Questions and Critical Thinking

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How can you stimulate critical thinking with the questions you ask in the classroom? Can these questions motivate students? Indeed, there are practical techniques, which work, that can help educators ask questions to stimulate critical thinking in class. Those of you with a strong background in education literature will recognize the influence of the critical thinking literature, teaching techniques of Madeline Hunter(1), and techniques of teaching(2).

**Imaging Technique.** Imagine that you are teaching your favorite class. Things are going well, and you decide to ask a question. Picture what you would do in the classroom. You look out over the whole class, you hear the sounds of papers rustling and students settling into their seats, you smell that chalk-overheads-classroom smell you’re familiar with, you see and hear yourself ask a question that is personally relevant to each student in the class, you pause as they consider their answers, you feel that tension to say something and resist, you ask who wants to answer, watching as almost everyone’s hand goes up, you note that Pat one of the quieter students has raised his/her hand, you ask Pat, get a great answer, and praise Pat for the response—secretly hoping to see Pat’s hand up again in the future, the class is energized, excited about the topic, and wants to learn more.

That is my hope for you as you understand and implement these techniques. What are the key components of that scene? Did you achieve what you wanted from that question?

Some of the goals in asking the question were to get the interest of the students, to start them successfully working with the material—thinking critically, and to get feedback from the class. Similarly, some of the things that motivate students include: things of interest to the students, success, and feedback. Not every question achieves these goals.

**Avoid This Approach.** You name the person and ask a question: “Linda, what is the most important political aspect of health care?” Notice how all the rest of the students are secretly saying “Phew, I’m off the hook.” When the student gives an answer that is different from the one you were searching for you say, “No” and ask another, when s/he gives an answer other than the one you hoped for you decide to give a hint—“remember this is a class on critical thinking.” You have been playing that mind-numbing game called “Read the teacher’s mind”.

**Consider This Approach.** Now, class, I want each of you to think about what you consider to be the most important political aspect of health care. In this situation, each person must come up with a response because they understand that they might be called on for an answer. You ask the first person—say good—who else has this as an issue (many in the class raise their hands, and are involved in the class through that action). You ask someone who has a different issue, they did not raise their hand, and you involve more of the class.

**Components of Asking a Class question.** What are some of the components of an effective question? The question should involve the self, the teacher should avoid identifying the target until after the question has been asked, a pause for time to consider an answer is important, the student should receive a success feeling with the response, and the student should receive feedback from the teacher.

Suppose that you want to use questions to motivate (energize) the class in critical thinking. What motivates people? Extrinsic motivation is gained from an activity that leads to a goal (working for money is a good example because the money is used to help the individual reach some goal, perhaps own a fancy car.) Intrinsic motivation means that the activity itself is the goal, the person is motivated to do what they are doing for the pleasure received from the activity. Studying to get a grade (extrinsic) or studying because of interest in material (intrinsic) can motivate a student to do well on a test. If students have intrinsic motivation, all you need to do is get them started and leave them alone. They want to learn. What factors can help students develop this intrinsic motivation?

**MOTIVATING FACTORS**

Factors that can get students motivated include interest, success, and feedback.

**Interest.** One way to generate interest is to connect the question to things of interest to the student. How is ___ like you? What would you do if you ___. Another way to help generate interest is to make a connection to things that the students already know. Students also develop interest when you help them feel that they have expanded their thinking or view things differently (emphasis on them not on differently) or tie ideas to their emotions. Critical thinking can give students a feeling that they now view things differently—they have learned and grown from the class experience. Another way to generate interest is through novelty. Students tend to remember the unusual, the unexpected, or the need to develop a different view because of what they have learned.

**Success.** To achieve success in the questions that are asked, you control the level of difficulty of the question. For example, ask people questions that match their ability to give you an answer, a well-prepared student will get a tough

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question, and you will ask a student just starting to get involved in the class a more straightforward question. With practice, both students can be successful in their responses. Control question difficulty so that students can give the correct answer. Remember, students will exert more effort if no humiliation is expected in the process.

Incorrect Answers and Success. When a student gives an incorrect response, the teacher should dignify the response; give the student a prompt to help generate the correct answer; and hold the student accountable rather than simply going on to the next student. This is your chance to assess people in the class, are they at the level that you had hoped for in class? Are students thinking critically or just feeding back the information that they memorized? To dignify the answer, try to find something positive about the response. Sometimes it helps to determine the wrong direction that the person is following (you are thinking about hospital settings, but we are talking about a retail problem); it often helps to take the student’s off-the-wall response and show them that they are actually partially correct or that some famous pharmacist/scientist also had that thought. You can model self analysis and self correction (critical thinking skills) when errors are made. Let’s say the student is studying the Hersey-Blanchard management theory and you ask how this famous leadership model could be used in training a new pharmacy worker (interpretation and/or synthesis in critical thinking.) The student answers that you should treat everyone equally (equity theory). You can respond that this is a management theory, but that Hersey-Blanchard actually recommends treating people in different ways depending on their competence and motivation, and mention that in class we talked about it as one that contrasts with equity. You could ask the student, “Do you want some help? Who could you pick that could give the right answer?” After you get the correct answer, then ask the original person—is that right? Avoid letting people off the hook when they say “I don’t know” or “That’s what I was thinking.” That reinforces not answering and makes it easier to “not think” in question sessions.

Feedback. Students are motivated to receive feedback, the knowledge of the results of their thinking. Is this what the teacher was searching for in this question? Feedback is best when it is immediate and specific. If students know what you expect and when they are not meeting your expectations, they can change to correct responses in the future. With no feedback, students can not assess how their efforts are perceived by the teacher.

Some of the outcomes that motivate teachers are identical to the processes that motivate students: interest, success, and feedback. By motivating the student through the teacher’s attempt to set a supportive and positive class atmosphere, the teacher helps facilitate attempts to develop critical thinking.

Am. J. Pharm. Educ., 58, 422-423(1994); received 9/30/94.

References