

# How to Know What Students Know

*William Himmele and Pérsida Himmele*

**Total participation techniques get all students engaged with content, giving teachers feedback about what they know.**

Think about the traditional question-and-answer session that happens daily in many classrooms. We ask a question directed at the entire class, wait for hands to go up, and then select one of the few hands raised.

It provides us with a great assessment of the students on whom we've called. But what about the other students? Are they with us? And how do we know? What evidence do we have that they're actively processing the content using higher-order thinking? Despite what we know about the importance of having students actively process concepts, we still get caught in the rut of the traditional Q & A. At times, it has its place in the classroom. But we prefer to think of it as the culmination of well-structured opportunities to process concepts—rather than the jumping-off point. In other words, if we start with the traditional question-and-answer session, we're doing things backward. One solution to this problem is the use of *total participation techniques*, which provide teachers with evidence of active participation and cognitive engagement from all students at the same time. These techniques function as formative assessments that help teachers accurately monitor progress, provide feedback, and modify instruction. Compared with the traditional question-and-answer scenario, they give teachers a lot more bang for their buck.

## The Ripple Effect

Practically speaking, how does a teacher get total participation in a class that includes shy students, English language learners, students receiving learning support, and students who are both interested and uninterested? We call the solution *rippling*.

Picture a ripple in a pool of water. It starts with the initial plunk of the pebble and then expands outward in concentric circles. Think of the initial plunk as each individual student first processing the question or prompt.

In other words, we begin by allowing a little extra time for each student to process the prompt in a quick-write or a quick-draw. This is especially important for struggling or disengaged students. The quick-write or quick-draw also serves as a formative assessment because it provides teachers with data on what students do and don't understand.

From the initial plunk, we move to the inner circle. In classroom terms, this means that after each student has had a brief time to process the prompt, students break out into pairs or small groups to share what they've learned.

Finally, we bring it to the outer circle—in other words, we open up the prompt to the whole group. Because each student has spent time processing the concept, the whole-group responses will now be more meaningful and more inclusive of all students.

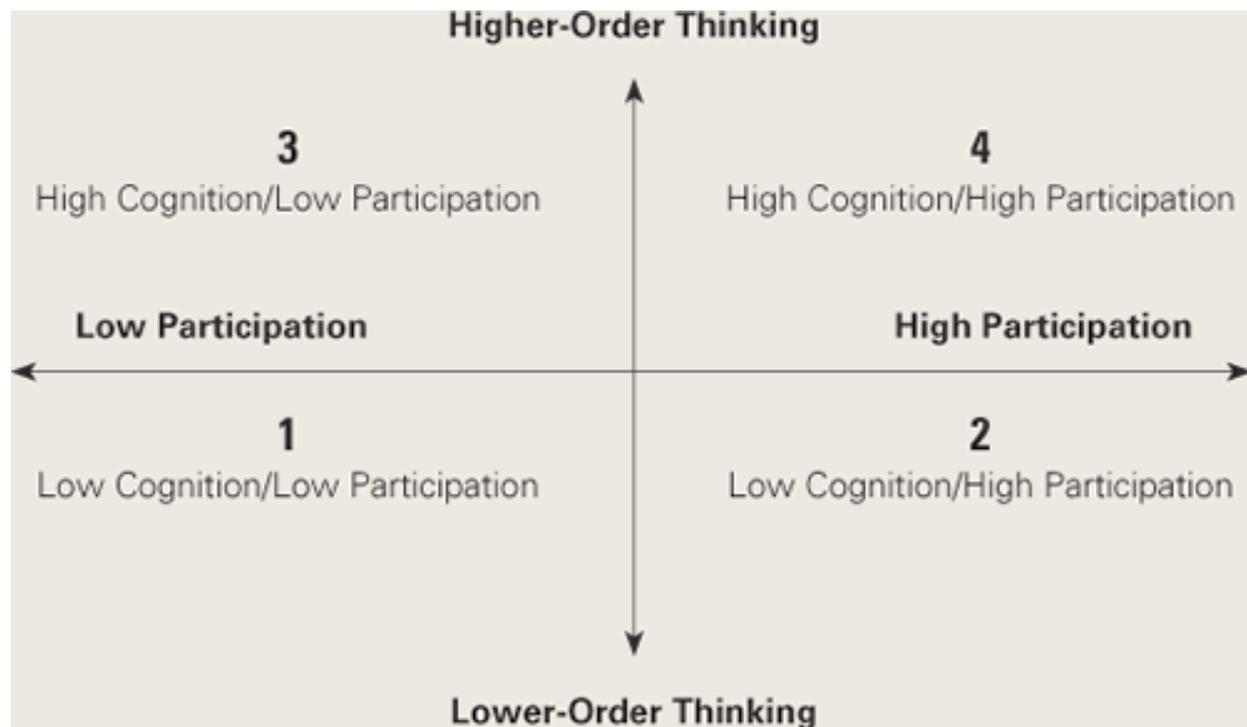
The quickest way to turn off the minds of shy students, English language learners, students receiving learning support, and those who are generally uninterested is to ask

