

Keeping students engaged

Engaging students in class through active learning strategies

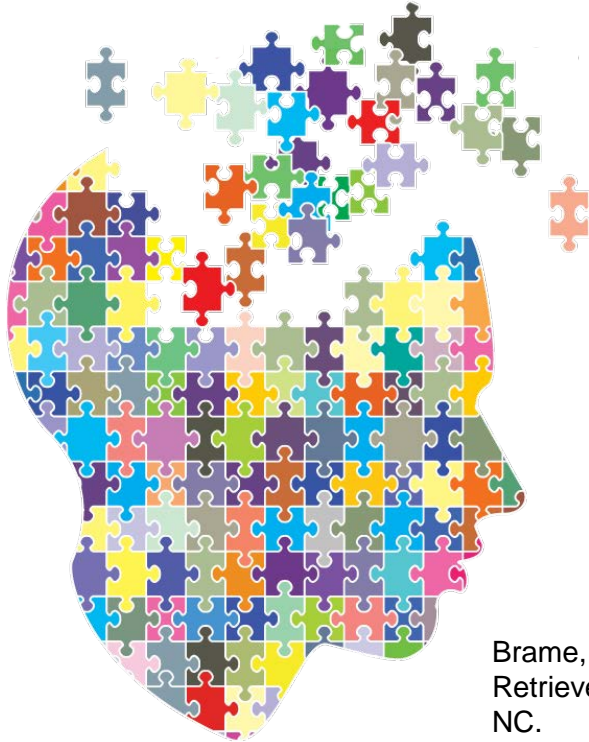
Learning Goals:

After today's meeting, TAs should be able to...

- 1) Describe active learning strategies and explain their importance
- 2) Implement frequent and varied active learning strategies in recitation

Engagement: What makes you feel engaged in a classroom?

How do we promote student engagement?

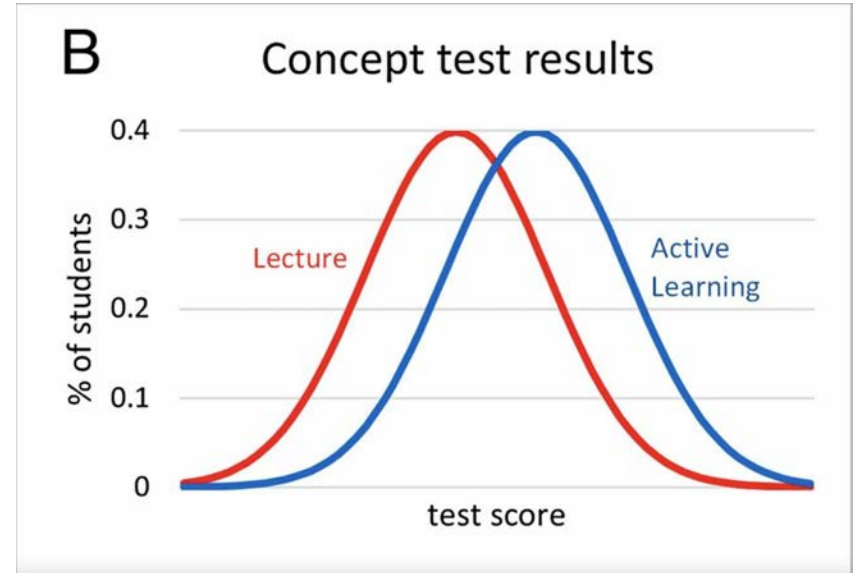
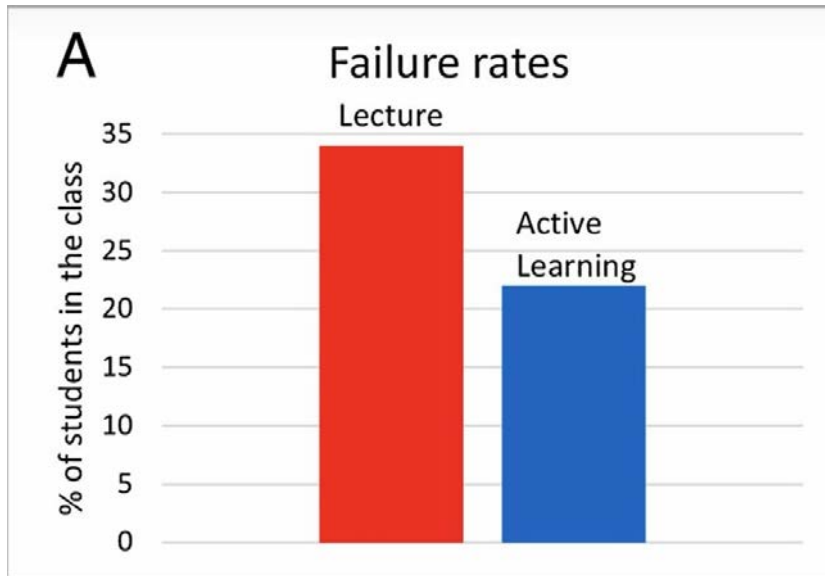


