Interactive Lecturing

Overview:

In general, the more engaged a student is with the content, the deeper they learn the content and the longer they will remember the content. 📄 Engaged Learning Guide . Thus, for students to *learn* content (not just memorize for a test and then forget), students need to interact with the content.

Strategies for Student Interaction with Lecture Content:

1. **Brief survey/quiz**. After about 8-10 minutes of lecture, pause and give your students a brief quiz over the main ideas you just presented. These are best done without points but done using a clicker system integrated into your PowerPoint so that students can see how many in the class chose which answer. Follow up the quiz with going over the answers, explaining the correct answer.

2. **One-question quiz:** After you explain a major concept, stop and have a slide with a question about the concept. This question should be difficult, one that tests *conceptual* understanding, not facts. After everyone chooses an answer (again, I recommend using a clicker so you can see how many chose which answer), have students get into groups of 3-4. The goal is for each student to try to convince the others in their group that their answer is correct. If the others in the group also chose the same answer, then they must collectively write a persuasive argument why that is the correct answer. Then after 2-5 minutes (depending on how difficult the concept is that you tested them on), have the class re-do the quiz. Usually, this process results in a lot more students getting the correct answer. Follow up with further clarification on the concept.

3. **Real-life examples**. Give real-life examples of the concepts you present. Tell these examples as a narrative story since narrative naturally draws us into deeper thinking.

4. **Think-pair-shaire**. After you discuss a point, have students write an explanation of that point as if they needed to explain the point to a 5th grader. Then have them pair up and share their explanations.

5. **Concept map**. Create a concept map of the major concepts in each unit for your class. Your map should include the major concepts, the second-level concepts, and all linkages (arrows showing causality or relationship between the concepts). Alternatively, have your students create a concept map to test their understanding of the concepts.

Movement

Research from NIH and documented at University of Michigan indicates that physical movement stimulates improved cognitive processing. You can incorporate movement easily into any lecture by pausing after a key point and doing one of these activities:

- **Have students stand up** (or shift in their chair if standing is difficult) after a key point you make. The first time they will be self-conscious, but soon this will become a trigger for them to focus. Give them 30 seconds after they sit down to write notes.

- **If you have space in your classroom** (or if it is nice outside), after a major point, take 10 minutes and have students pair up and share as they walk. For students who have difficulty walking, ask them to move to another location and sit there. Here is a good process:

    - Each student first writes down on an index card 3 things they think are key points.

    - They create groups of 2-3 and share what they put on their card.

    - The pair/group must then brainstorm out loud as they walk an addition 5 sub-points related to the key ideas. These could be an example you gave, a smaller point, a piece of evidence, a logical connection–any detail they remember.

- **Have students move** every 10 minutes–in their seat or standing up. Any kind of arm or leg movement counts. Have them move for 15 seconds.

Resources

- 📄 Interactive lecturing.pdf
    - This article, clipped from *The Teaching Professor*, explains interactive lecturing and gives several examples
- 📄 Improving learning by reducing unnecessary mental load--Weiman Initiative.pdf
    - This article, retrieved from the University of British Columbia, summarizes the key recommendations from Carl Wieman's course on the Science of Teaching and Learning. It has very clear and helpful recommendations to make lectures inclusive and learning-focused
- 📄 Lecturing with Storytelling: Teaching Tip (Center for Teaching and Learning at Oakland).
    - This 2-page handout gives 5 strategies for using stories to explain difficult concepts to improve student learning.