your questions in the form of a traditional Q & A. If you want to reach all students, *ripple* your questions.

## The Essential Ingredients

One caution here: You can have all your students participate in an activity and still provide a pretty shallow and forgettable learning experience. Great learning experiences need to include two components—high participation and high cognition—as illustrated in Figure 1.

**FIGURE 1. Total Participation Techniques Cognitive Engagement Model**



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The first is obvious: All students need to actively participate in the activity. The second may not be so obvious: Ideally, all students should be immersed in activities that rely on higher-order thinking. Although teachers may spend time in each of the four quadrants pictured in Figure 1, it's crucial that activities throughout the day revisit Quadrant 4, in which both high cognition *and* high participation take place.

Higher-order thinking makes the content stick. It requires students to make meaning by analyzing, making connections, and evaluating. It's much more student-constructed than teacher-delivered. And students love it.

## Strategies to Get You Started

To ensure total participation and cognitive engagement in their classrooms, teachers must continually address the following questions: What higher-order prompts would support students in thinking deeply about the content? What quick tools can I use throughout my lesson that will give me evidence that each student is using higher-order thinking? Here are some strategies that work.

## **The Chalkboard Splash**

The chalkboard splash is a simple way to get all students focused on the big picture of your lesson. It starts with a question or a prompt. For example, for a unit on Japan that included an overview of Eleanor Coerr's *Sadako and the Thousand Paper Cranes* (Penguin, 1977), 7th grade history teacher James Michaud had students do a quick-write. He asked them to connect what they had learned about Hiroshima to the book, which recounts the true story of Sadako, a young Japanese girl who developed leukemia from the radiation. Sadako spent her time in a nursing home creating origami cranes in the hope of making a thousand of them.

Students were to respond to the prompt, What was it about Sadako that made other Japanese people feel connected to her and proud of her? Then Michaud asked students to summarize their main points in a sentence or two, grab a piece of chalk, and write their comments on the board. Wrote one student, "They were proud that Sadako never gave up." Wrote another, "Others had leukemia as well, but Sadako tried to fight the illness."

For 3rd grade teacher, Susan Hagel, the prompt was based on a literature unit using Kate DiCamillo's *The Miraculous Journey of Edward Tulane* (Candlewick Press, 2009), which recounts how a cold-hearted china rabbit changed from being arrogant to being loving. Students reflected on the following in a quick-write: "Edward says he's a different rabbit now. Do you believe he's changed? Why or why not?" Students then summarized their quick-writes in a sentence, which they wrote on chart paper, with each student initialing his or her response. Students commented on the fact that the rabbit finally learned to think about others and that he also learned to love. Both Michaud and Hagel asked their students to read their peers' responses and develop a summary statement that highlighted similarities and differences in point of view.

This simple activity enabled Michaud and Hagel to gauge the learning of all their students at the same time. Hagel provided additional support by monitoring students' progress during quick-write and journaling activities. She noted, "I prompt students through questions to deepen their thinking. For example, I might say, 'I see you wrote that the rabbit has changed. What happens in the story that makes you think that?'" For Michaud, the chalkboard splash enabled students to express their beliefs and see what everyone else in the class was thinking, too. He also collected the quick-writes and provided feedback, such as pointing out similarities among classmates' responses or probing students' understanding by asking thought-provoking questions.

