

## COMMON MISTAKES WITH QUESTIONING

**Thoughtful questioning, including lots of broad questions, is a great way for instructors to facilitate student thinking and to learn what students' ideas are.** But many instructors have become accustomed to asking mostly narrow questions, and many students have been well-trained to try to figure out what the instructor wants them to say and to try to deliver that when they answer. It takes attention to break these patterns. Here are some mistakes to be aware of that are often made by instructors when questioning:

### **Making Students feel "led by the nose" by "broad" questions with an agenda**

Sometimes questions that sound broad are really narrow, because they are asked with a specific answer in mind. An instructor's responses to students' answers can show that they were looking for a particular answer, so it's not really a broad question.

Example of a "broad" question with an agenda:

Instructor: What do you think might have made those holes in the wood?

Student: I think it was a bird.

Student: I think it was an insect

Instructor: What's an insect about the same size as those holes?

Student: Maybe beetles?

Instructor: Bingo!

For the students, these questions serve as narrow questions, and the experience becomes one of "guess what's in the instructor's head." Students quickly figure out that the instructor is actually looking for a specific answer, and students will probably stop participating if they don't know the answer.

A different approach: If the instructor had used accepting responses and follow-up questions, like, "what makes you think that?" it would've been a truly broad question, and would've led to exploration, thinking, and the instructor learning more about what is going on in students' heads. Exploration and discussion can feel fake to students if they feel the instructor is trying to pull them towards certain ideas and get them to "guess what's in my head." If it feels like a sincere broad question, and students don't sense an agenda, more will participate and share more divergent thinking. If you want students to know something specific, it's often better to just tell it to them, rather than to ask them a narrow question and have them guess till they say the answer you wanted them to say.

### **Not responding acceptingly to student responses.**

Asking mostly broad questions and being thoughtful about using narrow questions is key, but that's not enough - it also matters how you respond to what students say.

Example of a non-accepting response to a student's response to a broad question:

Instructor: What do you think might have caused sand to be piled up on one side of this log?

Student: Maybe an animal piled it there.

Instructor: No, it doesn't look like an animal piled it.

When students respond to a broad question, an instructor should be accepting of pretty much whatever the student says during that exchange. If students sense that their responses are being judged by the instructor, or if the instructor corrects them, they will realize that the question was not truly broad. And even if an instructor is not telling students their answers are "right" or "wrong," students can pick up on other cues, like when an instructor gets excited about one answer, but is ho-hum about another, or just through body language. These tend to turn off

student thinking and discussion.

A different approach: Student answers to broad questions should get neutral-ish responses from the instructor, that show interest, but a lack of judgment. For example saying, “Hmm, that’s interesting. What do others think of that idea?” The instructor can ask follow up questions, such as, “What makes you think that?” These should be asked in a fairly neutral voice, so students aren’t just trying to get a positive reaction from the instructor, but are focused on figuring out the challenge they’ve been given.

### Asking a quick barrage of leading narrow questions

Students can also feel led by the nose when instructors misuse narrow questions by asking a bunch of them in a quick sequence.

Example of a narrow question barrage:

Instructor: Are the leaves green?

Student: Yes.

Instructor: Do green leaves photosynthesize?

Student: Yes.

Instructor: So, does this plant photosynthesize?

Student: Yes.

Although the instructor may think this was a productive discussion, and that the student understands the concept, because they answered every question “right,” the student had no chance to share their ideas. The instructor started off with an easy narrow question, then kept following it up with a series of more narrow questions. This has the effect of breaking the idea down into tiny simple steps, each of which takes very little effort and understanding. The student may just be guessing what answers they think the instructor wants them to say, and saying them. Their answers don’t necessarily mean they understand a concept, and the instructor learns very little about what the student knows.

A different approach: The instructor could’ve asked a broad question, such as, “what have you heard about leaves and photosynthesis?” along with follow-up questions to bring out student ideas on the topic. Broad questions lead to deeper responses that show students’ thinking. If misconceptions came up, the instructor could deal with those with evidence and reasoning. If there is specific content that the students need, the instructor can tell that to them.

### Asking a narrow question to start discussion.

If the instructor’s goal is for students to share a specific response, they should ask a narrow question. But sometimes instructors ask narrow questions when they’re hoping to start a discussion, which usually doesn’t work.

Example of a narrow question used to try to start a discussion:

Instructor: What is the biggest animal in the ocean?

Student: Giant squid?

Instructor: There’s an animal bigger than that.

Student: A whale shark?

Instructor: A whale shark is big, but this is bigger. Think mammals.

Student: A whale?

Instructor: What kind of a whale?

Student: A blue whale?

Instructor: Yep, and blue whales are the biggest animal to ever live on Earth.

One way to tell that the question is narrow and it's not a real discussion is when the instructor starts giving students hints at the answer they're hoping for.

A different approach: To start discussion or exploration, use broad questions and accepting responses. Broad questions (for example, "what do you think is the most successful organism on Earth?") have multiple possible answers, and that makes them interesting to think about and discuss.