Active Learning

12 Strategies to use for a variety of class sizes.

Active Learning: 12 Strategies

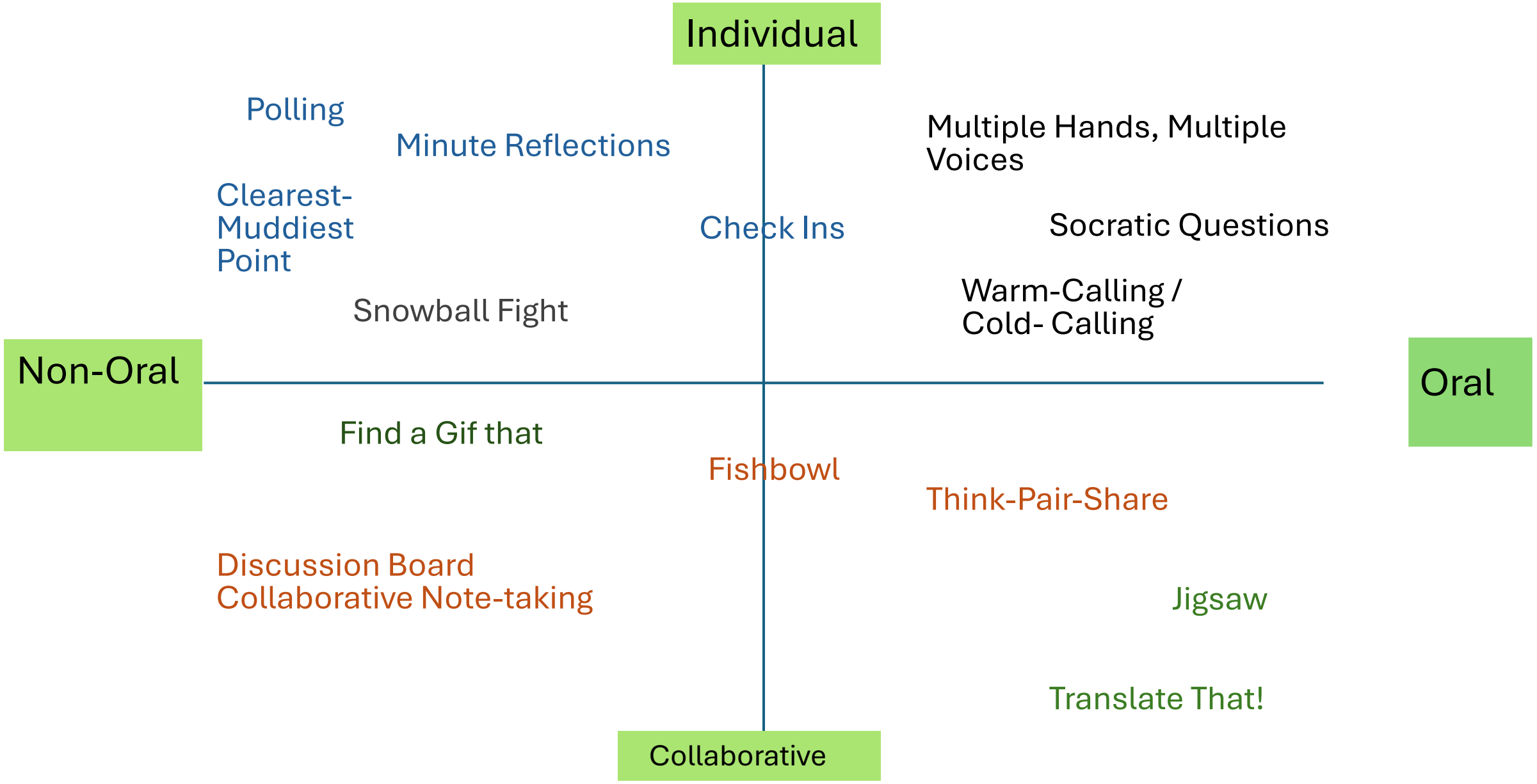
- Examples are organized in the following grid as "oral versus non-oral" and "individual vs groups".

