



HMS Curriculum Fellow Program Education Workshop Series



Getting Active Learning Right

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Getting Active Learning Right

Workshop Objectives

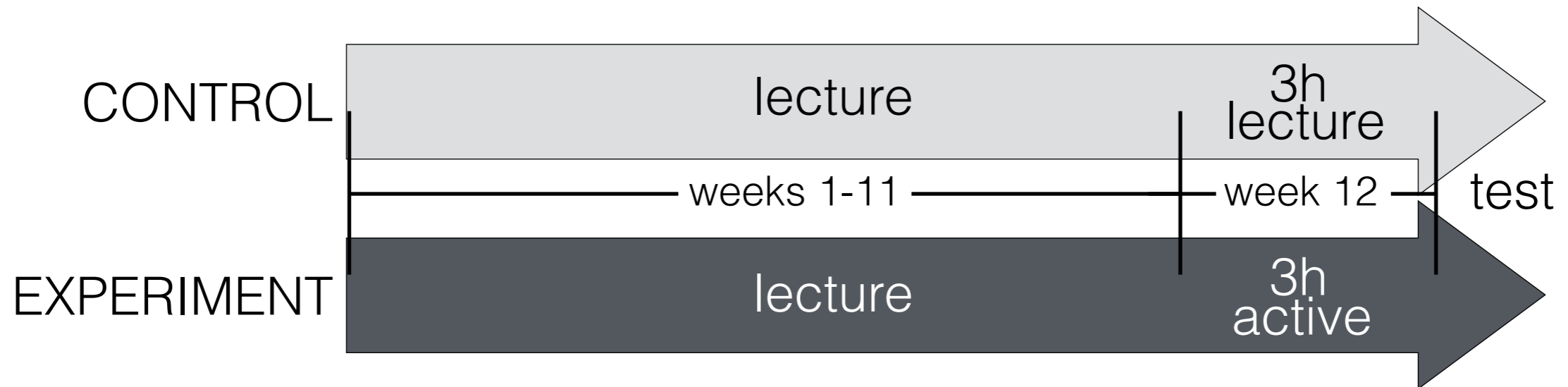
Recognize the benefits of active learning for our students

Identify the features and characteristics of 'successful' learning activities

Assess the quality of learning activities by how well they conform to these characteristics

