when given the support to work collaboratively on what their students need, not what textbook publishers decide their students need. This means reaching within *and* beyond the textbook to access all sorts of 21st century tools, the same ones that students will be using in college, their careers, and daily life. Just as we have moved on from the encyclopedia salesman who convinced us that no home was intellectually safe without a set of World Books, it is now obsolete to believe that there is one set of textbooks that can meet the needs of this generation of info-savvy kids.

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Background Knowledge:
The Glue That Makes Learning Stick

A person's background knowledge, often called prior knowledge, is a collection of "abstracted residue" (Schallert, 2002, p. 557) that has been formed from all of life's experiences. We all, whether as a toddler or a centenarian, bring diverse bits of background knowledge—consciously or subconsciously—to every subsequent experience, and we use them to connect or glue new information to old. Background knowledge is an essential component in learning because it helps us make sense of new ideas and experiences.

Consider an early 20th century photograph shown in Figure 2.1 of a row of men with their backs to the camera, perusing information in front of a building with the sign "National Association Headquarters Opposed to Woman Suffrage." Closer to the photographer, a lone woman is also facing away from the camera, her body language indicating that she is watching and reacting to the men. If the photograph is viewed by someone who knows the term *suffrage,* he will likely understand the dramatic irony

2.1 National Anti-Suffrage Association Headquaters
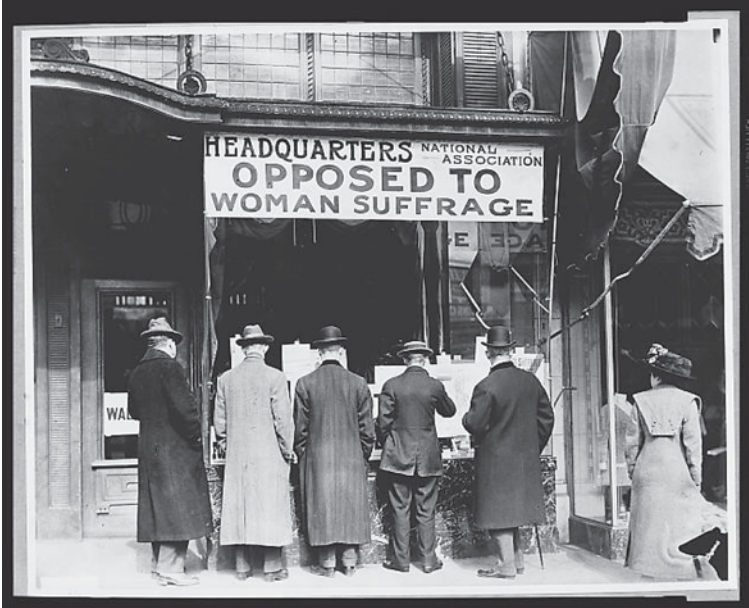
Source: Library of Congress, Prints and Photographs Division LC-USZ62-25338 DLC

portrayed in the photo. If a viewer doesn't know what suffrage means or has no background knowledge about the movement, he will be unable to "read" this piece of text. The viewer who understands the photograph is not smarter or more advanced than someone who doesn't understand it; he simply has knowledge that allows him to unlock the meaning. With a little bit of background—the definition of *suffrage,* for example—anyone may be able to answer low-level comprehension questions about the photo, but extensive prior knowledge about the suffrage movement and the violence that erupted in opposition to women's demands to vote deepens understanding of this scene. Failing to understand the photo is analogous to failing to understand print text—something that happens to students with insufficient background knowledge.

They may see the photograph—that is, pronounce words without error, read fluently, and even answer some questions about the text—but the full meaning of the text eludes them without pertinent background knowledge.

Importance of Background Knowledge

I was visiting an 8th grade social studies class soon after the tsunami hit Japan in 2011. The teacher had abandoned the textbook lesson to focus on the disaster. With copies of *USA Today* in front of them, students read about the imminent danger of the nuclear reactors having a meltdown at the Fukushima Daiichi Nuclear Power Plant. Suddenly, I realized that my background knowledge was insufficient for understanding the potential consequences. Yes, I knew that it would be a very bad thing if the nuclear reactors experienced a meltdown, but beyond that, I had no concept of a *melting* nuclear reactor. Because I cared about what happened (notice the intrinsic motivation), I read several articles about nuclear reactors online; found some simple graphics that described possible scenarios; and asked my father, a retired nuclear power plant engineer, to explain how they operate. As the gaps in my knowledge filled, my comprehension soared.