  Ideas for adapting these activities for larger class sizes are included on the side. Many activities can also be used in online classes (for support with online classes, contact Clemson Online).

- For support with planning and implementation, request a consult!

- S. Otterbeck, 2025

Active Learning ID Quadrant



Temperature Checks Equitable Voices Peer to Peer Collaboration Applying Understanding

Individual + Polling = Voting

2 – 5 minutes

Pose a Question or Prompt (*e.g., warm-up questions, prediction questions, content understanding*)

- Example: *What do you think will happen if I mix X and Y together over heat?*

Give **Think** Time with provided answers (10 seconds)

Take 10 seconds or so to think and review the answer choices.

A. Nothing
B. The mixture will bubble
C. X and Y will remain separated from each other
D. There will be a color change

Invite Students to Vote (1 minute)

Okay now vote for which outcome you think will happen.

No tech option: Thumbs up / down, colored paper, fingers 1 - 5
Tech option: iClickers, Slido ($), Canvas Quiz, Mentimeter

Spin for Large Lecture

This is a great technique as is for a large lecture!

Students can grab colored paper or index cards as they come into class and turn it back in at the end of class.

Individual + Writing = Clearest / Muddiest Point

1-3 minutes

Ask the Clearest & Muddiest Point question

Example: What was the clearest concept/idea for you today?
What was the muddiest (most unclear) concept for you today?

Invite students to grab a piece of paper

Please grab a piece of paper and answer both questions, labeling them "Clearest" and 'Muddiest". No names are needed.

Give 1 minute of quiet write time

Take 1 minute or so to silently write your responses down and then I will ask you to turn them into me.

Have students pass up / in their responses

Thank you for taking the time to do that. Please pass your answers in as you leave class today.

Tech option: iClickers, Slido ($), Canvas Quiz, Mentimeter

Spin for Large Lecture

Option 1: Combine with Polling to have students voting on the Clearest or Muddiest point from the class.

Option 2: Add a component where students in small groups compare answers for consensus to form 1 submission.

Individual + Writing = Minute Reflection

1-2 minutes

Pose 1 Question *(e.g., interest, relevance, opinion, analysis, conceptual connection)*

- *Interest: Without looking at your notes, what was most memorable or stands out in your mind about today's class?*
- *Opinion: Would you agree or disagree with the statement _____? Why?*
- *Conceptual: What relationship do you see between today's topic and other topics previously covered in this course?*

Write out your response (1 minute)

Take 1 minute to write out your response. I am not looking for correctness, I am only interested that you tried.

Option: Skim through during class
Option: Review for next class period

Spin for Large Lecture

Option 1: Use a Canvas Survey and have students write and reflect within the survey.

Option 2: Just quickly scan responses looking for key ideas or concepts used in their reflections.

Individual + Writing/ Voting/ Oral = Check Ins

1-3 minutes

Ask 1 simple question at the start of class *(e.g., general check in, short content related question, fun prompt)*

- General check-in: *"On a scale of emojis how are we feeling today?"*
- Short, content-related question: *"Your homework was about weather patterns. Vote on how likely it is that a tsunami could ever impact Clemson's campus"*
- This, that, or other question unrelated to content: *"Are you a coffee, tea, or other beverage person?"*

Give students 1 – 3 minutes to answer

Today's check in question is on the board. Go ahead and take a moment to respond.

Students respond

Options: Vote by a show of hands or number of fingers, writing on an index card, sharing out orally

Spin for Large Lecture

Option 1: Students go one at a time sharing a 1-word answer to the check in a rapid-fire fashion.

Option 2: Students use a voting method (colored index card, show of hands etc.) to indicate how they are doing

Option 3: Use a Canvas Survey to collect responses (anonymous if getting course feedback).

Individual + Writing = Snowball Fight

3 – 7 mins.

