



Are There Any Questions?

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One of the most common problems in instruction is the overuse of the general or "call-out" question. The author proposes that general questioning does not provide the intended diagnostic data about student learning, nor does it engage the student sufficiently in the lesson. This learning module introduces methods that improve the quality of questioning skills in teachers. Emphasis is placed on asking directed questions, and asking questions that access critical thinking skills in students. Teachers are also encouraged to use a sufficient amount of wait time in the question and answer process.

The student teacher was doing a great job with the lesson. She was just perking along enthusiastically presenting high quality content in an interesting way. She was being very clear in her explanations, and her rapport with the students was top notch. Yes sir, she was going to be a great teacher someday. I sat back in my chair and basked in my own glory at the good job I had done in training such a highly motivated and well-prepared teacher for the field.

And then it happened. I was not expecting it, and it hit me like a ton of bricks. That student teacher of mine was up in front of the class asking a general "call-out" question. To the casual observer, her "Are there any questions?" was nothing special. To me it was an intellectual sneeze, a cognitive cough in an otherwise disease free lesson. I sat up in my chair, and watched that well-planned lesson degenerate into a questioning frenzy. The more questions she asked, the less she engaged the class and the fewer correct answers she received. It was obvious that she had contracted the "common cold" of teaching -- the "call-out" question.

In case you are not familiar with a "call-out" question, let me define it for you. A "call-out" is when the teacher asks a question of nobody in particular in a class. The question goes out to the entire class and is not directed to any student in particular. As an educational tool it is practically useless. Yet teachers use it as if it were one of the greatest teaching tools available to them. I once clocked a student teacher at 90 questions in a 30-minute period. At 20 seconds per question, I wonder how much time the students had to answer the question.


What is wrong with this type of questioning, why is it detrimental to the learning process, and how can teachers sharpen questioning skills and be


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more effective? The first mistake that teachers make is using questions as a form of classroom management. Teachers, new ones particularly, are taught to make certain that the class is engaged in the lesson so as to prevent discipline problems from cropping up. As a result, they turn to questioning as a primary mode of classroom management. Questions are best suited as diagnostic tools that indicate student academic progress or assess critical thinking.

These teachers naturally assume that flinging question after question out to the class is engaging the students in the lesson. In fact, the opposite is often true. Whenever a teacher presents a general question to the class, three things might happen. One, the student who knows the answer will blurt it out before anyone else in the class has had a chance to think about the question and formulate an answer. The quick draw answer wins, and the other students are not rewarded because they were too slow in coming forth with the correct answer.

The second thing that might happen is that the students who crave attention will answer the question even though they are clueless as to what the correct answer is. They are motivated by a strong desire for attention, and call-out questions give them an opportunity to get some. It is obvious to the class that such students are engaged in attention-getting behavior.

The third thing that often happens is that the student who is really unsure of his or her academic ability or is having difficulty understanding the subject matter will not attempt to answer. Therefore, the teacher is clueless as to the student's academic progress, at least until test time rolls around. Trying to correct deficiencies in student learning is very difficult to do after the unit test has been administered. Questions are tools of the teacher's trade. They must be skillfully used to be effective. Here are a few suggestions for improved questioning skills.

ASK DIRECTED QUESTIONS

Call on individual students to answer questions. Let's say that you are teaching a unit of instruction on forestry. Call on a student, and then ask the question.

"Bob, what is the common name for *Quercus alba*?"

If you have been asking general questions, students might be programmed to shout out an answer at this point. Strongly discourage students from answering unless they are called upon. If Bob doesn't know the answer, probe a little bit to find out what he does know.

"Bob, first of all, give me the names of all the oaks we have studied in this class thus far."

The key point is to get Bob to give you a correct answer to at least a portion of the question. The message this will send to the class is that they are expected to know the material and are responsible for their own participation in the class. Furthermore, students who experience success in class activities are likely to perform with less anxiety in the class. However, you must stop short of embarrassing Bob in front of the class. If you embarrass students, they are likely to get nervous and be unable to answer the question even though they might know the answer, or they might exhibit misbehavior in order to deflect attention from their inability to answer the question.