How important is background knowledge? According to Robert Marzano, "What students *already know* about the content is one of the strongest indicators of how well they will learn new information relative to the content" (2004, p. 1). John Guthrie is equally adamant as he writes about comprehension as impossible without prior knowledge (2008, p. 11), and the National Research Council states definitively, "All learning involves transfer from previous experiences. Even initial learning involves transfer that is based on previous experiences and prior knowledge" (2000, p. 236).

Background Knowledge

The problem for students and teachers, however, is obvious: the background knowledge playing field is not equal. Let's take a chapter in a science textbook on stars and planets. In a typical

science classroom, especially in grades 7 and up where students may have come from a variety of elementary schools, you might have several students whose elementary science teacher worked at a planetarium during college and enthusiastically helped her students build a mock planetarium in the classroom. On the other hand, you may have a group of students whose teacher never really got into astronomy and whose background knowledge is almost nonexistent. Then there are all those other students: kids whose parents have telescopes, kids who live in brightly lit cities and never notice the night sky, and kids who search the Internet for information on constellations because they have an inherent interest in stars.

In addition, there is an affective component to prior knowledge. A good example is the knowledge 5th graders bring to a textbook chapter on the civil rights movement. Those who have visited the Kelly Ingram Civil Rights Memorial Park in Birmingham will likely have a strong visceral response when studying the bombing of the 16th Street Baptist Church in 1963, and they may have an empathetic understanding of what it feels like to be sprayed with fire hoses after viewing the displays and photographs. Students whose relatives were active in the movement may have heard so many stories that they feel like they were there, though they were not born until decades later. These students bring to the social studies or English text not only objective information but also an emotional response that creates a virtual experience as they read. Beginning with the first chapter in a textbook unit and moving lockstep through the book is not only an inefficient way to teach but is unfair both to those who have background knowledge and, more important, to those who do not.

Assessing Background Knowledge

Before beginning any chapter or unit, it is essential to find out what your students know about the topic. What students know is difficult to predict without some sort of objective measure, especially considering the ranges of background knowledge in any one class. Following are several ways to assess individuals'

background knowledge and get a feel for how much the class as a whole knows about the topic.

Prediction Guides

Prediction guides, also called anticipation guides (Buehl, 2001), are one of the best ways to assess students' prior knowledge. As an added advantage, such activities give students clues about what's coming next and that helps them set a purpose for learning, an important aspect of motivation.

The idea behind a prediction guide is that the teacher provides students with written statements related to the text before they begin reading. Students indicate that they agree or disagree with these statements, and then the teacher can facilitate the discussion centered on students' reasoning for their predictions. See Figure 2.2 for a sample prediction guide on probability in 8th grade math.

Make sure that students understand that this is an activity, not a test, and that they will not be graded according to the accuracy of their answers. You can turn it into an engaging activity by inserting some crazy predictions. For example, a 4th grade science

2.2 Sample Prediction Guide on Probability		
Student name: _____		
Read each statement and circle A if you agree with the statement or D if you disagree. Remember that this is not a test, so make your best guess.		
	Agree / Disagree	
1. The probability of zero means an event is impossible.	A	D
2. When studying probability you may be asked to play with dice.	A	D
3. The sum of the probabilities of all the possible outcomes equals one.	A	D
4. Two mutually exclusive events can happen at the same time.	A	D
5. You should understand fractions before beginning the study of probability.	A	D

teacher gave her students a prediction guide about weather before introducing them to the chapter. One of the items asked students to agree or disagree with this statement: "Fog is really just clouds that have fallen from the sky." Some students knew that both fog and clouds are composed of water droplets, but the "falling from the sky" part made them pause and think. When asking them for their reasoning, the teacher found out who understood the concept of fogs and clouds, with a bit of fun mixed in.

