

## INSTRUCTIONAL LEADER INSTRUCTIONAL LEADER INSTRUCTIONAL LEADER

# Building and Activating Background Knowledge

*Teachers can increase students' comprehension by building connections between new content and what students already know.*

**By Douglas Fisher and Nancy Frey**

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### Watch the Video!

Watch a video about using and activating background knowledge:

[www.principals.org/pl1210fisher](http://www.principals.org/pl1210fisher).

**S**tart with what you know is good advice in lesson planning. When teachers begin with known information, they can build students' understanding of new content. Unfortunately, in too many classrooms teachers begin with new information and students are left behind. For example, we observed a well-meaning teacher introduce the topic of radioactive decay by talking about energy loss, parent nuclides, and daughter nuclides. The students in the class dutifully took notes, but when asked, they said that they had no idea what their teacher was talking about.

As part of the lesson, students worked in groups to read their assigned text. One of the sentences in the text read, "One Becquerel is defined as one transformation (or decay) per second." The sentence is fairly straightforward. It defines a term, a "Becquerel." But the definition assumes tremendous background knowledge and understanding of vocabulary. What's a "transformation," anyway?

In many classrooms where text difficulty is a problem, students are taught comprehension strategies, such as predicting, visualizing, questioning, and inferring. But would any of those cognitive strategies help students understand the sentence from the textbook? Probably not. Comprehension strategies cannot compensate for missing background information.

Teachers must ensure that students can make sense of the content, regardless of how difficult it may seem to novices. To do that job well, teachers must build and activate students' background knowledge—two of the most important things that they can do to improve student understanding. Thankfully, there are a number

of ways that teachers can build and activate background knowledge.

### Direct and Indirect Background Building

In general, background knowledge can be built in two ways: through direct experiences or through indirect experiences (Marzano, 2004). Direct experiences—such as field trips, labs, simulations, and guest speakers—are very effective ways to ensure that students have relevant background knowledge. Unfortunately, direct experiences are often expensive and time-consuming. As the Internet continues to grow and more sites are interactive, teachers can build background knowledge in direct but virtual ways. For example, a history teacher uses the Louvre Museum Web site to show his students Islamic art that they have likely never seen in person, and a biology teacher has her students complete a number of virtual dissection labs as part of their practice work.

Indirect experiences build background knowledge in more subtle ways. For example, teacher modeling (see our column in the November issue) shows students how teachers think aloud about content. In addition, reading a wide range of texts on a given topic builds background knowledge. When students read texts at their reading level, their understanding of the topic improves.

For example, in a physics class, students read for 10 minutes every day. They have choices of what to read—all aligned with the topic under investigation—that cover a wide range of reading difficulty. When Amanda read about potential and kinetic energy in an article about roller coasters, she built her background knowledge. When Jeffrey read about a crime

scene that involved Boyle's law, he built his background knowledge.

In addition to teacher modeling and wide reading, background knowledge can be built as students interact with one another. During productive group work, students discuss their knowledge. In doing so, they share their understanding of the world and get a glimpse into the understanding of others. Consider this excerpt of an exchange between a group of students studying the stock market crash of 1929 in their U.S. History class.

*Jessica:* So I get that people buy stocks and that the value went down a lot and people lost their money. But what exactly is a stock?

*Marco:* My dad talks about stocks and how he trades them, sells them, and buys them. I asked him once what we really bought, and he said paper. When I was confused, he said it was an investment, like money in the bank but with more risk.

*Adrianna:* I think I understand stocks. It's part of the company, called "equity." Like your house or condo. You have equity, or a percentage, of the ownership until you pay it off. If the price goes up, you have more than you paid, but if the price drops, you have less than you paid, but you still owe the money you borrowed.

*Jessica:* So, when you buy stock, it's like you own a piece of the company? And the company uses your money to

operate? And if they do a good job, you'll get your money back, plus some?

As their discussion continued, these three students validated and expanded their understanding of stocks and how the market works. They built their background knowledge indirectly as they shared their understanding with one another. It's important that the teacher check for understanding periodically to ensure that misconceptions don't arise from group interactions.

### Activating Background Knowledge

Although developing background knowledge is essential and instructional leaders should look for this in the lessons they observe, it's also important to notice opportunities for activating students' relevant background knowledge. Students may have the necessary background knowledge but not use it when it would come in handy.

Teachers can activate students' background knowledge in a number of ways (Fisher & Frey, 2009). As an instructional leader, part of your role in observing instruction is to determine whether students' background knowledge was activated. In other words, it's not enough to look for instructional techniques, classroom management procedures, grade-level content, and background knowledge development. Putting all of this to use requires attention to the ways in which background knowledge is *activated* during a lesson.

Activating background knowledge used to be considered an anticipatory activity—done at the outset of the lesson and often used to capture student attention and serve as a motivator.



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This type of student engagement should not be limited to lesson openers but should be integrated into the overall flow the lesson. Some of the most common ways that teachers can activate background knowledge include:

- Quickwrites, in which students write for a few minutes about an assigned topic. Writing on topic requires that they think about the topic.
- KWL charts, in which students share with one another what they know about a topic, what they want to know about that topic, and then what they learned about the topic at the end of the lesson.
- Checklists, in which students are reminded of the knowledge, skills, and behaviors necessary to complete a task. Teacher-created checklists, especially ones on which students can add items, help students keep relevant information in mind as they work.
- Sentence and paragraph frames, in which students use a linguistic scaffold so that their attention is focused on the content rather than the language required to communicate their understanding.

For example, as a scaffold for a compare and contrast essay, an English teacher gave students the following frame: “\_\_\_\_\_ and \_\_\_\_\_ share several characteristics, including \_\_\_\_\_.” This frame unlocked a student’s thinking and he shared the following with his group: “*A Streetcar Named Desire* and *Cat on A Hot Tin Roof* share several characteristics, including the fact that they were both written by Tennessee Williams, both deal with alcoholism, and both have issues with sexuality.”

These tools are examples of how to help students make connections between the known and the unknown. Instructional leaders should understand the importance of background knowledge and give teachers feedback about developing and activating it. **PL**

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