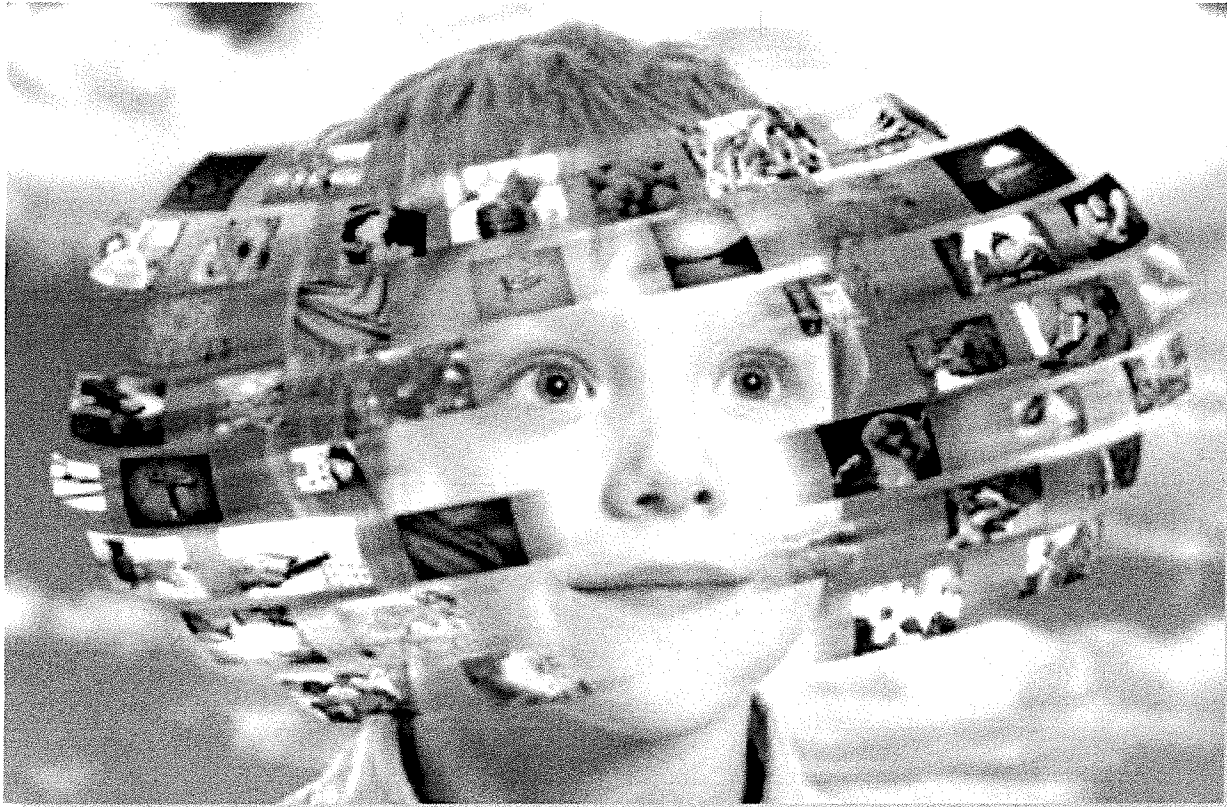


by JOAN SEDITA, M.A.

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# Background Knowledge and Reading Comprehension Strategies



A recent article “Why American Students Haven’t Gotten Better at Reading in 20 Years” in *The Atlantic* (Wexler, 2018) addressed the critical role that background knowledge plays in the ability to comprehend. The article subtitle was “Schools usually focus on teaching comprehension skills instead of general knowledge – even though education researchers know better.”

The piece suggests that educators have treated comprehension as a set of skills, when in fact comprehension depends primarily on what readers already know. The article refers to a panel of literacy experts convened by officials who oversee the National Assessment of Educational Progress. As a member of the panel, Daniel Willingham, explained:

“Whether or not readers understand a text depends far more on how much background knowledge and vocabulary they have relating to the topic than on how much they’ve practiced comprehension skills. That’s because writers leave out a lot of information that they assume readers will know. If they put all the information in, their writing would be tedious. But if readers can’t supply the missing information, they will have a hard time making sense of the text.”

Willingham and like-minded literacy experts posit that the best way to boost students’ reading comprehension is to expand their knowledge and vocabulary by teaching them history, science, literature, and the arts, using curricula that guide kids through a logical sequence from one year to

the next. Willingham has been making this point for a long time. I first read a piece he wrote about this in 2006 “How Knowledge Helps” around the same time I read E.D. Hirsch’s 2007 book “The Knowledge Deficit”, in which Hirsch claims that the solution to improving reading comprehension is to teach a core set of content topics over the grades.