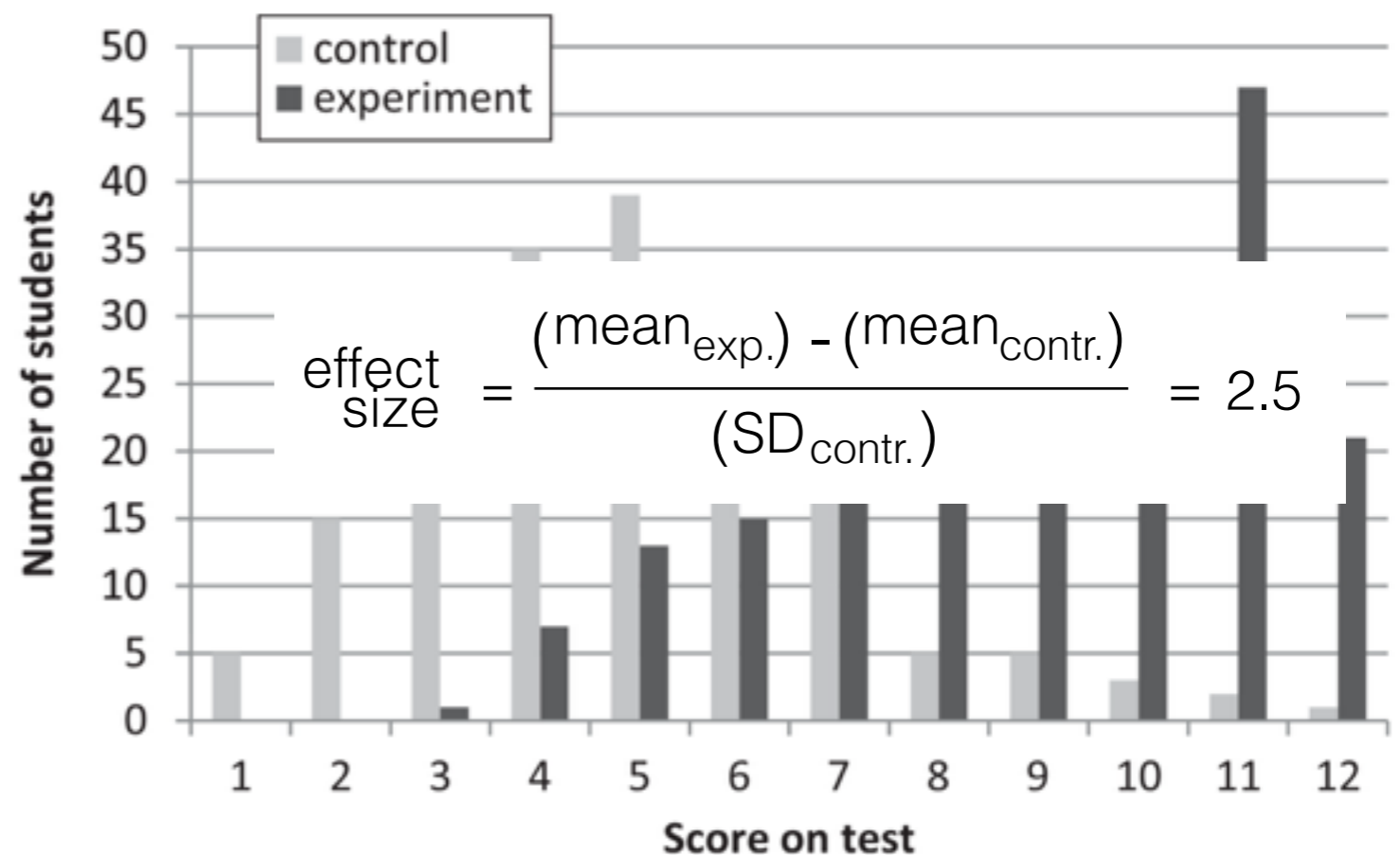
Apply these to the creation of your own learning activities.

Active Learning Improves Student Outcomes



Two sections of the same introductory physics course (>250 students each)