Pose a Question

Example: Based on this example problem, can you identify and explain what has gone wrong? (Hint there may be more than 1 error)

Give **Think** Time (30 seconds)

*Take **30 seconds** to think silently.*

Write out your response (1 minute)

Write out your thought process on your piece of paper. Identify what went wrong and what you believe the correct answer is.

Start the Snowball Fight (1 min)

*Stay in your seats and get these to me! **Reassure them that they can throw it** Options: They throw across the room and students find and read out 1 snowball at random; you read a few now OR share out next class*

Spin for Large Lecture

Option 1: First students individually respond then in a small group (2 – 5 students) combine ideas to write onto 1 snowball.

Option 2: Have students do virtual snowballs where they submit answers at the same time. (Padlet, Discussions Board Posts, Slido)

Option 3: In small groups come with an answer, then students individually choose 1 to answer (works best with tech options)

Individual + Oral = Multiple Hands, Multiple Voices

2-5 minutes
Pose a Question

Example: Imagine you're driving a car, and its position is given by $s(t)=3t^2-4t+1$, where s(t) = distance traveled (meters) at time t (seconds). Explain one way you could find the velocity of the car at any given time t.

Give **Think** Time (1 minute)

*Take **1 minute** to think silently. Feel free to write down your ideas on a piece of paper.*

Ask for a specific number of volunteers (3)

I will wait until we have multiple hands to ensure multiple voices. I am looking for at least 3 volunteers.

Select the **3rd** hand raised & have the student share (1 minute)

Student- what is one way you could find the velocity?

Select **another** hand raised & have the student share (1 minute)

Student- what is another way you could find the velocity?

Spin for Large Lecture
Really great for large lectures as is!

Could combine with **Warm Calling** to encourage diverse participation.

Proximity helps too, so try walking around the room.

Collaborative + Oral = Think-Pair-Share

4-6 minutes
Pose a Question

Example: What are possible ethical concerns with using generative A.I.?

Give **Think** Time (1 minutes)

*Take **a minute** to think silently. Feel free to write down your ideas on a piece of paper.*

Pair-Up students to talk it out (2-3 minutes)

Turn to your immediate neighbor and take turns explaining your response. Please be prepared to share out with the class.

Have a few groups **Share** out their answers (1 min)

I am looking for 2 groups to share at least 1 ethical concern discussed in your pairs.

Spin for Large Lecture

Option 1: Change modality of expression. Use a Google Slide deck where students find a slide with 1 other person on it and share ideas back and forth through writing notes.

Option 2: Early in the semester put students into pairs (or small groups 2- 4) and use same groupings throughout the semester.

Collaborative + Writing = Collaborative Note-taking

2-5 minutes

Share a link to the document or discussion board

Example: Follow this link to a Google Document where you have edit access.

Provide instruction on how to engage

- *Once in the document you should see a single question or prompt at the top of each page.*
- *As we go through the discussion (or class) today I want you each to write down your thoughts, reactions, or questions using a bulleted list.*
- *If someone has already wrote down your thought or question feel free to start sub-bullets to upvote the idea or even respond to the question with your justifications and reasoning.*

Continue to encourage its use & check on the notes and questions

(Example of checking on notes) I see that we have a lot of upvotes on the question, "How does derivatives and anti-derivatives connect to the concept of forces and acceleration?" Let's talk about it …

Spin for Large Lecture

Could work as-is for large lecture!

May want to facilitate note-taking by assigning different parts of the room to focus on different aspects of the lecture (i.e., definitions, theorems, examples, quotes, major ideas)

Collaborative + Writing = Fishbowl

10-15 minutes

Form 2 concentric circles (Inner & Outer circle)

- *Example: The left half of the room is our inner circle and the right half of the room is our outer circle. We will start with 5 minutes to try to setup the statics problem on the board.*
- *The inner circle you will discuss amongst yourselves the steps you would take to solve the statics problem on the board.*
- *The outer circle you will actively listen and take notes or mark any questions you have on the decisions the inner group is making.*
  Students can stay in their seats, no need to make actual circles

Facilitate the Discussion

Ask guiding questions to help the student-lead inner circle discussion

Outer Circle Asks Questions (5 mins)

Okay, outer circle you now have 5 minutes to ask your questions. What questions or suggestions or suggested revisions do you have for the inner circle?