In another 2006 Willingham article, “The Usefulness of Brief Instruction in Reading Comprehension Strategies”, Willingham made the case that, even though decades of research shows that teaching reading comprehension strategies is effective, he considered them a “bag of tricks that can indirectly improve comprehension” and called for less explicit instruction of comprehension strategies. He wrote a later article in 2014 “Can Reading Comprehension Be Taught?” that begins with this:

“In this commentary, we suggest that reading comprehension strategy instruction does not actually improve general-purpose comprehension skills. Rather, this strategy represents a bag of tricks that are useful and worth teaching, but are quickly learned and require minimal practice.”

Having spent many years successfully teaching comprehension strategies, especially to struggling readers, Willingham’s 2006 piece took me aback. Since then, I have gained a better understanding of the complex factors that contribute to reading comprehension and have a greater appreciation for the role that background knowledge plays. However, I still believe that teaching general knowledge is not THE solution to reading comprehension deficits as Willingham and The Atlantic article claim.

Part of the issue has to do with how much inference is typically required during reading. As Willingham notes, writers leave out a lot of information that they assume readers will know. Here are some examples (from Oakhill and Cain, 2016):

#### Example 1:

Bobby was busy with his bucket and spade. The sandcastle was nearly complete. Then a huge wave crashed onto the shore. On seeing that his day’s work has been ruined Bobby started to cry.

- Inference: Bobby was making a sandcastle.
- Background knowledge needed: a bucket and spade is used to make things out of sand at the beach
- Inference: The sandcastle was ruined by the wave
- Background knowledge needed: incoming tides cause waves to come onto the beach and flatten sand sculptures

#### Example 2:

Johnny carried a jug of water. He tripped on a step. Mom gave him a mop.

- Inference: Johnny spilled the water when he tripped.
- Background knowledge needed: experience with spills and the mess they make

These are very simple examples, but they show why reading comprehension is a dynamic interaction between the reader and the text. It is a process of simultaneously extracting and constructing meaning and most texts cannot be understood without contributions from readers, including background and “world” knowledge. Clearly, readers must have sufficient background knowledge in order to construct meaning through inferences, especially when reading academic, subject area text. But they ALSO need a set of meta-cognitive strategies to process and organize the information they are reading. That’s where explicit instruction of strategies comes in. Tim Shanahan referenced The Atlantic article in a recent blog post (2018) although his position about the importance of background knowledge was more measured:

“Research has long shown the importance of knowledge in comprehension. If a reader knows much about a topic, his/her reading comprehension rises. Studies of what American kids (and adults) know about science, geography, economics, technology, and history suggest that Professor Willingham has a point. Our kids simply don’t know enough. (There are great inequities in knowledge distribution, just as there is great inequality in reading attainment.)”

Shanahan points out that, in addition to devoting a significant amount of time to reading and writing instruction, it is important to provide time for reading about content to build background knowledge. Based on experience, I think the kind of “workbook”

activities that were commonly used in the 1970's through the 1990's to teach discreet comprehension "skills" (such as choosing the correct answer from four options for the main idea or a conclusion drawn) were not effective. Students did not apply these skills that they were practicing in isolation to real reading. That's why a long time ago I focused on training content teachers of all subjects to embed strategy instruction and guided practice into content learning using real content reading (see Sedita, 2003, The Key Comprehension Routine). Time and again I have seen very successful results, which is why I can't accept Willingham's conclusion that background knowledge is the main solution and comprehension strategy instruction should be minimal.

**Reference:**

A good example of a comprehension strategy that helps students develop content background knowledge at the same as learning a strategy is teaching students to generating their own questions about what they are reading.

