

Critical Thinking: Strategies for Improving Student Learning, Part III

By Linda Elder and Richard Paul

In the last two columns we emphasized the importance of teaching so that students learn to think within and take command of content. We discussed the need to design instructional strategies for fostering deep learning, offering seven strategies as examples. In this column, we provide five additional strategies.

As we maintain in all of our columns, teaching for thinking through content is an art, not a science. The strategies we offer suggest some possible ways for helping students think through the logic of the subject with skill and discipline. Accordingly, any of these strategies should be contextualized and tested in the classroom and hence modified where necessary. What works with one group of students contextualized in one way may not work well with another group contextualized in another way.

Most importantly, to be effective every instructional strategy should embed critical thinking concepts and principles in it. Each strategy should be based on the guiding thought that the only way to learn content deeply and truly is to think it into your thinking, to connect it with other important ideas, and to apply it to everyday life issues and problems (Paul & Elder, 2006).

The ultimate goal is for students to learn how to transform their thinking as they learn within subjects and disciplines, to integrate ideas within and among disciplines, and to learn the intellectual skills they need to reason through complex problems in all domains of human thought. What follows are specific suggestions for teaching in this manner.

Idea #8: Explain the Key Concepts of the Course Explicitly during Initial Class Meetings

It is helpful to students if, from the outset of the course, they are clear about the key or organizing idea of the course. By organizing idea we mean the foundational or guiding concept underlying everything covered in a given course. We suggest using the mode of thinking that underlies the course as the organizing idea. For example, the key idea behind most history courses should be historical thinking; for most biology courses, biological thinking; and for most nursing courses, thinking like a professional nurse. To help students understand the guiding concept for the course, discuss the logic of it with them. For example, “The purpose of chemical thinking is ...,” “The kinds of questions, chemists raise are...,” “The kind of information they collect is...,” and so forth. Give examples of the thinking in action and engage students in an activity in which they can experience doing the thinking in an elementary way. If the course is interdisciplinary or deals with a range of modes of thinking (many English classes are), the guiding idea could be “thinking critically about X, Y, and Z.” For example, “We will focus in this class on thinking critically in reading and writing with respect to novels, poems, and plays.”

Idea # 9: Explain to Students What Will Happen on a Typical Class Day

In planning what happens on a daily basis in class, we suggest developing

a routine that directly involves students in thinking. Most students are accustomed to sitting back in class passively and listening impressionistically to a lecture, taking some notes as the spirit moves them. This is usually an ineffective way to internalize class content. In most classes students need practice in active listening, active reading and writing, and disciplined discussion. Design a typical class day so that students are required (by the design) to be actively and thoughtfully involved.

Here is a possible format to use in creating a “typical day”:

1. At the end of each class period, assign some section from the textbook for students to read.
2. Whenever possible, ask students to write out their answer to the key question within those sections.
3. When students come to the next class, place them in pairs or triads.
4. Have each student read his or her answer aloud to the group.
5. As students read their individual answer aloud, have the other students in the group give the reader feedback, focusing on two or three intellectual standards such as clarity, accuracy, and depth.
6. Then lead a brief discussion of the chapter or section the class is focused on, using an engaged lecture format or Socratic dialogue.
7. At the end of the class period, assign another section for the students to read and on the next class day begin this process again.

Idea # 10: Use Class Time for Students to Practice Thinking Within the Content

Apply the following suggestions when teaching historical thinking, biological thinking, mathematical thinking, sociological thinking, anthropological thinking, and so forth.

1. Approach every class session with a clear sense of the relevant thinking appropriate for student activities.
 2. Be prepared to model or dramatize in front of the students the desired thinking.
 3. Design activities so that students both generate and assess thinking.
- In teaching for critical thinking in a subject, design the class so that the instructor models the thinking within that subject. This requires either thinking aloud in front of the class or presenting the class with an example of thinking within the content in written form. After this modeling, plan for students to engage in practice that emulates the model (not slavishly but in the spirit of the model). Shortly after the students engage in some guided practice, they need to assess that practice, thereby discovering their strengths and weaknesses and their present level of understanding. This discovery should become a daily part of student learning, not something they discover 6 weeks later after receiving the quiz results.

Idea # 11: Help Students Understand all Content as a System of Interconnected Ideas

Explain that every system of thought (or body of content) is used by professionals to ask questions, gather data or information, make inferences about the data, trace implications, and transform thinking about the dimension of the world that the subject represents. For example, the following concepts are part of a system that defines modern chemistry: matter, physical properties, chemical properties, atoms, compounds, molecules, the periodic table, law of conservation of mass, atomic and molecular weights, mass number, atomic number, isotopes, and ions. Each idea is explained in terms of other ideas within the subject. The ideas together form an interrelated system. Model the interconnected system of ideas in the content by thinking aloud slowly and deliberately before the students. Explain the specific connections and the thought processes that generate them. Proceed in such a way that students can replicate your example.