

Presentation II (ELSP 004)

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Should professors use interactive learning environments?

General purpose: to persuade, to inform.

Specific purpose: At the end of my speech I want the audience to describe that real learning only occurs when it is active, i.e. when professors use interactive learning environments.

Proposition statement: Universities should encourage interactive learning in all their classes.

Introduction: Almost all of us are currently students, at least part of our time. And of course, all of us were students in the past. So, I'm sure that everybody here has experienced bad lectures. I know, I did. Lectures, where the professor spoke in a monotone voice, copying his unreadable script on the blackboard, equally unreadable, and where the professor gave the impression that the students only waste his precious time. Did you learn anything in these kind of lectures? I don't think so—these lectures are indeed a waste of time. I'm here today to tell you that real learning only occurs in so-called interactive learning environments. That's why I think that every university should encourage, if not require, its professors to implement interactive learning in their courses.

Preview: In order to talk about interactive learning I will begin by defining this term, so that we all know what this speech is about. Second, I will explain to you the reasons why interactive learning is necessary and why it works. And finally, I will mention some counterarguments or disadvantages of interactive learning environments—and we will see, if these hold when applied to real-life situations.

- I. So, what is meant by 'interactive learning environment'? In one of my classes called 'Graduate Teaching Scholars' my group defined interactive learning as a "two-way process in which the teacher and the learners develop ideas and create learning together using methods and equipment to facilitate this process" (Grad-

uate Teaching Scholars, 1998). In other words, components of interactive learning are besides others

- A. all participants are involved in seeking and creating knowledge for themselves and others,
 - B. the students are active, not only passively taking notes,
 - C. and students are perceived as individuals, not only as containers where you just pour in some knowledge.
- II. So now that we know some parts of interactive learning, why do we want it? Let me give you in our short time only two reasons for it in detail.
- A. One reason for interactive learning is the fact that only by active learning do we really learn something, in comparison to just memorizing something for the next exam.
 - 1. As James Groccia, director of the Program for Excellence in Teaching at the University of Missouri-Columbia puts it in a magazine article (James Groccia, 1997): “As research has repeatedly shown, active learners grow while passive learners barely remember the facts long enough to regurgitate them on a test.”
 - 2. Or have a look at this learning pyramid (Groccia and Miller, 1996) [see slide], developed by the researchers Bruce Hyland and Edgar Dale: We only remember around 10% of what we read. This increases to 30% when we can see it, and to 50% when we also can hear it additionally. Compare these passive methods to active learning: We remember up to 70%, when we can say something or give a talk, or 90% when we actually do the real thing ourselves.
 - B. A second argument for interactive learning environments is peer learning groups where students learn from each other. This works better than learning from a teacher who forgot—as Stephen Brookfield, a distinguished professor at the Graduate School of Education at the University of St. Thomas, St. Paul, Minnesota, puts it (Brookfield, 1996)—the “struggle, demoralization, and total mystification”, the feeling of “just not getting it”. Students speak the same level of language, they have the same background, the same knowledge base, that’s why they understand each other better. When Stephen Brookfield learned swimming he remembers (Brookfield, 1996) that “The person who did most to help me through my anxieties was another learner”.
- III. These are strong reasons why a university should encourage what I defined as interactive learning environments. One main purpose of a university is to help students to learn effectively, so everything in this direction should be done. But what are the arguments against interactive learning that opposing professors bring up? Let me first mention the most prominent arguments and then we’ll have a look

at a real-life example of interactive learning and we'll see, if the counterarguments have a valid point or not. So, what can be said against interactive learning?

- A. Many professors claim that class size might be a problem in implementing interactive learning environments. Well, the MU School of Medicine changed their large lectures into smaller problem-based learning classes, that's one method of interactive learning, five years ago without problems.
- B. Other professors believe that their lectures are so good, that nothing could be better. Can these professors present any research that backs up their claims? I'm not aware of any. I believe this counterargument just shows some fear of something new.
- C. One of the most important arguments against interactive learning is that you can't cover as much material in the available time as in a lecture. While this is true, the question remains: Is the material covered also material that is learned?

Well, I already mentioned the problem-based learning program by the MU School of Medicine. These students covered less material, but did they also learn less? Since last year's class was the first class in this new program the statistics from MU School of Medicine about the results in the independent U.S. Medical Licensing Examination (USMLE), reported by Columbia Missourian at September 25(MU School of Medicine, 1998), are of high interest in this question. The data before the switch to problem-based learning was: 1% of the students performed over the 99th percentile, 4% were over the 95th percentile, 7% were over the 90th percentile, so overall MU students were slightly below the US average; after the switch the numbers read as follows: 8% of the students were over the 99th percentile; that's more than before were over the 90th percentile; 24% were over the 95th percentile, and an incredible 33% of the students performed over the 90th national percentile. Also the highest score in MU history was achieved after the switch! These numbers clearly show: Even though they had less material, they obviously remembered more than those students that covered more material. And they could apply their knowledge! This success is not only impressive but it also shows that the counter arguments turn out to be not real arguments against interactive learning in real-life situations.

Conclusion: So let me summarize: Interactive learning is a process in which the teacher and the learners develop ideas and create learning together, where students participate actively. Because of this they learn and remember better than passive students—just think of the learning pyramid. We saw that peer learning outweighs even good lectures. The MU School of Medicine program showed that class size and less material covered are *not* a problem for implementing interactive learning. Every teacher should be encouraged to involve students. I'd like to end with a quote that is attributed to native Americans as well as to old Chinese proverbs—it summarizes the main advantage of interactive learning quite effectively: "Tell me and I'll forget, Show me and I'll remember, Involve me and I'll understand."

References

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