

Questions & Critical Thinking

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The Role of Questions in Thinking, Teaching, & Learning

One of the reasons that instructors tend to overemphasize "coverage" over "engaged thinking" is that they assume that answers can be taught separate from questions. Indeed, so buried are questions in established instruction that the fact that all assertions—all statements that this or that is so—are implicit answers to questions is virtually never recognized. For example, the statement that water boils at 100 degrees centigrade is an answer to the question "At what temperature centigrade does water boil?". Hence every declarative statement in the textbook is an answer to a question. Hence, every textbook could be rewritten in the interrogative mode by translating every statement into a question. To my knowledge this has never been done. That it has not is testimony to the privileged status of answers over questions in instruction and the misunderstanding of teachers about the significance of questions in the learning process. Instruction at all levels now keeps most questions buried in a torrent of obscured "answers".

Thinking is Driven by Questions

But thinking is not driven by answers but by questions. Had no questions been asked by those who laid the foundation for a field -- for example, Biology -- the field would never have been developed in the first place. Furthermore, every field stays alive only to the extent that fresh questions are generated and taken seriously as the driving force in a process of thinking. To think through or rethink anything, one must ask questions that stimulate our thought.

Questions define tasks, express problems and delineate issues. Answers on the other hand, often signal a full stop in thought. Only when an answer generates a further question does thought continue its life as such. This is why it is true that only students who have questions are really thinking and learning. It is possible to give students an examination on any subject by just asking them to list all of the questions that they have about a subject, including all questions generated by their first list of questions. That we do not test students by asking them to list questions and explain their significance is again evidence of the privileged status we give to answers isolated from questions. That is, we ask questions only to get thought-stopping answers, not to generate further questions.

Feeding Students Endless Content to Remember

Feeding students endless content to remember (that is, declarative sentences to remember) is akin to repeatedly stepping on the brakes in a vehicle that is, unfortunately, already at rest. Instead, students need questions to turn on their intellectual engines and they need to generate questions from our questions to get their thinking to go somewhere. Thinking is of no use unless it goes somewhere, and again, the questions we ask determine where our thinking goes.

Deep questions drive our thought underneath the surface of things, force us to deal with complexity. **Questions of purpose** force us to define our task. **Questions of information** force us to look at our sources of information as well as at the quality of our information. **Questions of interpretation** force us to examine how we are organizing or giving meaning to information. **Questions of assumption** force us to examine what we are taking for granted. **Questions of implication** force us to follow out where our thinking is going. **Questions of point of view** force us to examine our point of view and to consider other relevant points of view.

Questions of relevance force us to discriminate what does and what does not bear on a question. **Questions of accuracy** force us to evaluate and test for truth and correctness. **Questions of precision** force us to give details and be specific. **Questions of consistency** force us to examine our thinking for contradictions. **Questions of logic** force us to consider how we are putting the whole of our thought together, to make sure that it all adds up and makes sense within a reasonable system of some kind.

Dead Questions Reflect Dead Minds

Unfortunately, most students ask virtually none of these thought-stimulating types of questions. They tend to stick to dead questions like "Is this going to be on the test?", questions that imply the desire not to think. Most teachers in turn are not themselves generators of questions and answers of their own, that is, are not seriously engaged in thinking through or rethinking through their own subjects. Rather, they are purveyors of the questions and answers of others-usually those of a textbook.

We must continually remind ourselves that thinking begins with respect to some content only when questions are generated by both teachers and students. No questions equals no understanding. Superficial questions equals superficial understanding. Most students typically have no questions. They not only sit in silence; their minds are silent at well. Hence, the questions they do have tend to be superficial and ill-informed. This demonstrates that most of the time they are not thinking through the content they are presumed to be learning. This demonstrates that most of the time they are not learning the content they are presumed to be learning.

If we want thinking we must stimulate it with questions that lead students to further questions. We must overcome what previous schooling has done to the thinking of students. We must resuscitate minds that are largely dead when we receive them. We must give our students what might be called "artificial cogitation" (the intellectual equivalent of artificial respiration).