Active learning is a cognitive process which promotes analysis, synthesis, and evaluation of course material.

STUDENT-DRIVEN

Brame, C. (2016). Active learning. Vanderbilt University Center for Teaching. Retrieved 11/16/2022 from <https://cft.vanderbilt.edu/active-learning/>. License CC-BY-NC.

Active learning improves student outcomes by promoting engagement



Carl E. Wieman (2014) Large-scale comparison of science teaching methods sends clear message. PNAS 111(23):8319-8320.

Freeman et. al. (2014) Active learning increases student performance in science, engineering, and mathematics. PNAS 111(23):8410-8415.

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Active learning promotes inclusivity

Student outcomes are disproportionately affected among:

- women
- underrepresented minorities
- lower income students
- first generation students

CBE—Life Sciences Education
Vol. 13, 478–492, Fall 2014

Article

Gender Gaps in Achievement and Participation in Multiple Introductory Biology Classrooms

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What strategies can we use to promote active learning?

Active learning strategies should be both consistent and varied

Consistent active learning techniques can be integrated into your everyday teaching (frequent, in-the-moment)

An array of different structured active learning activities can be introduced to augment student learning (periodic, planned)

Active learning techniques to implement regularly (frequent, in-the-moment)

- **Think Break** - Allow 30-60 seconds for students to think about the problem before you go on to explain; ask them to write it down
- **Think-pair-share** - Students (1) think individually about a topic or answer to a question, (2) share ideas with a partner, and (3) partners share out with the class.
- **“Why do you think that?”** - Follow up all student responses (not just the incorrect ones) with a challenge to explain their thinking
- **Polling** - Ask **all** students to respond, using informal polling (thumbs up/thumbs down, colored notecards) or student response system (PollEverywhere)

Incorporating Active Learning techniques in your classroom

Free Write: Identify one active learning technique have used or would you like to use in your class regularly. How and when would you use it?

Active learning activities to add variety (periodic, planned)

In groups of 2-3, explore one new active learning activity. Discuss the following:

- Purpose (Why is this a helpful technique? What will students gain from it?):
- Follow-up (How will you wrap-up your conversation and make sure everyone is on board?):
- Example (For what types of problems/concepts would this be useful?):

Record your thoughts and nominate a group member to share out.

Active Learning Activity: Intentional Mistakes

Give students a worked problem that contains some mistakes. Have students, as a class or in small groups, find mistakes and then make the corrections.

Purpose:

Follow up:

Example:

Active Learning Activity: Pro/Con Grid or Ranking Alternatives

For a given scenario, everyone thinks up as many alternative courses of action (or explanations of the situation) as possible. Students list out the pros and cons for each approach, and/or rank them by preference.

Purpose:

Follow up:

Example:

Active Learning Activity: Picture prompt

Show students a complex image with no explanation, and ask them to identify/explain it, or to name the processes and concepts shown. Let students explore all options before intervening.

Purpose:

Follow up:

Example:

Active Learning Activity: Blank Page Review

Instruct students to write as much as they can remember about a topic or section of the lecture within a defined period of time (3-5 min) . Do this at the beginning of class, with notes away, encouraging students to write the whole time.

Purpose:

Follow up:

Example:

Active Learning in your classroom

Create a rough outline of a focused active learning activity based on a topic you will teach during your first week.

- What skill do you want students to have in completing this activity (learning goal)?
- Explain how your activity specifically gets at this.
- How will you assess whether students have achieved your goal?

Exit Ticket:

+ What are you taking away from today's session on active learning?

Δ Is there anything you still have questions about?

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RES.7-005 Biology Teaching Assistant (TA) Training
Summer 2020

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