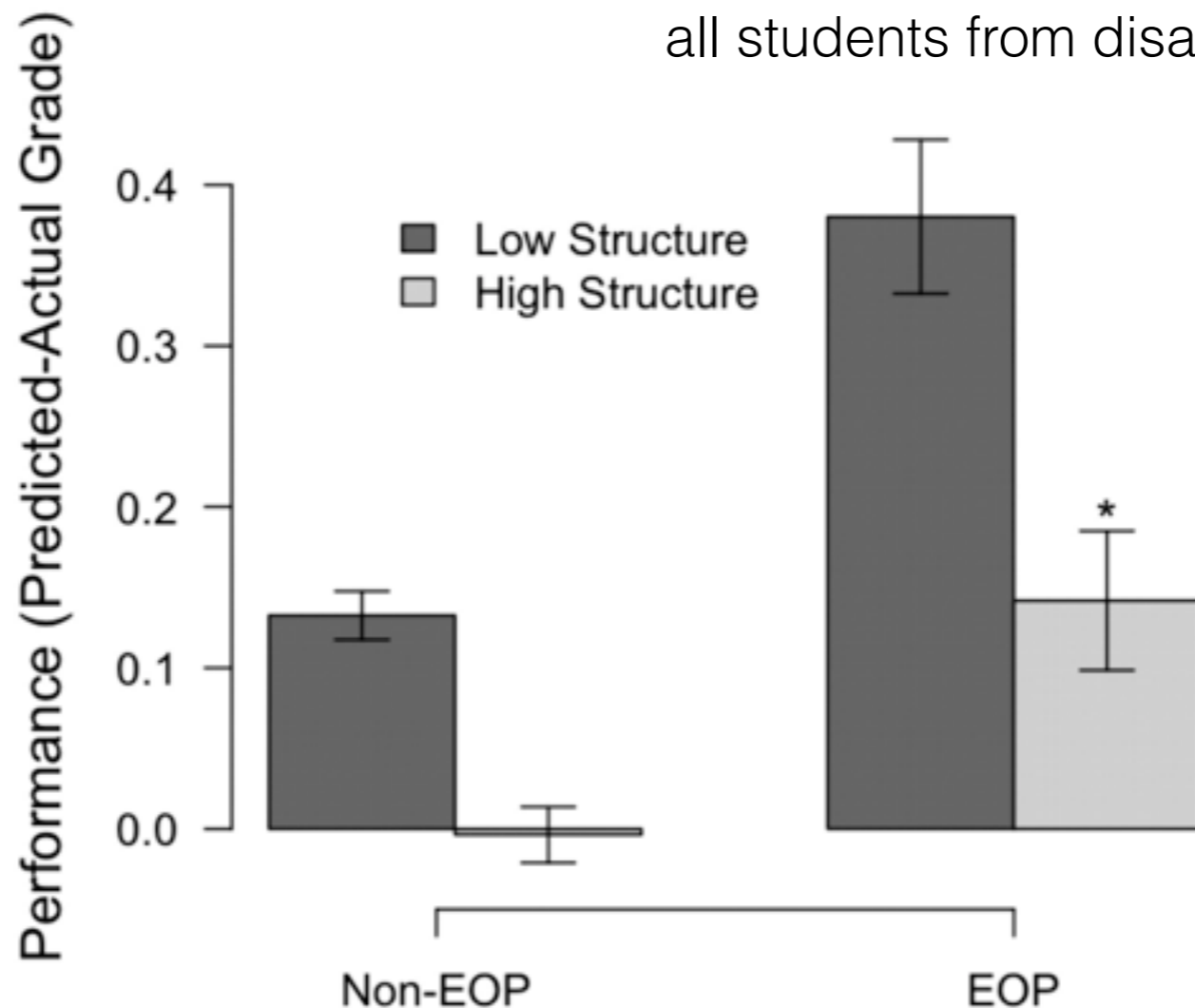
The instructional approach used in the experimental section included ... pre-class reading assignments, pre-class reading quizzes, in-class clicker questions with student-student discussion (CQ), small-group active learning tasks (GT), and targeted in-class instructor feedback (IF).