Anticipation guides provide the teacher "with some understanding of the quality and quantity of prior knowledge students have about the ideas in the reading assignment" (Anders & Spitler, 2007, p. 171). When you collect the guides and tally the responses, you will see a clear pattern indicating which concepts the entire group has or has not been exposed to as well as which individuals may need additional instruction. You may return the guides to students, allowing them to change their answers as they read if they find information that contradicts what they originally believed, or you may want to have students readdress their guides at the end of the unit. An added benefit is that once students invest in a prediction, they are eager to find out if they are right, and the information often sticks with them longer because of that investment.

In any case, you will have a much better idea about how to approach the chapter or unit after you take a look at your students' responses. Design your instruction to specifically meet students' needs. You may put less knowledgeable students in a group with a student tutor who has more knowledge; you may jigsaw the reading so that students who already know a little about the topic read a different part of the text and share what they learned with other students; or you may offer extended learning opportunities, including online research, to those who have solid background knowledge.

Although creating prediction guides can take time, one easy way to accumulate several for every topic is to have students write their own prediction guides when they finish the unit. The exercise serves as a great review for your students prior to

assessment and gives you a variety of prediction guides by the end of the year. You can choose among the best statements for next year's (or next semester's) students. Not surprisingly, you will find that students' statements are often more creative than those we write. Use the following tips to assist students in writing their own guides:

1. Skim the chapter and find the most important ideas related to the topic. Write a few statements about each. Aim for 10 statements per guide.

2. Use short and succinct sentences, avoiding absolute words such as never, always, best, or worst.

3. Play around by including funny or crazy predictions to make the activity enjoyable.

4. Avoid vocabulary that is too difficult or specific.

5. Explore your questions and thoughts and don't worry about following the chapter exactly.

Carousel Walk

A carousel walk (or gallery walk) allows students to work in groups and move around the room as they share background knowledge. Suppose your next unit in your middle or high school social studies or English curriculum is the story of Homer's Ulysses (or Odysseus). Although you may simply ask who has read the story, seen a movie about the adventure, or heard the tale, you won't know if students have misinformation or superficial knowledge without a more in-depth assessment. Begin by listing various aspects of the story that you think are important. If you have taught the story before, you already know what you want students to learn. If you haven't, look through the unit in the textbook and note important concepts designated by headings or illustrations. Now the fun begins.

1. Write one word or term on a separate sheet of chart paper. Examples may include Trojan horse, Penelope, Cyclops, Circe, Sirens, Ulysses, Ithaca, or even concepts such as bravery,

adventure, or journey. Tape charts around the room on walls, allowing about five feet between charts.

2. Place students in groups of three or four and give each group leader a different colored marker.

3. Station one group by each chart. When you say "begin," the students in each group will list everything they know about the term. When you say "move," they will advance to the chart on their right and begin listing everything they know about that term until you again say "move." Groups move and add to the lists until they return to their original charts.

4. Have students sit down (within their groups) and go through each chart with the whole class, reading the items aloud and asking for clarification from the groups (easily identifiable by the color of the marker used). You can foster discussions and make connections as you assess, activate, and build background knowledge prior to reading.

Free Discussion

One of my favorite ways of assessing background knowledge is by listening to kids talk. I put students in groups (or allow them to choose groups) and throw out a question related to the reading, such as "Why do you feel lighter in water than out of it?" when studying buoyancy in elementary science or "What do you know about China?" before beginning a unit on China in social studies, any grade. Each group shares what they know (or think they know) while I listen carefully. Students often say things that are far from fact, so this activity gives me opportunities to correct misperceptions or ask them to look up information online and then report back to the class the next day.

Building Background Knowledge

Once you have gained insights about what your students know, you can create lessons that target specific learning, something textbooks simply cannot do. It takes a teacher who knows his students to differentiate, and the more you assess background

knowledge and teach to your students' strengths, the better you will become at focusing your instruction.

Many textbooks try to help you by offering a section called Activating Background Knowledge or something similar, but such a cursory approach to activating prior knowledge is not enough. In our earlier example about stars, for instance, one middle-school textbook directs the teacher to build background by asking students if they have ever observed the Milky Way in the night sky. Such questions may guide students toward the topic, but they are hardly sufficient for building or accessing prior knowledge. Even if students' backgrounds were activated through such a question, it doesn't mean that they will automatically connect what they know to what they are learning. You know how easily students can take a question meant to build background and turn it into a narrative that is tangential to what you are trying to teach: "Oh, yeah, I have seen the Milky Way. One time my Uncle Frank took us out to a field in the middle of the night and we had hot chocolate and . . . ." It is important to explicitly help students connect what they know about a topic to what you want them to learn about it.

