

HOW TO IMPROVE STUDENT LEARNING

30 Practical Ideas

Based on Critical Thinking Concepts and Principles

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Introduction

When students think within the content of our courses, they take ownership of the most basic principles and concepts within the subjects we teach. The instructional ideas in this guide are premised in this understanding. Most of our suggestions represent possible teaching strategies. They are based on a vision of instruction implied by critical thinking and an analysis of the weaknesses typically found in most traditional didactic lecture/quiz/test formats of instruction. We begin with two premises:

- that to learn a subject well, students must master the thinking that defines that subject, and
- that we, in turn, as their instructors, must design activities and assignments that require students to think actively within the concepts and principles of the subject.

Students should *master* fundamental concepts and principles before they attempt to learn more advanced concepts. If class time is focused on helping students perform well on these foundational activities, we feel confident that the goals of most instruction will be achieved.

It is up to you, the instructor, to decide which of these ideas you will test in the classroom. Only you can decide how to teach your students. Our goal is not to dictate to you, but to provide you with possible strategies with which to experiment. The specific suggestions we recommend represent methods and strategies we have developed and tested with our students. Judge for yourself their plausibility. Test them for their practicality. Those that work (i.e., improve instruction) keep; those that do not work, abandon or re-design.

The suggestions overlap each other and make most sense when taken together, as an interrelated network. Often one suggestion is made intelligible in the light of two or three others. So if one is not clear to you, read on. The strength of each of them, in re-enforcing each other, will then become increasingly clear.

Recommended Design Features

Idea # 1:

Design instruction so that students engage in routine practice in internalizing and applying the concepts they are learning (and in evaluating their understanding of each).

For students to learn any new concept well they must initially internalize the concept, then apply the concept to a problem or issue so that they come to see the value of understanding the concept. At the same time, they need to evaluate how well they are internalizing and applying the concepts they are learning.

If students are to acquire understandings and skills, we need to provide many opportunities for them to

1. *internalize* the key concepts in the subject, and to
2. *apply* those concepts to problems and issues (in their lives or in their coursework).

It is only when students apply what they are learning to actual situations or problems that they come to see the value in what they are learning. And only when they see the value in learning the content will they be internally motivated to do so.

At the same time students are internalizing concepts and applying them in a meaningful way, they need practice in *evaluating* their work. Self-assessment is an integral part of educated thinking; it would be unintelligible to say of a person that he is thinking in an educated manner, but

Idea # 15:**Explain the key concepts of the course explicitly during the first couple of 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. This is the foundational or guiding concept underlying everything you will be teaching in a given course. We suggest that you use as the organizing idea the mode of thinking that underlies the course. For example, the key idea behind most history courses should be “historical thinking.” For most biology courses: “biological thinking.” For most nursing courses: “thinking like a professional nurse.” To help students understand the guiding idea for the course, discuss the logic of it with them. For example, “The purpose of scientific 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 give the students 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 (as, say, many English classes are), then we suggest that you choose as your guiding idea: “thinking critically about X, Y, and Z.” For example, “We will focus in this class on thinking critically in reading and writing, and with respect to novels, poems, and plays.”

Idea # 24:**Use tactics that encourage active learning.**

Use the following tactics during class to ensure that students are actively engaged in thinking about the content. They should be routinely called upon to:

1. Summarize in their own words what the teacher or a student has said.
2. Elaborate on what has been said.
3. Relate the issue or content to their own knowledge and experience.
4. Give examples to clarify or support what they have said.
5. Make connections between related concepts.
6. Restate the instructions or assignment in their own words.
7. State the question at issue.
8. Describe to what extent their point of view on the issue is different from or similar to the point of view of the instructor, other students, the author, etc.
9. Take a few minutes to put the above responses into written form.
10. Write down the most pressing question on their mind at this point. The instructor then uses the above tactics to help students reason through the questions.
11. Discuss any of the above with a partner and then participate in a group discussion facilitated by the instructor.

Idea # 30:**Systematically question students using a Socratic approach.**

The oldest, and still the most powerful, teaching tactic for fostering excellent thinking is Socratic teaching. In Socratic teaching we focus on asking students questions, not giving them answers. We model an inquiring, probing mind by frequently asking probing questions. Fortunately, the abilities we gain by focusing on the elements of reasoning, prepare us for Socratic questioning. Remember, there is a predictable set of relationships that hold for all subjects and disciplines, since every subject has been developed by those who had:

- shared **goals** and objectives (which defined the subject focus),
- shared **questions** and problems (whose solution they pursued),
- shared **information** and data (which they used as an empirical basis),
- shared modes of **interpreting** or judging that information,
- shared specialized **concepts** and ideas (which they used to help them organize their data),
- shared key **assumptions** (that gave them a basis from which to collectively begin), and
- a shared **point-of-view** (which enabled them to pursue common goals from a common framework).

Each of the elements represents a dimension to be questioned. We can question goals and purposes. We can probe into the nature of the question, problem, or issue that is on the floor. We can inquire into whether or not we have relevant data and information. We can consider alternative interpretations of the data and information. We can analyze key concepts and ideas. We can question assumptions being made. We can ask students to trace out the implications and consequences of what they are saying. We can consider alternative points of view. All of these, and more, are the proper focus of the Socratic questioner.

As a tactic and approach, Socratic questioning is a highly disciplined process. The Socratic questioner acts as the logical equivalent of the inner disciplined voice of reason (which the mind develops when it develops excellent thinking in any subject). The contributions from the members of the class are like so many thoughts in the mind. All of the thoughts must be dealt with and they must be dealt with carefully and fairly. By following up all student answers with further questions, and by selecting questions which advance the discussion, the Socratic questioner forces the class to think in a disciplined, intellectually responsible manner, by continually aiding the students by facilitating questions.

A Socratic questioner should: a) keep the discussion focused, b) keep the discussion intellectually responsible, c) stimulate the discussion with probing questions, d) periodically summarize what has and what has not been dealt with and/or resolved, and e) draw as many students as possible into the discussion.