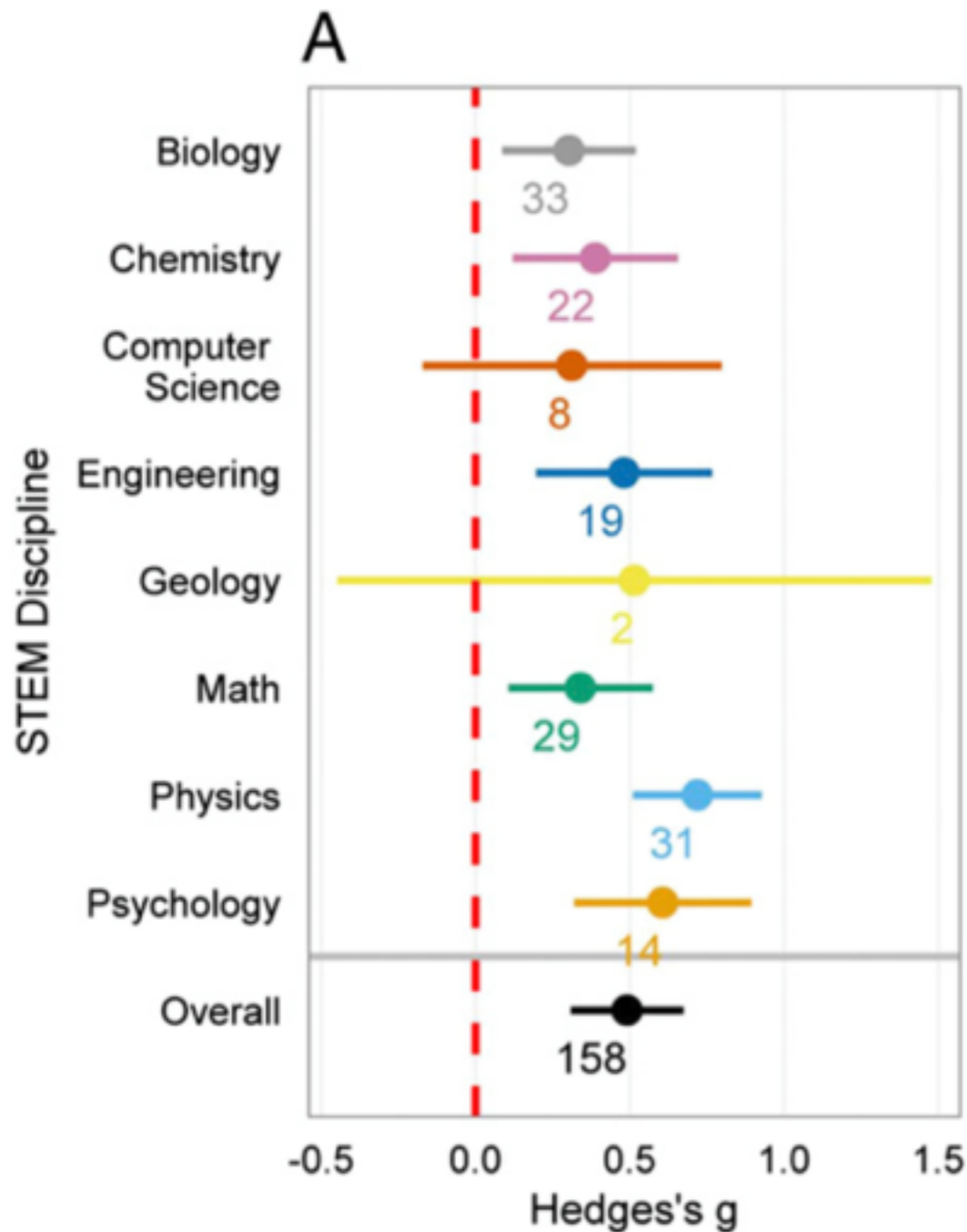
Active Learning Improves Student Outcomes

This course design was considered highly structured because it required students to (i) prepare for class sessions, (ii) use clickers or random-call responses to participate in class sessions that were focused entirely on active-learning exercises, and (iii) complete a weekly low-risk assessment in the form of a practice exam.

Individuals in the EOP [Educational Opportunity Program] are from educationally or economically disadvantaged backgrounds; most are first in their family to attend college.... Analyzing individuals in the EOP captures most URM students while broadening the analysis to include all students from disadvantaged backgrounds.