For best results, so that students are not sitting at their seats disengaged while peers copy their responses, keep this activity brief by giving students an approximate word count. For example, you can ask students to keep their responses to one sentence, or to about 15 words or fewer. Or you can give them a half-sentence prompt to complete, such as, "The Japanese felt connected to Sadako because ... "

## **The Debate Team Carousel**

The debate team carousel begins with a yes-or-no question that requires students to analyze an issue (see fig. 2). Hagel asked her 3rd graders to reflect on their reading and address the prompt, "Should children be allowed to work on farms?" Hagel told students to hold their answers in their brains and search for supporting evidence. She then asked them to fill in the first box on the debate team carousel sheets, which asked them to write down their opinion and give a reason why they thought that way. One student reflected that children should work on farms because it would help the farmers.

**FIGURE 2. Debate Team Carousel**

Students' responses to "Should children be allowed to work on farms?"

<p>1. Write your opinion and give a reason why you think that way.</p> <p>Yes, children should work on farms because the farmers are going to need money in life and children should help to.</p>	<p>2. Read your classmate's response. In this box, add another reason that would SUPPORT what your classmate wrote.</p> <p>(A) Another reason yes is because rules would change their way of life and make it harder to stay in work.</p>
<p>3. Write a reason that might be used to argue AGAINST what is written in boxes 1 and 2.</p> <p>I think no because some chores are dangerous.</p> <p>(J)</p>	<p>4. Read what is written in the 3 boxes. Add YOUR opinion and YOUR reason for it in this box.</p> <p>(C) I think yes because kids can get ready to own their own farm. they own would be able to get money.</p>

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Hagel then asked the students to pass their papers to the person sitting to their right. Those students addressed the prompt in the second box, which asked them to read their classmate's response and add another reason why they supported that point of view. One student suggested that by working on farms, children might be more likely to want to own a farm when they grow up. After initialing the second box, the students passed the paper to the person sitting on their right, who was asked to refute what was written in Boxes 1 and 2, again, initialing

his or her response. Several students suggested that children shouldn't work on farms because it's too dangerous.

The papers were passed once again, this time asking the recipients to read the comments in all three boxes, state their opinion, and provide reasons why they held that opinion. The papers were then returned to their original owners, who were eager to read their peers' arguments for and against their initial positions.

This strategy gave Hagel deeper insights into each of her student's abilities:

It showed me that my students are able to think deeper, build off others' thinking, and add inferences to take their thinking further. It also gave me a different perspective on those who don't normally participate orally. I can see their thinking, and [this helps me] find a way to make their thinking deeper. I can also look for ways to build the confidence of certain students, so they will share their thinking orally.

The information she learns from this technique also enables Hagel to strategically pair students who tend to demonstrate more shallow thinking with those who consistently model deeper thinking.

## **Picture Notes**

For 3rd grade teacher Krista Grimm, students' upcoming trip to Philadelphia presented opportunities to explore biographies of famous historical figures, such as Betsy Ross and Benjamin Franklin. For each of the readings, Grimm selected designated *picture-pause points*: She would pause and ask students to illustrate what they considered the most important parts of the section they were reading. Grimm noted that the picture pauses enabled students "to focus on determining what was most important in relation to our history. Students were able to sketch what they were visualizing and let the less important details go."

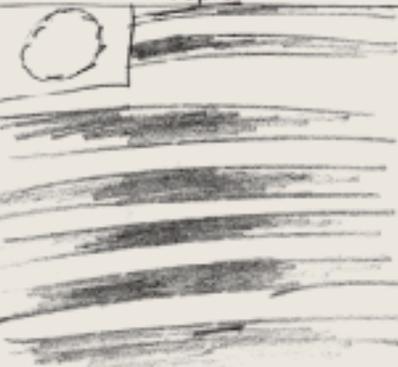
Figure 3 illustrates a student's picture notes on the biography of Betsy Ross. Grimm wanted students to understand how the flag was designed; remembering personal details about Ross's life—such as her childhood and her husband dying in the war—was not so important. In Picture Pause 1, Caleb shows George Washington coming to Betsy Ross's shop; in Picture Pause 2, he shows the six-pointed stars that Washington suggested; and in Picture Pause 3, he shows Betsy's final design—a series of five-pointed stars arranged in a circle.

