Don’t dump the didactic lecture; fix it

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Submitted 3 July 2007; accepted in final form 26 October 2007

Richardson D. Don’t dump the didactic lecture; fix it. Adv Physiol Educ 32: 23–24, 2008; doi:10.1152/advan.00048.2007.—Numerous articles have been published on the merits of active learning, and collectively they present a body of compelling evidence that these methods do enhance learning. In presenting arguments for active learning, it is often suggested that the traditional didactic lecture is more passive in nature and less effective as a teaching tool. However, a well organized lecture remains one of the most effective ways to integrate and present information from multiple sources on complex topics, such as those encountered in the teaching of physiology. This article presents an argument for enhancing lectures by incorporating active learning activities within their framework, and it is noted that engagement of the student is a key element making active learning activities work. Finally, suggestions are provided on the basis of the author’s experience of things instructors can do to make lecture-based courses more engaging to students and, hence, promote learning.

There have been many articles published in the education literature on the merits of active learning, including a review article on active learning in science education with an emphasis on the teaching of physiology (3). Collectively, these articles cite a plethora of compelling evidence showing that various active learning methods and procedures actually do work to enhance learning.

Although active versus passive learning is not a simple dichotomy, a common factor in most articles on active learning is the suggestion that the traditional didactic lecture is more passive in nature and less effective as a teaching tool compared with active learning methods, such as problem-based learning. However, a well-organized lecture remains one of the most effective ways to integrate and present information from multiple sources on complex topics, such as those often encountered in the teaching of physiology.

So, rather than drop the didactic lecture altogether, I suggest, as have others (4, 5), that active learning exercises be incorporated into traditional lectures. However, one of the challenges in doing so is that the term “active learning” lacks a succinct definition. Descriptions of processes involved with active learning have been offered, such as “providing opportunities for students to talk and listen, read, write and reflect” (5) and “building mental models” (4), but the term itself remains vague. A possible reason for this vagueness, as pointed out in a previous personal view (6), is that active learning is not a particular method, or even a family of methods, but rather an understanding between instructors and students to the effect that students, not teachers, are the ones ultimately responsible for the learning of subject matter and the acquisition of skills. Once this is understood, active learning will follow.

In my experience, the key student behavior that brings active learning about is “engagement” in its simplest dictionary meaning of “to participate in, or to be involved in” (7). This includes mental engagement of students simply by paying attention. In other words, striving to hold students’ attention during a lecture should promote their engagement. Physical activities of students that help to keep them engaged during a traditional lecture range from taking a few notes to participating in active learning exercises, such as the Minute Paper (1) and others outlined for the lecture setting (1, 4).

The following are some things that I have found instructors can do to make lecture-based courses more engaging to students and, hence, promote learning:

1. Carefully scrutinize your lectures for the concepts you want the students to learn and then eliminate details that aren’t really necessary for the understanding of these concepts. This should help your students to focus on the concepts as well as shorten your lectures, giving you a bit of class time to do other things, such as an active learning exercise or two.
2. Once you have settled on details, don’t spell out every one of them in a handout. Leave room and opportunity for the students to take a few notes. Even writing down a word or two here and there helps students to stay engaged.
3. Whenever and wherever possible, use real life examples that the students are familiar with and that are relevant in today’s society. This fits into the schema theory of learning, which basically says that new knowledge is built on a foundation of existing knowledge. For example, in discussing the physiological stress (flight-or-fight) response, ask your students to think about what happens to them, body function wise, in a real “fight” (e.g., arguing with someone) or “flight” (e.g., rhythmic exercise such as jogging or swimming). Don’t use the old, and most antiquated, chased by a sabertooth tiger example. Sabertooth tigers haven’t been around for many millennia, and they probably never coexisted with humans anyway. When using clinical cases as examples, pick ones that your students are likely to
encounter, and for this it helps to think regionally. At the University of Kentucky, we use claudication, a smoker’s disease, to exemplify peripheral blood flow dysfunction because this disorder has a high incidence in Kentucky, a heavy smoking state.

4. In the relevant category, add a few tidbits into your lecture of what has been called the “recondite curriculum” (2). These are the social and behavioral correlates of physiology. For example, in the section of your course on the gastrointestinal system and/or energy exchange, take time to discuss why serving well-balanced meals at a homeless shelter is important. Students typically show a lot of interest in such items, and they really help them to keep their level of engagement high.

5. Do something different every 20 min or so during class to “break the monotony” of lecturing. This could be as simple as having the students stand up and stretch, as complex as having them engage in one of several brief active learning exercises that can be performed in a lecture setting (1, 4, 5), or something in between—one of my colleagues shows one or two vacation slides. Whatever you do, a change of pace ever so often within a lecture recaptures the students’ attention and gets them reengaged.

In brief, if the overall goal of the healthcare profession is to deliver quality health care, then educators need to continually ask what students really need to know to do that and how we can best go about delivering what they need to know in such a manner that they will learn. In this process, don’t give up on the didactic lecture. Fix it so it can be an active learning tool.

REFERENCES