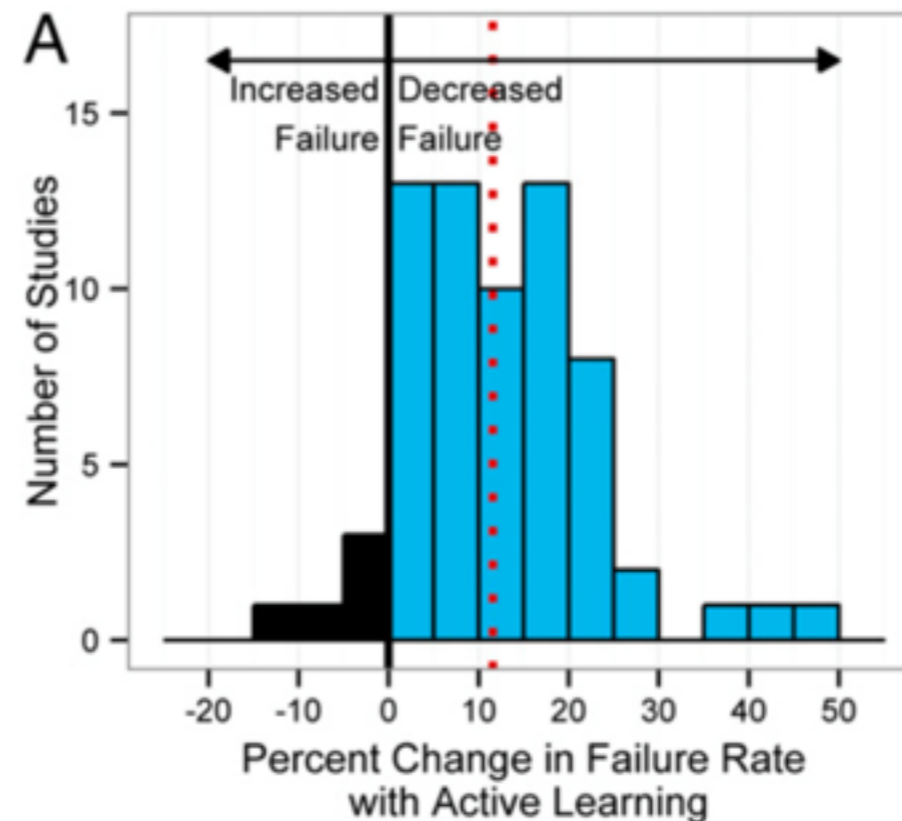


Active Learning Improves Student Outcomes



meta-analysis of 225 studies comparing student performance in conventional vs. active courses.

...criterion i yielded papers representing a wide array of active learning activities, including vaguely defined “cooperative group activities in class,” in-class worksheets, clickers, problem-based learning (PBL), and studio classrooms...



Your experiences with active learning

Consider your own experiences with active classrooms. Think about a class where the active learning felt successful and improved your understanding. Then think about a class where the active approaches didn't add much or were detrimental to your experience.

In your opinion, what characteristics of each experience made it successful or unsuccessful?

You will have a chance to submit your thoughts via Poll Everywhere (instructions on the next slide).

We will take 3-4 minutes for this activity.



Think about your own experiences with active classroom activities. Think about a class where the active learning felt successful and it improved your understanding. Then think about a class where the active approaches didn't add much or were detrimental to your experience. In your opinion, what characteristics of each experience made it successful or unsuccessful?



Start the presentation to activate live content

If you see this message in presentation mode, install the add-in or get help at PollEv.com/app



Bad learning activities come from an ‘activity centric’ approach

Starts with a decision to do active learning



the next decision focuses on what kind of activity to do



then the decision about what actually happens in class is dictated by trying to conform to this approach

This is likely to result in activities that feel disconnected from the rest of the day’s content or like a waste of time.

Good learning activities come from a 'content centric' approach

Starts with an assessment of your course content

- what is most important?
- what is most challenging?

Get more specific —> what do you want to achieve?

- what can the activity do that a lecture slide can't?
- what should the students know or be able to do when they're done?

Plan the activity

- centered around a specific learning objective
- format complements the objective
- think operationally

Key 'operational' best-practices

- 1) make sure your question/action is aligned to the learning outcome you are trying to achieve with the activity
- 2) clear instructions, including
 - the text of the prompt on a slide or on a worksheet
 - the deliverable clearly highlighted
 - time and solo vs. groupwork clearly indicated
- 3) built in opportunities for feedback
- 4) clear transition out of the activity

Consider this scenario

Dr. X is teaching a seminar course. This week's topic is bacterial secretion systems. The goal of the class is to help students distinguish between the shared and distinct features of the different types of secretion systems and connect these to their evolutionary origins and functions within the cell.

Dr. X lectures for 20 minutes during which she gives brief overviews about each of the types of secretion systems. She stops for one of the following activities:

#1

Using Pubmed, organize each of the types of secretion systems we discussed by the year they were first described. Then, compare your list with your neighbor's.

#2

Think of as many characteristics as you can that can group and/or differentiate secretion systems. Once you have identified the relevant categories, work with your neighbor to fit them into the appropriate groups.

Consider this scenario

#2

#1

Using Pubmed, organize each of the types of secretion systems we discussed by the year they were first described. Then, compare your list with your neighbor's.

Think of as many characteristics as you can that can group and/or differentiate secretion systems. Once you have identified the relevant categories, work with your neighbor to fit them into the appropriate groups.

Write down one reason why activity #2 would be considered a good learning activity and one reason activity #1 might not.

Do this **on your own** and be prepared to discuss your reasons with the class. You will have **2-3 minutes** to write down your answers.