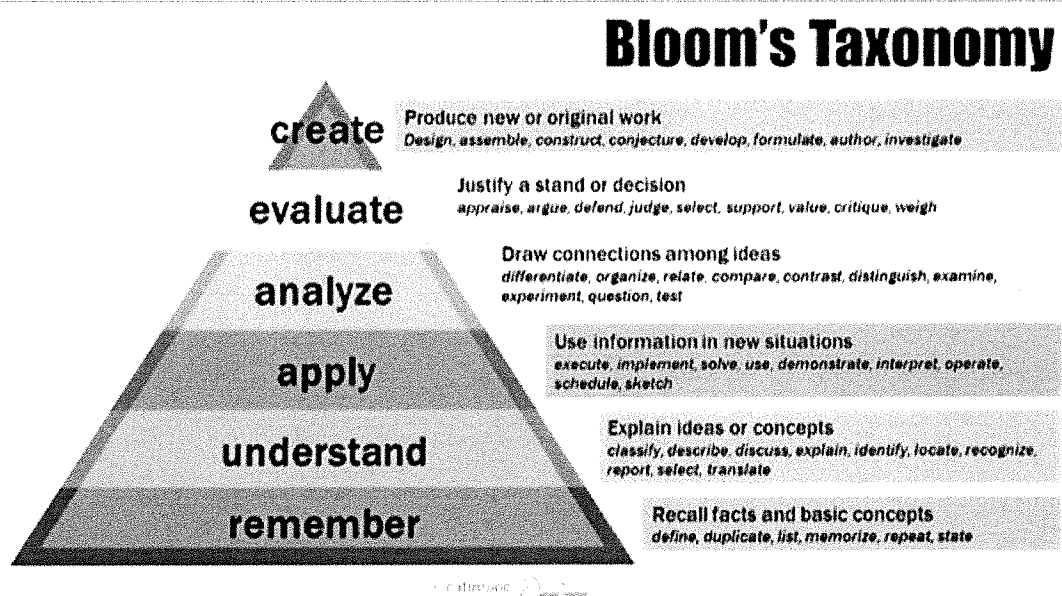
There is significant evidence that learning to generate questions while reading improves memory, integration and identification of main ideas, and overall comprehension (Rosenshine et al., 1996; National Reading Panel, 2000; Trabasso & Bouchard, 2002). Question generation is one of the four student strategy activi-

ties in The Key Comprehension Routine. You can take an online professional development workshop about how to teach question generation by going to the Keys to Literacy Teachable website.

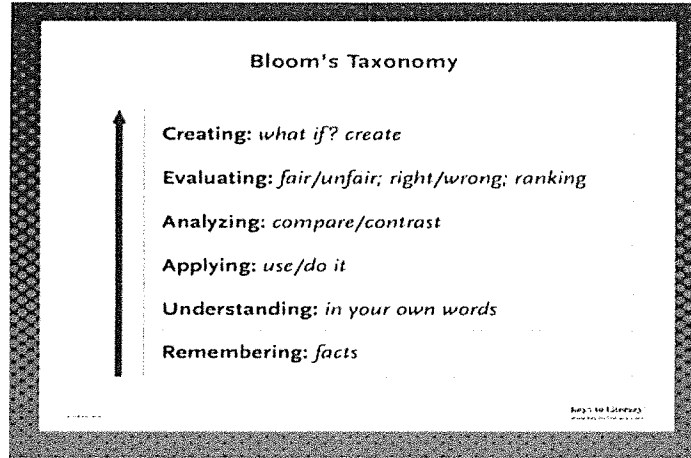
Good readers automatically engage in critical thinking by asking themselves questions to make sense of what they read. Students who have questions on their minds are really thinking critically, and the quality and level of the questions determine the depth of that thinking. However, the ability to generate questions does not come naturally to many students who are accustomed only to using who, what, where, and when questions that require relatively simple, factual information to answer.

**Begin by Teaching a Continuum of Thinking**

Factual questions are important, but students must also learn how to generate the kinds of questions that require them to go beyond readily available information if they are to engage in deeper critical thinking. Teachers should begin by teaching students that there are multiple levels of thinking that range from low-level remembering to high-level synthesizing and evaluating. At Keys to Literacy, we suggest using Bloom's Taxonomy (Bloom, 1956) to explicitly teach different levels of thinking. The chart below provides a brief description of the six levels of thinking represented in Bloom's Taxonomy.



The graphic below shows a poster available through Keys to Literacy that can be hung in the classroom as a reminder to students about the different levels of thinking.



### Teach Question Terms

Some students are not able to generate or effectively answer questions, including those on standardized tests because they are not familiar with question terms. Thus, an important component of instruction for question generation is teaching question terms and phrases for prompts. A related scaffold for this is to provide a list (or hang a poster) of question terms and prompts that are typically associated with each level of thinking. The two handouts below can be downloaded from the free resources page at the Keys to Literacy website: [www.keystoliteracy.com/free-resources/](http://www.keystoliteracy.com/free-resources/).

There is also a poster version available. [www.keystoliteracy.com/store/](http://www.keystoliteracy.com/store/)

### Question Terms

Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Cite	Describe	Adapt	Analyze	Appraise	Assemble
Define	Discuss	Apply	Arrange	Assess	Compile
Find	Explain	Compute	Categorize	Choose	Compose
Give an example	Interpret	Demonstrate	Compare	Conclude	Concoct
Identify	Paraphrase	Dramatize	Contrast	Critique	Construct
Label	Report	Draw	Deconstruct	Critique	Create
List	Restate in own words	Illustrate	Detect	Debate	Design
Locate	Retell	Implement	Dissect	Deduce	Develop
Match	Review	Interview	Distinguish	Defend	Devise
Name	Summarize	Make	Examine	Hypothesize	Formulate
Quote	Translate	Operate	Group	Judge	Generate
Recall		Practice	Inspect	Justify	Imagine
Recite		Role play	Integrate	Prioritize	Invent
Recognize		Sequence	Organize	Rank	Make
Retrieve		Solve	Probe	Rate	Originate
Show		Use	Research	Reject	Prepare
			Separate	Validate	Produce
			Sift		Set up
					What if?