As I noted in Chapter 1, an engaging way to connect what students know to what they are learning is to take advantage of the visuals offered in textbooks and do a walk-through with your students, prompting them to speak out if they know something about a graphic or text feature. A 6th grade science textbook includes a shocking photograph of a house that slid down a hill during heavy rains. The written text, unfortunately, is little more than fact after fact about El Niño and La Niña with a reference to landslides and erosion but no explanation of either word. It wouldn't take much time to have students look carefully at the photograph, explain to them how such an event happens, and ask them to look up landslides or mudslides online, perhaps finding other photographs to share. Then when students read in their textbooks "During an El Niño period, warmer surface water in areas of the eastern equatorial Pacific Ocean leads to more water vapor being in the air above the water. This can result in increased rainfall across the

southeastern United States" (McGraw-Hill/Glencoe, 2007, p. 479), they may have enough background knowledge to stick with the text and even comprehend the effects of El Niño.

Textbook Scavenger Hunts

In some schools or districts, teachers are still required to use textbooks for every lesson. Teachers who have few supplemental text choices often feel frustrated by their lack of options in dealing with the textbook. This activity makes the most of what textbooks have to offer and builds background in the process. Create a text-book scavenger hunt for important ideas, visuals, or new vocabulary before asking students to read the chapter. In groups of two or three, have students go on a virtual scavenger hunt (within the textbook) using a list of items that you have created to build background knowledge. Groups will then share what they have discovered with everyone in the class. You may want to assign one or two items to each group and facilitate a jigsawing of information. This active, enjoyable method of building background will add to students' understanding of the text when they begin reading. Here are sample items for your textbook chapter scavenger hunt:

• Choose five words or terms the group thinks will be important to this unit. (Note: Don't use the vocabulary words that are highlighted at the beginning of the chapter.)
• Choose one picture in this chapter and tell why your group thinks this picture is important.
• Choose one graph or map and provide a different caption for it.
• Give a summary of the cycle on page *X*.
• Write the items needed for the lab on page *X*. Think of two more items that would be useful for this experiment.
• Find the answer to one "review" math problem in this chapter.
• Record something in this chapter that your group has studied in previous years and discuss what new information is presented.

• List three things to look up online that would help your group better understand this chapter.

• Discuss which visual in this chapter is most interesting to your group. Explain why.

• Discuss which concept in this chapter your group thinks may be most difficult to understand.

Using Picture Books to Build Background

Picture books, sometimes known as children's books, aren't just for little kids anymore. Surprisingly, picture books contain more rare words per thousand words than prime-time television or the conversation of college graduates (Carr, Buchannan, Wentz, Weiss, & Brant, 2001). A quick perusal of what are called crossover picture books, nonfiction and fiction books for adolescent and adult readers with complex themes and provocative subject matter, will convince you that this new category of books is certainly not written for kindergarteners. They are, however, excellent resources for building background because they focus on a single concept, often in depth.

The authors of *The Power of Picture Books: Using Content-Area Literature in Middle School* note, "Academically, picture book topics offer valuable extensions to subject area content and, in many cases, go far beyond the basic information in the textbook" (Fresch & Harkins, 2009, p. 6). When teaching probability in math, as we discussed earlier, the authors talk about a math teacher who used a picture book, *A Very Improbable Story* (Einhorn, 2008), to help his students understand real-life application. Picture books build background through visual images as well as through words, an especially important factor for this generation of visual learners. Powerful and poignant images found in picture books trigger memories or make connections in meaningful ways.

As for building background, the illustrations and text come together in a way that textbooks simply cannot by giving students a rich context prior to reading. For example, Maya Angelou's poem paired with graffiti artist Jean-Michel Basquiat's illustrations in the

picture book *Life Doesn't Frighten Me* (1993) creates an experience that deepens meaning for middle or high school English students preparing to read Angelou's *I Know Why the Caged Bird Sings* (2009).

