

# The Curious Classroom

## Answers About Questions

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Curiosity may have killed the cat, but it seems to be the key to keeping learners engaged and intellectually agile in the classroom. In the "curious classroom," carefully crafted questions, generated by both teachers and students, enhance student learning. My own curiosity has made me aware of the critical role of questions in the classroom.

Some years ago, I was working with a group of 6th grade teachers looking at student work. A science teacher in the group shared an end-of-unit test from the class's study of the laws of motion. On the front side of the test was a multiple-choice section, and on the back were several open-ended questions. We noticed in particular that one student who received an A on the test had aced the multiple-choice questions but given minimal responses to the open-ended questions. It was clear that while this student apparently had excellent recall of the facts, she lacked understanding of the underlying concepts, which greatly concerned the science teacher. This led to a discussion of the possibility that rote memorization can stifle real learning, while intentional questioning can help students reflect; connect to content; and experience deep, transferable learning.

I recently asked this teacher how that realization has affected her classroom practice. She said that she now asks questions at the end of each class period, such as, "Why did we do this lab today?" "What do you think you were supposed to learn?" and "What questions do you have?" These queries provide students opportunities to process learning. She also now asks "what if" questions, such as, "What if we had done things differently?" And the students generate their own "what if" questions after lab work. The students now share responsibility with the teacher for generating questions—and for finding answers.

My own curiosity about questioning and my awareness of the positive impact genuine questions can have on student learning come from my experience as an artist, a teacher, and particularly an instructional coach. Questioning can take many forms and sets the tone in a classroom. Too often, the teacher asks all the questions and the students' job is to supply the correct answers. Along the same lines, we all catch ourselves asking questions to which we already know the answers and sometimes answering them for our students.

A number of simple strategies use and generate questions to move learning forward and ignite interest in a subject, including admit and exit slips, entry boards, KWL charts, Socratic seminars, and café conversations. But any strategy is only as effective as the quality and tone of the questions posed. While some questions stop students in their tracks, others accelerate learning by honoring students' knowledge, helping students connect with one another, suggesting what is possible in a discipline, and leading to deeper understanding.

In the example of the science lesson, "Do you understand why this experiment turned out the way it did?" is a question that can be easily dodged by students. "What variables affected the results of this experiment?" goes a little further, particularly if some probing questions follow. However, "What would happen if we introduced a new variable into this experiment?" requires students to reflect, analyze, and make predictions based on prior experience, moving them to the next level of learning. In the same way, "What important thing did you learn today?" elicits a much richer array of responses than, "Does everybody understand?"

Strategically timing when to ask specific questions during the course of a lesson can have an impact on learning. Posing questions before beginning a new unit allows teachers to discover and honor what students already know and to create excitement about what is coming next. Asking questions during learning can encourage students to engage

with one another, which can lead to more questions. Also, asking questions at the end of a class period can help students synthesize what they have learned.

It can be risky to ask questions that go to the heart of what a student does or does not know, and reviewing responses to these questions can make any teacher feel vulnerable. A middle school math teacher recently told me that at the end of a lesson, she invited students to write exit slips about what they had learned that day. When she reviewed the slips later, she was surprised to discover that three-quarters of the students had misunderstood the same thing. She said, "I thought I'd done a great job teaching this concept, that it was a slam dunk, when in fact I needed to work more closely with the students to find out where the misunderstanding had occurred." Artful, intentional questioning can lead to true learning for both students and teachers.

Of course, writing about questions leaves me with more questions, curious to learn more about how to develop and use this powerful instructional tool. If this has raised questions for you, too—well, that's the idea.