### **FIGURE 3. Picture Notes**

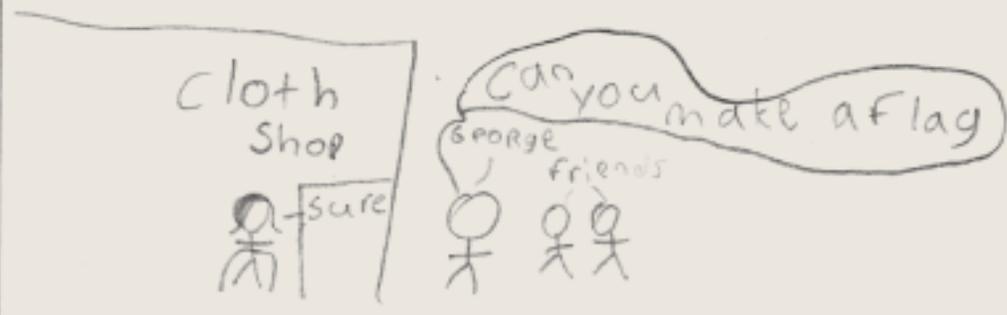
Name Caleb

Maxwell

Picture Note Template

Picture Pause #1	Picture Pause #2	Picture Pause #3
Topic	Topic	Topic
		

What is important to remember about Betsy Ross?



Betsy Ross made the first american flag

Caption - Why is that important to remember?

It is important because it was part of when America came independent.

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The activity also helps focus students' questions. Grimm pointed out that students "were so focused on being accurate with their picture pause that often, as they were sketching, they would ask clarifying questions." Several students asked what five-pointed stars looked like as opposed to six-pointed stars.

The picture notes particularly benefit students who struggle to articulate what they know, such as English language learners and students receiving learning support. These students benefit from the extra scaffold of starting off by drawing a picture rather than by writing down their thoughts. The pictures become a stepping stone for them to articulate their understandings. Grimm, who works with a high number of English language learners, found that "students who were successful during the picture pause were able to use [the notes] as their guide while writing." The pictures also show teachers what students need help to understand. Noted Grimm, "The students who needed more discussion or who didn't quite get the big ideas during the picture pause met in a small group before writing."

### **Create Your Own Strategy!**

Reading specialist Nancy Rowan and her kindergartners were collectively reading Joe Cowley's and Elizabeth Fuller's *Mrs. Wishy Washy's Farm* (Penguin, 2003), an engaging story about some disgruntled farm animals whose owner has so scrubbed them down that they decide to run away. Rowan gave students small plastic farm animals to place on the parts of the page that made them believe that a certain event was going to occur. Some of the students placed their figures on a picture, such as on the animals' surprised faces. Others, who could read, placed their figures on specific words or dialogue, such as on the chef's threat to cook the runaway animals. Rowan then asked her students to explain to a peer why that particular part of the book made them infer that a certain event would occur. Rowan called on volunteers to explain their thinking to the class.

The small plastic figures became an effective tool to ensure total participation and higher-order thinking. Rowan also uses the feedback from this strategy to reteach concepts in small-group lessons for those students who might benefit from this intervention.

### **It Doesn't Come Naturally**

We'd love to tell you that using total participation techniques has become automatic. But that would be a lie. The fact is, we need to frequently remind ourselves to use them. Unfortunately, all too often, our answers come more automatically to us than the questions that require students to process the content. When we're passionate about our content, it's far too easy to get lost in the talking. To combat this, we consistently have to revisit our lesson plans to make sure we're offering active participation and cognitive engagement opportunities to students throughout the day.

But it's worth the work. Total participation techniques provide simple and effective ways to cognitively engage students and assess the depths of their understandings, enabling the teacher to modify instruction and deliver targeted feedback.

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in Millersville, Pennsylvania. Their most recent book is [\*Total Participation Techniques: Making Every Student an Active Learner\*](#) (ASCD, 2011).  
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