In social studies, the picture book *Patrol: An American Soldier in Vietnam* by Walter Dean Myers (2005) is another example of this phenomenon. The young soldier in this picture book expresses his fear of dying and tries to understand who the enemy is. "In war, shadows are enemies, too," he thinks (p. 7). In this powerful story-poem, Myers takes us into the war as we share this soldier's unforgettable experience. The illustrations by Ann Grifalconi look like cut-outs glued together to make a collage, and along with the infusion of camouflage, they add another dimension to the reading experience.

Picture books for science and English topics abound as well, from books about Gregor Mendel (Bardoe, 2006) to books that introduce readers to the poetry of William Carlos Williams (Bryant, 2008). There are even picture books for math teachers, the most famous being the *Sir Cumference* series by Cindy Neuschwander for elementary students. *Pythagoras and the Ratios: A Math Adventure* (Ellis, 2010) is a good picture book for older students.

Be on the lookout, as well, for longer nonfiction books on a variety of topics: *Flesh and Blood so Cheap: The Triangle Fire and Its Legacy* (Marrin, 2011), *Journey into the Deep: Discovering New Ocean Creatures* (Johnson, 2011), *Claudette Colvin: Twice Toward Justice* (Hoose, 2010), or *We've Got a Job: The 1963 Birmingham Children's March* (Levinson 2012). You won't be able to read these books to students in one sitting, but you could read a chapter a day or make them available to students who need extra help with background on particular topics. Many of these books have won prestigious awards, so don't hesitate to ask your media specialist to order them to place on the library or reading shelf. You may also want to check out the Orbis Pictus Awards for outstanding nonfiction picture books at http://www.ncte.org/awards/orbispictus.

Building Background Virtually

In classrooms equipped with interactive whiteboards—or if all students have laptops or tablets—building background knowledge is easier than ever before. Websites allow students virtual experiences, such as listening to speeches or music from different eras; watching video clips or newscasts; or examining all sorts of primary documents. These background builders significantly deepen students' comprehension of any topic.

The best part of technology is that you can get students to help you. Look through the chapter or unit you are preparing to teach. After assessing students' background knowledge, decide what topics you will scaffold with additional information. In a middle school social studies book, for example, a chapter on India offers a picture of Mohandas Karamchand (Mahatma) Gandhi, but only one sentence about him. If you want to teach students about India by focusing on Gandhi, perhaps in conjunction with the English teacher's unit on biographies, have students go to http://www.mkgandhi.org/main.htm, a wide-ranging site about Gandhi that contains primary documents, student projects from other countries, speeches, video clips, and more. You can assign different groups topics to research or ask individual students to look on the site and be prepared to discuss something they learned about Gandhi with their groups.

Current textbooks may also be helpful because they often include lists of websites or DVDs of supplemental material such as film clips, music, or photographs. Digital textbooks have links that will take students all over the world instantly. The hard part is deciding which topics need to be expanded through background information. In the short textbook chapter on India, I found more than 30 different topics, from monsoons to reincarnation. Clearly, you cannot build background knowledge on each of those topics. The obvious advantage is found in exploring one topic in depth, such as Gandhi, and building a comprehensive understanding of India through his life, rather than having students read one unrelated sentence after another about some place in the world called India.

Building Background Through Experiences

Robert Marzano discusses the importance of direct experiences: "The most straightforward way to enhance students' academic background knowledge is to provide academically enriching experiences." He defines the direct approach as one that increases "the variety and depth of out-of-class experiences. Such experiences include field trips to museums, art galleries, and the like, as well as school-sponsored travel and exchange programs" (2004, p. 14).

Hands-on or direct experiences help students understand concepts they encounter while reading and support other activities such as writing or discussions. Many schools and districts assert that money does not exist for such activities, but money may be found through grants, parent-teacher associations, parent contributions, or even candy sales. If it is impossible to take students out of the school setting, then bring the world to students. Often parents, community, and faculty members have vast resources in terms of experiences and artifacts. Let parents and faculty know the topics you will be covering and ask if anyone would be willing to help you create experiences for the students. I will never forget the year that my team-teacher and I were teaching a unit on the Vietnam antiwar movement when we discovered that a student's parent attended Kent State and had witnessed the shootings in 1970. She came to our class and talked about what she had seen, and we were all mesmerized by her account. Hearing her firsthand story brought the experience into our lives in a personal, memorable way.