One disadvantage to the method described above is that the other students in the class might be encouraged to take a mental break while you probe

for an answer with Bob. A variation of this technique is to ask the question, then choose a student to answer. This keeps the rest of the students on their toes.

“Okay, I’m going to ask a few questions about the oaks we have studied in this class.” (It helps at this point if you glare at the class with your evil eye to encourage compliance.) “Nobody answer until I call your name.”

It is important to spread out the questions evenly in the class. It is also important that teachers not rule out entirely the use of general questions, because they do serve a useful purpose when followed up with directed questions.

“How many of you have ever visited a commercial tree farm? Raise your hands” From the show of hands, call on a student to answer this question. “What were some of the things you noticed about how pines are transplanted, Jennifer?”

General questions can help set up the use of directed questions in a class. The key thing to remember is that they must be used sparingly. Otherwise, they lose their effectiveness.

ALLOW FOR WAIT TIME

The average wait-time for a response to a question is one second, and a teacher’s reaction to a student’s response when it comes is usually less than one second (Rowe, 2003). By extending the amount of time a teacher waits for an answer, some interesting things happen. First, the student’s answer is more thorough and involved (Moore, 1998). Second, the students exhibit a greater command of language specific to instruction. One significant result of increased wait time is that the number of correct student responses increases along with the quantity of appropriate student responses (Rowe, 2003). When a teacher demonstrates to the students that questions are a serious matter and not some ploy to cause them to behave, they tend to respond in a more serious and engaged manner. Increased wait time also increases participation by lower-achieving students and reduces the number of questions asked by the instructor overall (Rowe, 2003). Even a quickly paced lesson has time for an additional 2 to 3 seconds of wait time between questions and answers.

ASK DIVERGENT QUESTIONS

Martin (2003) found that most questions asked by teachers on tests are at the lowest level of Bloom’s cognitive domain. Most questions are convergent – they converge on one answer only. That is, there is one correct answer to the question. Try asking questions that stimulate original thought and higher order thinking by encouraging students to think of possibilities (Davis, 1993; Moore, 2003).

“What are some possible solutions to dealing with Verticillium Wilt, Larry?”

Divergent questions have more than one correct response. By asking these types of questions, teachers encourage students to be creative and analytical in their thinking. With the rapid advancement of technology, it is essential that students learn how to think through problems. Unfortunately, many teachers have difficulty determining the difference between open and closed questions (Martin, 2003). Asking a mixture of convergent and divergent questions helps students to develop good problem-solving skills (Cashin, Brock & Owens, 1976). An example of how a teacher can use both types of questions can be found in Table 1. A

social studies teacher might ask the question,

“Who is the current secretary of state?”

After the students answer, “Colin Powell” or whomever the person might be at that point in history, the teacher can then ask a proving question.

“If you were Colin Powell, how would you approach the current situation in Upper Mongolia?”

Additional information regarding convergent and divergent question types, and examples of each can be found in Table 1.

Table 1 - Types of Questions

Convergent Questions	Divergent Questions
Have a single answer or limited number of correct answers.	Have many correct answers.
Involve the recall of facts.	Are used to encourage students to think and solve problems.
Are sometimes referred to as closed or closed-end questions.	Are sometimes referred to as open or open-ended questions.
Examples of Convergent Questions	Examples of Divergent Questions
How many Presidents of the United States has the state of Virginia produced?	Why do you suppose that four out of the first five Presidents of the United States came from the state of Virginia?
Who is the current secretary of state?	If you were just elected secretary of state, what would be the first thing you would do on the job?
In what year did the war of 1812 end?	What were the underlying causes of the war of 1812?

Questions are designed to be diagnostic tools to measure how much the student has learned and how well the instructor has taught the material. Used effectively, they can also encourage students to develop problem-solving skills that they can use throughout the lifelong learning process. Using questions for their intended purpose causes teachers to teach better. Teachers must continually measure the quality and depth of their instruction in order to be effective. Stop asking those general questions aimed at no one in the class, and start asking more directed questions that get at the heart of student learning. Now, are there any questions?

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