Swap Inner & Outer Circle

Option: Continue with the same problem, or start a new problem

Spin for Large Lecture

Option 1: Create many small fishbowls. Maybe its groups of 10 to 20 students and there are 5 fishbowls around the room.

Option 2: Assign students on the outer circle different concepts or ideas to focus on while actively listening.

Option 3: A virtual Fishbowl where inner circle students record themselves completing the prompt and outer circle students respond. (Can be asynchronous.)

Collaborative + Oral = Translate That!

3-5 minutes
Pause your lecture & set an imaginary audience

Example: Okay we just finished talking about left- and right-hand limits. Let's pretend we are talking to a college friend in Agriculture. How would you explain this concept to them?

Give students time to think about how they would "translate" the just covered content to an imagined audience (30 seconds)

Take about 30 seconds to think quietly. Then I will have you "translate it" with your neighbor.

Have students turn to a neighbor and share their translation

*So, turn to your neighbor (or small group) and share how you would explain this concept to your college friend in Agriculture. **I would then wander around the room listening in**.*

Spin for Large Lecture

Option 1: Early in semester pre-assign group locations in the room. (Ex. First 2 rows are a group) Every activity they use that same group.

Option 2: Use a Google Document where students enter their translation. (Padlet could be used too!)

Collaborative + Writing = Jigsaw

15+ minutes
Create “Home Groups” and provide instructions

Example: For our “Home Groups” of 4 students, each of you will have a different body organ to learn about. You will take 5 minutes to individually explore your body organ.
Option: Students count off in 4s, random groups, Canvas groups

Send students to “Expert Groups”

Okay now I want all Heart people to go to the front left of the room, all Lungs people to go to the front right, Kidney people to the back right, and Liver people to the back left. These are your Expert Groups! In these groups compare what you individually found important about your body part, take about 7 minutes.

Bring students back into “Home Groups”

Return to your original seat with your Home Group. In your Home Group, each person take 1-2 minutes to summarize your organ for your teammates (answer questions). Then as a team, discuss how your 4 body organs interact within [class context].

Spin for Large Lecture

Option 1: Combine with Collaborative Notetaking and use separate documents for Expert Groups and Home Groups. Student’s location in the room could denote which documents to join.

Option 2: Students staying in seats start in an Expert Group based on proximity and then do a share out to the whole class of what they found.

Collaborative + Creating = Find a Gif That

2-5 minutes
Pose a prompt or a question to the room

Example: We just finished talking about end behaviors of functions and the relation to limits. Let's look at this graph on the board and think about the end behavior as x goes to infinity.

Give students time to think about the prompt (15 seconds)

Take about 15 seconds to think quietly about the end behavior. Feel free to write down any thoughts you have.

Invite the students to go to GIPHY.com to find GIFs that represent their thinking

Okay now that you have had time to think. Go to GIPHY.com and find 1 to 3 GIFs that represent your thinking.

Option 1: Students then post their GIFs to a collaborative space (I like to then project the GIFs on the board)
Option 2: Students share in small groups and pick the best GIFs to show the whole class.

Spin for Large Lecture

Option 1: Have students post to a Google Slide or Discussion Board which you scroll through for everyone. (Padlet is great too!)

Option 2: Combine with small groups and have students in their group decide on the best collection to represent their group's consensus.

Other resources on the OTEI Student Engagement page:

Polling

Peer Instruction (polling plus discuss plus repolling)

Discussion activities

Reflection Activities

Link to the Patricia K Cross Academy for more ideas