

Questioning Strategies

Planning questions

Effective questioning sessions in classroom require advance preparation. While some instructors may be skilled in extemporaneous questioning, many find that such questions have phrasing problems, are not organized in a logical sequence, or do not require students to use the desired thinking skills.

LEVELS AND TYPES OF QUESTIONS

Questioning should be used to achieve well-defined goals. An instructor should ask questions that will require students to use the thinking skills that he or she is trying to develop. [Bloom's Taxonomy](http://citl.illinois.edu/docs/default-source/default-document-library/bloom's-taxonomy-(revised).pdf?sfvrsn=2) ([citl.illinois.edu/docs/default-source/default-document-library/bloom's-taxonomy-\(revised\).pdf?sfvrsn=2](http://citl.illinois.edu/docs/default-source/default-document-library/bloom's-taxonomy-(revised).pdf?sfvrsn=2)) is a hierarchical system for ordering thinking skills from lower to higher, where each level requires a student's mastery of the skills below it. It is not essential that an instructor be able to classify each question at a specific level. The Taxonomy is introduced as a tool which is helpful for defining the kinds of thinking skills instructors expect from students and for helping to establish congruence between the instructor's goals and the questions he or she asks.

People often refer to "lower-level" and "higher-level" questions or behaviors, rather than assigning a specific level to those questions or behaviors. Lower-level questions are most appropriate for:

- evaluating students' preparation and comprehension
- diagnosing students' strengths and weaknesses
- reviewing and/or summarizing content

Higher-level questions are most appropriate for:

- encouraging students to think more deeply and critically
- problem solving
- encouraging discussions
- stimulating students to seek information on their own

Typically, an instructor would vary the level of questions within a single class period. For example, an instructor might ask the higher-level question, "How can style of writing and the thesis of a given essay be related?" If she gets inadequate or incorrect student response to that question, she might ask lower-questions to check whether students know and understand the material. For example, she might then ask, "What is the definition of *thesis statement*?" or "What are some characteristics of different writing styles?"

In addition to asking questions at various levels of the Taxonomy, an instructor might consider whether he is asking closed or open questions. A closed question is one for which there are a limited number of acceptable answers, most of which will usually be anticipated by the instructor. For example, "What is the definition of an adjective?" An open question is one for which there are many acceptable answers, most of which will not be anticipated by the instructor. For example, "What is an example of an adjective?"

Both open and closed questions may be used at any level of the Taxonomy:

	Lower-level	Higher-level
Closed	What are the stages of cell division?	Given the medical data before you, would you say this patient is intoxicated or suffering from a diabetic reaction?
Open	What is an example of an adjective?	What are some ways we might solve the energy crisis?

STEPS FOR PLANNING QUESTIONS

- Decide on your goal or purpose for asking questions. Your goal should help you determine what levels of questions you will ask.
- Select the content for questioning. Choose material which you consider important rather than trivial. Students will study and learn based on the questions you ask. Do not mislead them by emphasizing less important material.
- Ask questions that require an extended response or at least a "content" answer. Avoid questions that can be answered "yes" or "no" unless you are going to follow with more questions to explore reasoning.
- Until you are quite skilled at classroom questioning you should write your main questions in advance. Arrange your list in some logical sequence (specific to general, lower level to higher level, a sequence related to content). Should you think of additional or better questions during the questioning process, you can be flexible and add those or substitute them for some of your planned questions. However, having a prepared list of questions will help to assure that you ask questions appropriate for your goals and representative of the important material.

- Phrase your questions so that the task is clear to students. Questions such as "What about foreign affairs?" do not often lead to productive answers and discussion. "What did we say about chemical bonding?" is too general unless you are only seeking a review of any material the students remember.
- Your questions should not contain the answers. Avoid implied response questions when you are genuinely seeking an answer from the class. A question such as "Don't we all agree that the author of the article exaggerated the dangers of agent orange to strengthen his viewpoint?" will not encourage student response.
- When planning your questions try to anticipate possible student responses. Anticipating student responses should help in your planning by forcing you to consider whether the phrasing is accurate, whether questions focus on the goal you have in mind, and whether you have enough flexibility to allow students to express ideas in their own words. You might consider the following:
 - What are some typical misconceptions that might lead students to incorrect answers?
 - Am I asking an open or closed question?
 - What type of response do I expect from students, a definition? Example? Solution?
 - Will I accept the answer in the students' language or am I expecting the textbooks' words or my own terms?
 - What will my strategy be for handling incorrect answers?
 - What will I do if students do not answer?

