

## Learning in the Lecture Classroom: Quick and Easy Suggestions for a More Interactive Classroom

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### Abstract

The author provides practical ways to engage students in active learning in the classroom.

Today's educators are urged to change from the instructional paradigm to the learning paradigm. In an article by Barr and Tagg entitled "From Teaching to Learning: A New Paradigm for Undergraduate Education" (1995), the authors discuss the need to shift our focus to student-learning outcomes and away from the process of teacher teaching. The authors make a perfect analogy when they say that using the instructional paradigm is equivalent to General Motors saying that its goal is to run assembly lines, not manufacture cars. Since college teachers are not interested in assembly line teaching, how can we place more emphasis on student learning?

### In a Matter of Minutes

Envisioning changes can be overwhelming and appear more difficult than is the case. Actually, a change from the traditional lecture classroom in which learners are passive can be brought about with relatively little effort. I have developed a protocol for turning hours and hours of traditional lecture notes – from my physical therapist assistant lecture classes at Northern Virginia Community College (where the students had been passive learners) – into active lesson plans where student-centered learning takes place. If the traditional lecture notes already exist, this method only takes only five minutes of planning before class.

I follow the guidance given by the National Research Council in their book entitled *How People Learn* (2000). I start with "knowledge" first. Next, I offer students the opportunities to build on that knowledge (Chap.1). By starting with the teacher's lecture notes, "the knowledge," and putting them into a form that can be given to the students, the teacher can start the process of switching over to the learning paradigm.

Ideally, teachers give their students these lecture notes prior to the students coming to class, but this is not a requirement. One could also hand them to the students in class. In either case, students are asked to engage in activities, in groups of three or four, that provide a learning opportunity as they comprehend, apply, analyze, and synthesize the content of the traditional lecture from these lecture notes. Such an activity works just as well in a classroom of 20 students as in a classroom of 400. Dr. Ike Shibley of the Chemistry Department at Penn State reports that he uses group work in chemistry classes of hundreds of students (2004).

### Types of Activities

Active-learning group activities can be quite varied. One simple assignment is to write a 25-word sentence summarizing only the most important parts of the first half of the first page of the lecture notes. To do this, the students must read the notes, understand them, decide what is important and what is not, categorize them (so as to put like thoughts together), and then discuss this with their group members. These are clearly more advanced skills and a more active way of learning the lecture content than to have the teacher "lecture at" them.

Other examples are to compare and contrast two items on the bottom half of the page, to make a similarities and differences grid, or to come up with examples of how these concepts can be used in the discipline. As these activities suggest, a teacher can go through the entire content of the lecture without ever lecturing – by having the students use higher-level thinking to comprehend, apply, analyze and synthesize the material.

Other examples of activities I have used are the following:

- When teaching about a disease process, I ask students to write a mock letter to their Aunt Dorothy or Uncle Tim, explaining that they have just learned of her/his recent diagnosis with a particular disease. The students must let the letter's reader know, in layman's terms, what this disease is and what treatments are available to her/him.
- I ask the students to come up with two practical reasons they need to know the information that has been supplied to them by the lecture notes.
- Students write or discuss the topic in terms of who, what, when, where, how, and why.
- I ask them to draw a concept map or visual outline to illustrate how all of the concepts in the lecture notes fit together with each other – or with last week's topic.
- Students draw a picture of one of the concepts.
- Students debate two opposing opinions that are expressed in the lecture notes.

And the list is endless. Many excellent examples are given in K. Patricia Cross and Tom Angelo's book, where they write about classroom assessment techniques (1993) that allow for more interaction.

The point is that we need our students to reach those higher levels of Bloom's Taxonomy that they do not often get to reach in a passive, lecture setting. These activities help the students connect disconnected facts, and see the patterns so they know how the facts are connected. There is much criticism that students do not know how to think critically. Perhaps it is because lecture is the most common form of teaching, and this alone does not teach students how to think critically. With this technique, the lecture material will not only be covered in multiple modes, but also a deeper level of learning will be accomplished.

### Thinking in Outcomes

I started using this active response to my lectures notes this past year in "Neuroanatomy, Pathology, and Rehabilitation Techniques." I am happy to report that I am able to cover the entire curriculum in the same amount of time as in my previous lecture mode.

The differences, however, are wonderful: the students are active, grades have improved, and even the quietest students are coming up to me after class to tell me how much they learned. When one student in the class asked, "Could we please do it like this again in lecture tomorrow because I learn so much more?", I knew I was on to something worth continuing.

### References

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