Critical Thinking: Strategies for Improving Student Learning, Part II

By Richard Paul and Linda Elder

In the last column we focused (as a primary goal of instruction) on the importance of teaching so that students learn to think their way into and through content. We stressed the need for well-designed daily structures and tactics for fostering deep learning, offering three strategies as examples. In this column, we provide four additional strategies.

There is no perfect technique for fostering critical thinking, no ideal method for engaging the intellects of students. The strategies detailed in this column suggest some possible ways for helping students take command of what they are learning, integrate and apply what they are learning, and appropriately question what they are learning. These approaches to teaching and learning can be modified in any number of ways. And of course, any one strategy, if used, would need to be integrated into a well-designed course plan.

Most importantly, each strategy presupposes the use of critical thinking concepts and principles to be effective. Each strategy presupposes that the only way to learn content deeply and truly is to think it into individual thinking, to connect it with other important ideas, and to apply it to everyday life issues and problems (Paul & Elder, 2006).

Idea # 4: Teach Students How to Assess Their Speaking

In a well-designed class, students often engage in oral communication. They articulate what they are learning: explaining, giving examples, posing problems, interpreting information, tracing assumptions, and so forth. They learn to assess what they are saying, becoming aware of when they are being vague, when they need an example, and when their explanations are inadequate. Following are three general strategies to teach students to assess their speaking abilities.

First Strategy: Students Teaching Students

One of the best ways to learn is to try to teach someone else. Trouble explaining something often indicates a lack of clarity about the concept.

Second Strategy: Group Problem Solving

By putting students in a group and giving them a problem or issue to work on together, their mutual articulation and exchanges will often help them to think better. They often correct each other and so learn to "correct" themselves. Make sure students are routinely applying intellectual standards to their thinking as they discuss issues.

Third Strategy: Oral Test on Basic Vocabulary

One complex tactic that aids student learning is the oral test. Give students a vocabulary list and time to study the key concepts for the course. Then put them into groups of twos or threes and have them take turns explaining the concepts to each other, encouraging them to assess each other's explanations. Wander about the class listening in, and choose two students who seem prepared for the oral exam. Stop the class and announce that the oral test is going to begin and that "X" and "Y" will be tested first. After testing these two students (and they pass), announce to the class that X and Y have passed and that they are now "certified" to test others. However, anyone "certified" by a student tester must be "spot-tested" by the instructor on one item. If any such student fails the spot test, the person who certified them is "de-certified" (and must repeat the exam). Everyone who passes becomes a certifier and gets paired with a student who has not taken the oral test.

By this method, the instructor only tests the first two students. The rest of the process involves directing "traffic" and spot-checking those who are "certified" by a peer. During this assessment the tester should be looking for a beginning understanding of the concepts and the ability to give examples of the concept. Since the students who pass become "certifiers" or "tutors" and are assigned to assess other students (or tutor them), everyone gets multiple experiences explaining, and hearing explanations of, the basic vocabulary.

We give a vocabulary list to the students on the first day of class so they know exactly which concepts they will be expected to explain during the oral exam and learn the most basic vocabulary early in the course, vocabulary that is then used on a daily basis in class. Individual teachers might want to modify this exam by giving parts of it during or after each chapter (of the textbook).

Idea # 5: Teach Students How to Assess Their Listening

Since students spend a good deal of their time listening, and since developing critical listening skills is difficult to achieve, it is imperative that faculty design instruction that fosters critical listening. This is best done by holding students responsible for their listening in the classroom. Here are some structures that help students develop critical listening abilities:

First Strategy

Call on students regularly and unpredictably, holding them responsible either to ask questions they are formulating as they think through the content or give a summary, elaboration, or example of what others have said.

Second Strategy

Ask every student to write down the most basic question they need answered in order to understand the issue or topic under discussion. Then collect the questions (to see what they understand or don't understand about the topic). Or you might: (a) call on some of them to read their questions aloud, or (b) put them in groups of two with each person trying to answer the question of the other.

Through activities such as these students learn to monitor their listening, determining when they are and are not following what is being said. This should lead to their asking pointed questions. Reward students for asking questions when they do not understand what is being said.

Idea # 6: Design Tests with the Improvements of Student Thinking in Mind

In planning tests, be clear about the intended purpose. A test in any subject matter should determine the extent to which students are developing useful and important thinking skills with respect to that subject. The best tests are those most reflective of the kinds of intellectual tasks students will perform when they apply the subject matter to professional and personal issues in the various domains of their lives. Since multiple-choice tests are rarely useful in assessing life situations, they are rarely the best overall test, though they can assess some supplementary understandings at an entry level.

One type of test that does target more realistic skills is an analytic test of the students' ability to take thinking apart and elaborate accurately each of its elements. Another type assesses the students' ability to evaluate those elements using intellectual standards. In other words, students should learn how to analyze and evaluate thinking within the subjects they are studying.

Analyzing Thinking

After students have learned the fundamentals of critical thinking, and have reasoned through the logic of several teacher-supplied chapters and/or articles, have them figure out the logic of an article during one class period (or the logic of a section of the textbook). This type of test can determine the extent to which they can accurately state an author's purpose, key question, information, conclusions, concepts, assumptions, implications, and point of view.

Evaluating Thinking

Having completed part one above, students could evaluate the author's logic using the following format (Paul & Elder, 2008).

- Is the **question** at issue clear and unbiased? Does the expression of the question do justice to the complexity of the matter at issue?
- Is the writer's **purpose** clear?
- Does the writer cite relevant evidence, experiences, and/or **information** essential to the issue?
- Does the writer clarify key **concepts** when necessary?
- Does the writer show sensitivity to what he or she is **assuming** or taking for granted? (Insofar as those assumptions might reasonably be questioned)?
- Does the writer develop a definite line of reasoning, explaining well how he or she is arriving at his or her **conclusions**?
- Does the writer show sensitivity to alternative **points of view** or lines of reasoning? Does he or she consider and respond to objections framed from other points of view?
- Does the writer show sensitivity to the **implications** and consequences of the position he or she has taken?

This sort of test, attempts to determine whether students are learning to enter viewpoints that differ from their own. Create multiple tests using this same format by changing only the written piece to be analyzed (selecting, of course, pieces whose point of view is significantly different from that of most students). Of course, this test does not determine whether a student will actually empathize with opposing views in real life situations (Paul & Elder, 2006).

Idea # 7: Make the Course Work-Intensive for the Students

There are two significant mistakes to avoid. The first is designing classes so students can pass them without thinking deeply about the content of the course. The second is designing classes so that the instructor must work harder than the students.

In a class that consists mainly of lectures with periodic quizzes and examinations, students can often get a passing grade by "cramming" the night before quizzes and tests. Many students have developed cramming skills to the point that they misleadingly create the appearance of understanding a body of content when they don't. The problem is that most cramming feeds only the short-term memory. Students adept at it will say things like, "I got an A in Statistics last semester, but don't ask me any questions about it. I've forgotten most of what I learned."

If students are to become disciplined thinkers, they need to do a good deal of active thinking to take ownership of the content they are learning. Teachers often make the mistake of thinking that students learn well only when instructors spend hours preparing for class (e.g., learning information they then tell to students). But learning to think well requires many opportunities for practice in thinking through problems and issues and in applying concepts in one's thinking to real life experiences. Students can do this only when classroom structure design requires them to work to understand and apply the fundamentals of the subject. Spoon feeding passive students is a useless activity. Try random sampling grading to reduce the overall amount of grading.

Conclusion

These are just four of many strategies that can be used to foster deep thinking through content. For additional strategies, see our previous and next few columns as well as cited literature.

References

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