Handling student responses to questions

An important aspect of classroom interaction is the manner in which the instructor handles student responses. When an instructor asks a question, students can either respond, ask a question, or give no response.

STRATEGIES TO USE WHEN STUDENTS RESPOND

- **Reinforcement:** The instructor should reinforce student responses and questions in a positive way in order to encourage future participation. The instructor can reinforce by making positive statements and using positive nonverbal communication. Proper nonverbal responses include smiling, nodding and maintaining eye contact, while improper nonverbal responses included looking at notes while students speak, looking at the board, or ruffling papers. The type of reinforcement will be determined by:
 - The correctness of the answer. If a student gives an answer that is off-target or incorrect, the instructor may want to briefly acknowledge the response but not spend much time on it and then move to the correct response.
 - The number of times a student has responded. Instructors may want to provide a student who has

never responded in class with more reinforcement than someone who responds often.

Be sure to vary reinforcement techniques between various verbal statements and nonverbal reactions. Try not to overuse reinforcement in the classroom by overly praising every student comment. Students begin to question the sincerity of reinforcement if every response is reinforced equally or in the same way.

- **Probing:** The initial response of students may be superficial. The instructor needs to use a questioning strategy called probing to make students explore initial comments. Probes are useful in getting students more involved in critical analysis of their own and other students' ideas. Probes can be used to:
 - Analyze a student's statement, make a student aware of underlying assumptions, or justify or evaluate a statement. **Instructor** *What are some ways we might solve the energy crisis?* **Student 1** *would like to see a greater movement to peak-load pricing by utility companies.* **Instructor** *What assumptions are you making about consumer behavior when you suggest that solution?*
 - Help students deduce relationships. Instructors may ask students to judge the implications of their statements or to compare and contrast concepts. **Instructor** *What are some advantages and disadvantages of having grades given in courses?* **Student 1** *Grades can be a motivator for people to learn.* **Student 2** *Too much pressure on grades causes some students to stop learning, freeze, go blank.* **Instructor** *If both of those statements are true, what generalizations can you make about the relationship between motivation and learning?*
 - Have students clarify or elaborate on their comments by asking for more information. **Instructor** *Could you please develop your ideas further?* **Instructor** *Can you provide an example of that concept?* **Student** *It was obvious that the crew had gone insane.* **Instructor** *What is the legal definition of insane?* **Student** *It was a violation of due process.* **Instructor** *Can you explain why?*
- **Adjust/Refocus:** When a student provides a response that appears out of context, the instructor can refocus to encourage the student to tie her response to the content being discussed. This technique is also used to shift attention to a new topic. **Instructor:** *What does it mean to devalue the dollar?* **Student:** *Um—I'm not really sure, but doesn't it mean that, um, a dollar doesn't go as far as it used to? Does that mean it's devalued?* **Instructor:** *Well, let's talk a little bit about another concept, and that is inflation. How does inflation affect your dollar?*

STRATEGIES FOR RESPONDING TO STUDENT QUESTIONS

There are many ways in which an instructor can respond to questions from students. However, all strategies begin with this important step: *Listen to the student's question.* After you are certain that you understand the question, be sure that other students have heard and understood the question. Then proceed with one of the following strategies:

- Answer the question yourself. This strategy is best when you have little time remaining in class. The

disadvantage of this approach is that you do not encourage student-to-student interaction or independent learning.

