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Active Learning Overview and Justification

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POWERING THE NEW ENGINEER TO TRANSFORM THE FUTURE

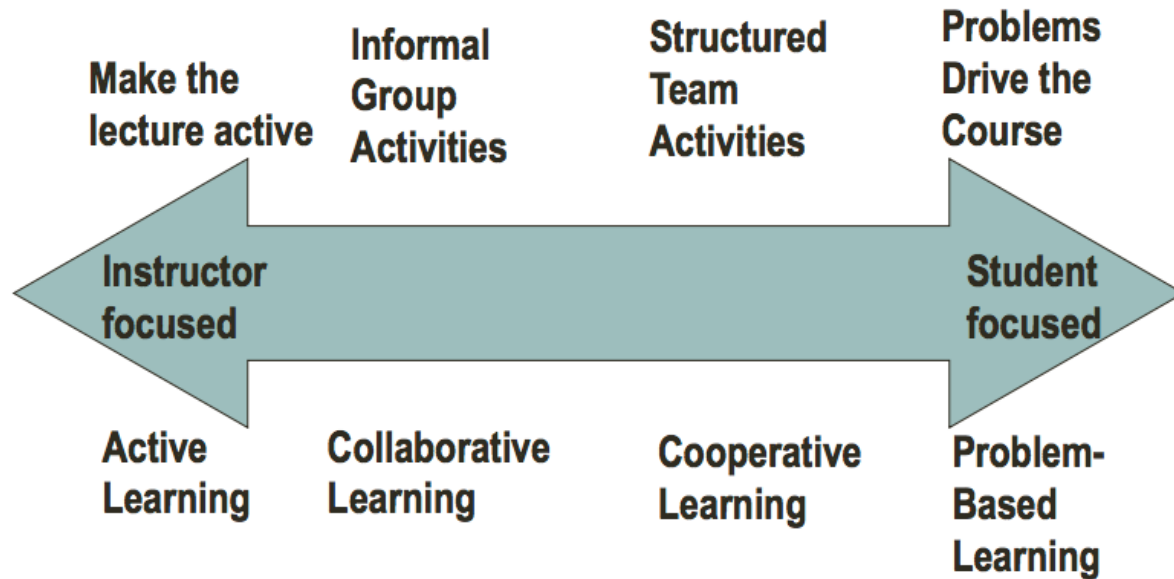
Goals: by the end of this module you should be able to:

- Understand the pedagogical reasons to use active learning techniques
- Describe and contrast different methods of active learning
- Design active learning activities for your class

What is active learning?

- Any teaching method that actively engages students
- Requires students to think about the problem at hand

The Active Learning Continuum



Why bother?

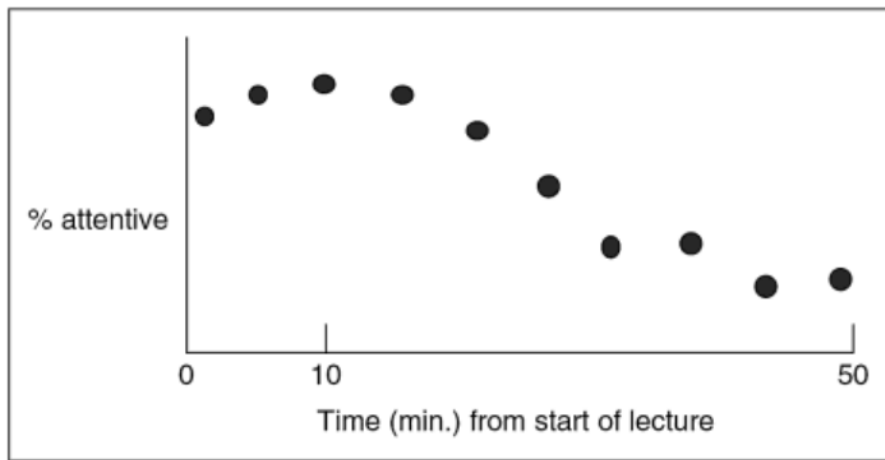


Figure 6.3–1: Attentiveness versus Time in Lecture—No Activities

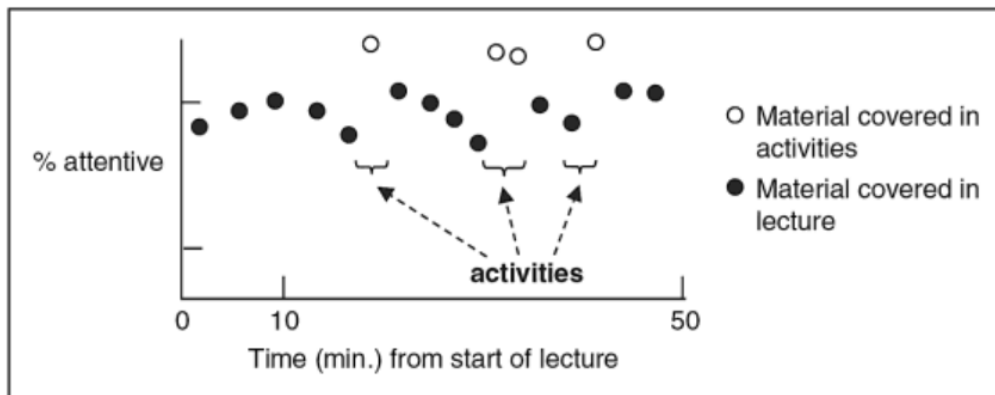
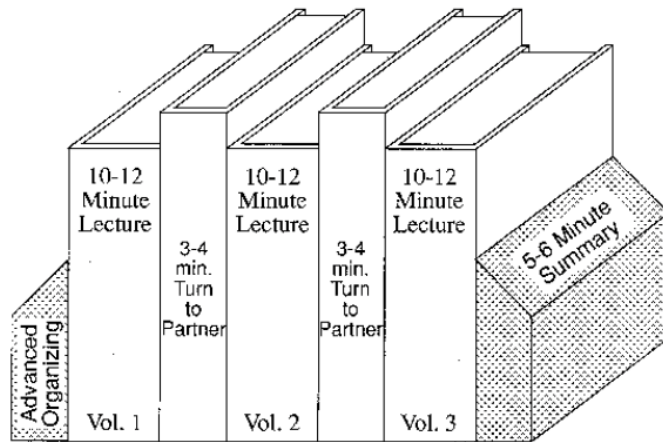


Figure 6.3-2: Attentiveness versus Time in Lecture—Activities Interspersed

Book ends on a class session



Thinking Together: Collaborative Learning in the Sciences – Harvard University – Derek Bok Center – www.fas.harvard.edu/~bok_cen/

Common Concerns

- I'll never be able to cover my syllabus.
- I'll have to spend lots of time designing activities.
- The noise level will become excessive, and I'll waste a lot of time getting the student ' attention back.
- Some students will refuse to get into groups.
- The student will complain that I'm not doing my job, and my student ratings will plummet.

Common Mistakes

- Plunge into active learning with no explanation
- Expect all students to get into groups
- Make activities too long
- Always call for volunteers
- Fall into a predictable routing

Take Aways

- Active learning is anything course-related that students are called on to do in class
- The longer the students sit passively in a class, the more their attention drifts
- Students do better solving a problem rather than seeing you do it on the board
- Break up complex problems into steps
- Avoid common active learning mistakes