Similarly, my students often told me that seeing plays by a variety of playwrights at the Shakespeare Festival, going to art museums to experience visual literacy, interviewing residents at a retirement home, and participating in other creative experiences related to our study were significant factors in their education. I remember one autumn day when we were reading *Of Mice and Men* (Steinbeck, 2002), and I led my high school students outside so they could walk across the fallen leaves and listen to how they crunched under their feet in just the way

Steinbeck described. A minimal attempt at building background knowledge, you may think, but I contend that such experiences *do* enhance students' understanding and motivate them to make those important connections each time they read a text.

Next Best: Virtual Field Trips

A virtual tour on a website pales in comparison to any field trip, especially an active one such as to a space center. If you've ever talked to a kid who took a field trip to a space center, you know what I mean. Many students have decided to pursue a career in science or engineering because of their experience at one of these centers. They vividly remember talking with astronauts, placing their hands on a space shuttle, or experiencing a simulation of a lift-off. Although the pictures and online tours are better than nothing, they come in a distant second to the real deal.

I recommend a direct experience over a virtual field trip, but we all know that real field trips are often impossible. The next best thing is a virtual field trip; many online sites work hand-in-hand with educators. Middle school teacher Dan Jones told his local newspaper, "I can take them (students) on location to Egypt and they can do a presentation in front of the Great Pyramid of Giza." (*Mansfield News Journal,* 2011). Jones uses technology made by a company called Yoostar, which allows his students to appear in real time on a computer screen as if they are on location. He also used Skype to connect 8th graders to Ford's Theater when they were studying Abraham Lincoln.

Go to http://www.simplek12.com/virtualfieldtrips and download virtual trips for history, social studies, fine arts, English, math, science, and many other subjects. Many of these tours have been put together by students or teachers and are educationally sound. Another site that offers a wide variety of experiences is http://www.internet4classrooms.com, where you'll find links for Internet sites specifically for K–8 students. At http://www.theteachersguide.com/virtualtours.html you'll find virtual tours of all sorts of museums, including the National

Gallery of Art (Washington, DC) and the U.S. Holocaust Memorial Museum, as well as of historical sites including the Great Wall of China and Gettysburg National Battlefield Park (Pennsylvania). I could list hundreds of websites offering virtual field trips, but you'll do better by simply using a search engine to explore your topic and choosing a website that will fill in the gaps in your students' background knowledge. Better yet, teach students how to be skeptical consumers of online information and allow them to engage in their own personal, albeit virtual, field trips.

Reading as a Background Builder

As I have mentioned, one of the most significant problems with textbooks is that they tend to narrow the curriculum to what will be tested, often resulting in a brief overview of many subjects. The overview can leave students both overwhelmed with lists, facts, and dry recitations of topics and underprepared for attaching new learning to old.

Kelly Gallagher in *Readicide* (2009) argues that the focus on testing preparation robs students of the opportunity to build background through wide and varied reading. This is painfully and ironically true, but what can you do about it? Gallagher suggests that teachers provide students with an article a week in an effort to build prior knowledge for learning *and* for doing well on tests. "Those students who sit down to the exam with the broadest base of prior knowledge will have the highest chance of scoring well" (2009, p. 38). He provides a list of the articles of the week that he has used at www.kellygallagher.org/resources/articles.htm.

I recommend that teachers go further in making sure that students have a consistent and wide range of reading experiences by creating a literacy-rich environment in each content-area class. Calkins, Ehrenworth, and Lehman (2012) put this issue in perspective.

One textbook often costs thirty thousand dollars for classroom sets. And often these texts can't begin to match the

complexity of good primary and secondary sources. If you are aligning instruction to the Common Core, you will need students to read well-crafted texts that are written with particular (and different) perspectives. This suggests that your school will need to *channel whatever resources you do have away from textbooks and toward trade books.* (p. 93)

Following are some suggestions about how to make that happen.