- Redirect the question to the class. This strategy helps to encourage student-to-student interaction and to lessen reliance on the instructor for all information.
- Attempt to help the student answer his own question. This may require prompting through reminders of pertinent previously learned information. Or this strategy may require you to ask the student a lower-level question or a related question to begin his thought process. The advantage of this strategy, as in redirecting, is that the student may learn the process of searching for answers to his own questions rather than relying on the teacher. The risk is that the process can be embarrassing or so threatening that the student will be too intimidated to ask questions in the future. Obviously some human compassion is called for when using this strategy.
- Ask the student to stop after class to discuss the question. This strategy is most appropriate when a student raises complicated, tangential questions or when a student is obviously the only one who does not understand a point and a simple answer does not clarify it for the student. Even in these situations there are risks in using this strategy. Students may be intimidated from raising questions in class. The instructor may think that only the questioning student does not understand when actually a number of students are having the same problem.
- Refer the student to a resource where she can find the answer.
- Defer the question until a more appropriate time if the question is not connected to the material you're covering. *Be sure to note the question and the student, and to return to the question at a more appropriate time.*

No matter which strategy you use you should return to the student after addressing the question and determine whether the response has satisfied the student.

If you don't know the answer to a student question *never fake an answer*. Admit that you cannot answer the question and then select one of these strategies or others you find appropriate:

- Ask whether someone in the class can answer the question. Most times after class you should follow this with an attempt to determine whether the information provided was accurate or based on sound reasoning and credible sources.
- Either propose a plan for obtaining evidence for answering the question or ask the students to suggest how the question could be investigated.
- If possible, suggest a resource where the student can find information. The resource may be written material, another faculty or staff member, a student, or someone from the community.
- Volunteer to find the answer yourself and report back to the class. Make sure you actually do return with the answer if you choose this option.

STRATEGIES TO USE WHEN STUDENTS DON'T RESPOND

- **Redirect:** When a student responds to a question, the instructor can ask another student to comment on his statement. One purpose of using this technique is to enable more students to participate. This strategy can also be used to allow a student to correct another student's incorrect statement or respond to another student's question. ***Instructor:** Ali, do you agree with Mark's comment? **Instructor:** From your experience, Aisha, does what Vito said seem true? **Instructor:** Li, can you give me an example of the concept that Pat mentioned?*
- **Rephrasing:** This technique is used when a student provides an incorrect response or no response. Instead of telling the student she is incorrect or calling upon another student, the instructor can try one of three strategies:
 - The instructor can try to reword the question to make it clearer. The question may have been poorly phrased. ***Instructor:** What is neurosis? **Student:** (No response) **Instructor:** What are the identifying characteristics of a neurotic person?*
 - The instructor can provide some information to help students come up with the answer. ***Instructor:** How far has the ball fallen after 3 seconds? **Student:** I have no idea. **Instructor:** Let's break down the question, Ann. How do we measure distance?*
 - The instructor can break the question down into more manageable parts. ***Instructor:** What is the epidemiology of polio? **Student:** I'm not sure. **Instructor:** What does "epidemiology" mean?*
- **Using "wait time":** One factor that can have powerful effects on student participation is the amount of time an instructor pauses between asking a question and doing something else (calling on a student or rewording the question). Research on classroom questioning and information processing indicates that students need at least three seconds to comprehend a question, consider the available information, formulate an answer, and begin to respond. In contrast, the same research established that, on average, a classroom teacher allows less than one second of wait-time. After teachers were trained to allow three to five seconds of wait-time the following significant changes in their classrooms occurred (from Rowe, 1974):
 - The number of students who failed to respond when called on decreased.
 - The number of unsolicited but appropriate responses increased.
 - The length of student responses increased.
 - The number of student statements where evidence was used to make inferences increased.
 - The number of responses from students identified by the teacher as less able increased.
 - The number of student-to-student interactions increased.
 - The number of student questions increased.

Allowing wait-time after a student response or question also produced significant changes in classroom interaction. The most notable change was that the instructor made fewer teaching errors characterized by responding illogically or inappropriately to a student comment.

On the other hand, too much wait-time can also be detrimental to student interaction. When no one seems to be able to answer a question, more wait-time will not necessarily solve the problem. Experts say that waiting more than 20-30 seconds is perceived as punishing by students. The amount of wait-time needed in part depends upon the level of question the instructor asks and student characteristics such as familiarity with content and past experience with the thought process required.

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