Source: K.S. Hyde, "Taxonomy of Educational Objectives: Handlist 1: The Cognitive Domain," New York: Doubleday Co., Inc.; Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives. Complete edition. New York: Longman.

### Question Prompts

Level	Prompts
Remembering	Where is... What did... Who was... When did... How many... Locate it in the story... Point to the...
Understanding	Tell me in your own words... What does it mean... Give me an example of... Describe what... What is the main idea of...
Applying	What would happen to you if... How would you solve the problem... If you were there, would you... Find information about...
Analyzing	What other ways could... What things are similar/different? What kind of person is... What things could not have happened in real life? What caused ____ to act the way she/he did?
Evaluating	Rank the events in order of importance. Which character would you most like to meet? Why? Select the best ... why is it the best? Was ____ good or bad? Why? Would you recommend this book? Why or why not?
Creating	What if... What would it be like if... What would have happened if... Tell/write a different ending... Use your imagination to draw a picture of... Pretend you are a... Design a...

Adapted from "Checking for Understanding," Fisher, D.R., and Frey, N. © 2009, ASCD, Alexandria, VA

## Classroom Examples

The examples below show questions at every level of Bloom's Taxonomy for different subject areas. At first, the teacher needs to model how to generate questions, then gradually release responsibility to students following this sequence:

1. Teach just one or two levels of questions at a time, starting with remembering and understanding.
2. Have students work in small groups to identify the level of thinking required to answer a set of sample questions provided by the teacher. Start with questions about familiar topics, then use questions about content reading.
3. Have students work in small groups to generate questions about a familiar topic.
4. Have students work in small groups to generate questions about content reading.
5. Have students work independently in class or for homework to generate their own questions.

Example: English Language Arts -- questions from a novel

<b>Remembering</b>	What gift did Brian receive from his mother?
<b>Understanding</b>	Describe what happened when the plane crashed.
<b>Applying</b>	Have you ever been lost in the woods (or someplace else)? Share your experience with your group.
<b>Analyzing</b>	Compare and contrast Brian with Karana in <i>Island of the Blue Dolphins</i> .
<b>Evaluating</b>	Should Brian have told his father "the secret"? Justify your answer.
<b>Creating</b>	Create an alternate ending to the story.

Example: Mathematics -- question from a textbook

<b>Remembering</b>	Sketch and label the three types of graphs.
<b>Understanding</b>	Describe the pattern of one of your graphs.
<b>Applying</b>	Compute a measure of center and describe what it means.
<b>Analyzing</b>	Arrange the data into a different display from the book and then compare and contrast its appearance.
<b>Evaluating</b>	Choose which graph best presents the data from the book. Explain why you chose this graph.
<b>Creating</b>	What would happen to the graph if the 10% of the top and bottom data were removed?

Example: Social Studies -- questions from a short article

<b>Remembering</b>	Locate the name and the picture of Jean Francois's favorite animal.
<b>Understanding</b>	Explain why Jean Francois studied books about Egypt.
<b>Applying</b>	Write an interview with Jean Francois, asking him three questions about his discovery.
<b>Analyzing</b>	Contrast the Rosetta Stone with our alphabet.
<b>Evaluating</b>	Why is the hieroglyph for sandals a good symbol for Jean Francois? Justify your answer.
<b>Creating</b>	Create a hieroglyph to represent you.

Example: Science -- questions from a short video

<b>Remembering</b>	List the steps of the water cycle.
<b>Understanding</b>	In your own words, tell what happens in the water cycle.
<b>Applying</b>	Illustrate the steps of the water cycle.
<b>Analyzing</b>	Assess how pollution affects water conservation.
<b>Evaluating</b>	Debate whether it is better to take a shower or a bath.
<b>Creating</b>	If you could only use one gallon of water a day, what would be the best way to use it?

### ABOUT THE AUTHOR:

JOAN SEDITA is the founder of Keys to Literacy, a professional development organization based in MA. Since 1975, Joan has been a literacy educator and nationally recognized teacher trainer. She has authored numerous books, articles, and professional development programs. She worked for 23 years as a teacher and administrator at the Landmark School, a pioneer in the development of literacy intervention programs. Joan was a lead MA training for Reading First and a LETRS author and national trainer. Joan received her M.Ed. in Reading from Harvard University. She can be reached via email: joan@keystoliteracy.com

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