Create student text detectives. Ask students to find news articles or information related to current events or the topic you are teaching every week or so. Allow students to sign up for a particular day in advance and have them bring in an article to share with the class. Students could also choose a visual, a cartoon, or an online news clip instead of a printed newspaper article. You may require that students show you the piece a few days before it is presented to check for validity. Text detectives is a quick activity but loaded with new learning. It should take no more than 10 minutes of class time for students to present their news. An added benefit is that students will expand their reading and their background knowledge by looking for articles to present on their assigned day.

Create a large classroom library. Collect a broad selection of young adult novels and nonfiction titles related to your discipline. Although this is a common practice for English and social studies teachers, math and science teachers can include biographies of mathematicians or scientists as well as books on discoveries. A trend in young adult literature is forensic novels. Go to http://www.teenreads.com or have students look through the site to find books that will build background knowledge and get them reading like crazy. Assign a class librarian to keep track of checked out books and make sure students have both time and motivation for choosing and reading books. If you don't have a class library, ask your media specialist to pull a group of books related to the topic of study that you can return at the end of the unit. See Chapter 7 for more information about text sets and lists to help you build a classroom library.

Provide primary documents for every topic you introduce. The Library of Congress at http://myloc.gov offers diaries, photographs, songs, journals, and news articles from hundreds of time periods related to thousands of topics. Again, ask students to take on the responsibility of finding relevant documents so you don't have to do all the work. Students can also be in charge of creating bulletin boards to display these pieces as they build background knowledge.

Get a classroom set of current events materials. Talk to your reading coach or media specialist about subscribing to a class set of current events magazines, either print or online. Magazines targeted for the reading level of your students, such as such as *Time for Kids* for younger students or *New York Times Upfront* for older students, contain the latest news in all disciplines.

In one school, the reading coach sent a copy of the table of contents of each weekly current events magazine to every teacher. With that simple prompt, teachers could request the entire set of magazines or have students access the online version so they could read articles relevant to the topics they were studying. Being aware of the topics in the magazines gave teachers natural segues into opportunities for building interdisciplinary background experiences. In a middle school, an interdisciplinary team of English, social studies, science, and math teachers used the account of the Chilean miners who were trapped 2,300 feet below Earth's surface to cover their standards in an engaging way that was relevant to students—while building background in all of those disciplines.

Even the covers of these newsmagazines are valuable in building background. If allowed, students can create a timeline of events that happened during the year by hanging the covers on the wall in sequence or by clipping them to a high kite string hung across the room.

Background Knowledge: A Necessity

Background knowledge is not a frill of education, a nicety that simply helps students enjoy reading and learning. Background knowledge is essential to comprehension, to making connections,

and to understanding the big ideas. Background knowledge is the foundation of all academic study. Not taking the time to assess, activate, and build prior knowledge is like throwing the ball to an inexperienced basketball player and demanding that he play like a pro in the big game.

All learning takes time, and it is incremental. No matter how quickly the textbook skips from topic to topic, it is our responsibility to help students fill in the blanks so meaning is complete and rewarding.

Community of Practice: Building Background

For this Community of Practice, the group will engage in designing activities that will help students build background knowledge.

In the meeting

1. In content-area groups or with a colleague, make a list of topics that you feel are most important to cover this term or semester. Spend time discussing what is really important and resist the urge to list every topic that might possibly be on a test.

2. At subsequent meetings, examine a topic before you start to teach it. Brainstorm how you can build background knowledge:

- What direct experiences could you provide to build students' background?
- What virtual experiences could you provide students using various media, including the Internet, music, and primary documents?
- What supplemental reading or research (for all ability levels) would build background pertinent to this topic?
- Whom could you invite to talk to groups of students about relevant topics?
  - Faculty or staff member with firsthand experience or knowledge?
  - Community member, group, or parent with experience or knowledge about a topic?
  - Professional from a local business in a related discipline?

In the classroom

3. Use the materials and information from the brainstorming session to share background knowledge with your students. Collect information from the classroom experience to help members reflect after the lesson and at your next group meeting. Ask your students to evaluate how building background affected their learning.

4. If possible, compare the assessment scores of groups of students with whom you built background with those who did not have that advantage, perhaps using scores from last year's students.

In the follow-up meeting

5. Give an example of how you helped students build background knowledge; offer your evaluation of the activity, including feedback from students and an analysis based on a group of students that did not benefit from background knowledge; share data with each other.

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