Inclusive Practices for Implementing Collaborative Learning in Large Classes

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Welcome!

As you prepare for the workshop, reflect on the questions below with respect to your class. If you would like, explore some collaborative learning techniques on the next page, and use the worksheet on page 3 if you want to make some notes for yourself. Finally, check out some resources on the last page, especially Universal Design for Learning (UDL) (http://udlguidelines.cast.org/) if you're not already familiar with it. See you on June 25!

A Learning Goal for Your Class

1. List a primary learning goal in your class that might benefit from group work.

2. What equity challenge(s) might you face when implementing a group work activity in your class?

3. What additional challenges might you face when implementing group work in an online or hybrid setting?

A Few Collaborative Learning Techniques (see brief definitions on next page)

1 Think-Pair-Share TAPPS Structured Academic Controversy	2 Informal Groups Concept Maps Jigsaw
3 Think-Pair-Square Roundtable/Brainstorming Inquiry Learning	4 Drill-Review Pairs Structured Problem Solving Active Review Sessions
5 Quickwrites Peer Editing Dyadic Essay Confrontation	

Some classroom active collaborative learning techniques.

- <u>Active Review Sessions</u>. The instructor poses questions, and the students work on them in groups. Students are asked to show their responses to the class and discuss any differences.
- <u>Concept Maps</u>. Student teams create drawings or diagrams showing the mental connections that they make among major concepts they have learned.
- <u>Drill-Review Pairs</u>. Four students are grouped as two pairs, and each pair is given two problems to solve. One student in the pair explains the steps in solving the problem, and the partner checks it for accuracy. Roles switch for the second problem. Then the two pairs compare their solutions for the problems and reach a consensus.
- <u>Dyadic Essay Confrontation</u>. Students write a question that integrates a reading assignment for the current day's class with materials from earlier in the course, then they write a "model answer" on a separate sheet of paper. In the next class, student pairs exchange questions, write a response to the partner's question, and compare and contrast the model answer and in the in-class response.
- <u>Informal Groups</u>. The instructor poses a question for each group and circulates around the room answering questions, asking additional questions, and keeping the groups on task. After allowing time for group discussion, the instructor asks groups to share their discussion points with the rest of the class.
- <u>Inquiry learning</u>. Students use an investigative process to discover concepts for themselves. After the instructor identifies an area or concept for mastery, a question is posed that asks students to make observations, pose hypotheses, and speculate on conclusions. Students discuss and tie the activity back to the main concept.
- <u>Jigsaw</u>. A general topic is divided into smaller, interrelated pieces (like a puzzle is divided into pieces). Each member of a team is assigned to read and become an expert on a different topic. After each person has become an expert on their piece of the puzzle, they teach the other team members about that puzzle piece. After completion, the puzzle has been reassembled, and everyone on the team knows something about every piece of the puzzle.
- <u>Peer Editing</u>. Student pairs critically review and provide editorial feedback on each other's essays, reports, research papers, or other writing assignments.
- <u>Quickwrites</u>. Short writing assignments responding to prompts such as main ideas of the class (Minute Papers), clearest or most difficult concepts (Muddiest Point), reflection on an argument or data, and drawing a conclusion from evidence. Students are paired or grouped to discuss their ideas and help each other through roadblocks.
- <u>Roundtable/Brainstorming</u>. The instructor asks a question that has a large number of possible answers. On a single piece of paper, each student in the group takes turns writing down their answers at the same time stating them out loud. The process continues until the students run out of possible solutions Ideas may be shared out to the class.
- <u>Structured Academic Controversy</u>. Small teams of students learn about a controversial issue from multiple perspectives, reflect on the complexities of the issue, and seek consensus.
- <u>Structured Problem Solving</u>. The instructor provides students with a process for solving a complex, content-based problem within a specified time limit. All team members must agree to a solution and be able to explain their solution strategy.
- <u>Think-Pair-Share</u>. Students work individually on a problem or reflect on a reading passage. Students then compare their responses with a partner and synthesize a joint solution to share with the class.
- <u>Think-Pair-Square</u>. Students discuss problem-solving strategies first in pairs (similarly to Think-Pair-Share), and then pairs form groups of four to compare answers and methodologies.
- <u>Thinking Aloud Pair Problem Solving (TAPPS)</u>. Student pairs receive a series of problems and are assigned roles as problem solver and listener that switch with each problem. The problem solver "thinks aloud" through the steps of solving a problem. The listener follows the steps, attempts to understand the reasoning behind the steps, and offers suggestions if there are missteps or misconceptions.

Technique:			
How does it work?			
What kind(s) of learning goal verbs* would it work best for? (add your own if you want)			
How might you ensure equity?			

*example learning goal verbs: define, describe, explain…; compare, contrast, analyze, apply, design…; connect, integrate, synthesize…; advocate, communicate, inspire, motivate…; discover, explore, recognize value in…; reflect, self-assess, transfer knowledge…

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Resources

Effective Team-Based Instruction

- Oakley, B., Felder, R. M., Brent, R., & Elhajj, I. (2004). Turning student groups into effective teams. *Journal of Student Centered Learning*, 2(1), 9-34. Outlines evidence-based suggestions for forming teams, promoting effective team work, and using peer ratings. The article also has example scenarios and handouts used in group work.
- Reis, R. (n.d.). *Tips and Strategies for Effective Teamwork*. Retrieved January 30, 2019 from https://tomprof.stanford.edu/posting/1045
- Shimazoe, J., & Aldrich, H. (2010). Group work can be gratifying: Understanding & overcoming resistance to cooperative learning. *College Teaching*, 58(2), 52-57. Defines cooperative learning, one approach to using groups/teams in class, and provides steps for successful group work in cooperative learning environments. Gives concrete ways to approach student resistance

Collaborative Learning Techniques

- Barkley, E. F., Cross, K. P., & Major, C. H. (2014). *Collaborative learning techniques: A Handbook for college faculty* (2nd ed.). San-Francisco: Jossey-Bass.
- National Institute for Science Education. (1997). *Doing CL*. Retrieved January 30, 2019 from http://archive.wceruw.org/cl1/CL/doingcl/DCL1.asp
- Khourey-Bowers, C. (2018). *Structured Academic Controversy*. Retrieved January 30, 2019 from https://serc.carleton.edu/sp/library/sac/index.html

Inclusiveness

- Burgstahler, S. E., ed. (2015). *Universal Design in Higher Education: From Principles to Practice*, 2nd ed. Cambridge: MA: Harvard Education Press.
- CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved June 7, 2020 from http://udlguidelines.cast.org
- Moore, S. L. (2007). *Universal Design for Learning: Online Tutorial*. Retrieved January 30, 2019 from http://www.hyperformer.com/UDL_tutorial/

Team Formation and Peer Evaluation using CATME (available at https://catme.org)

- Layton, R.A., Loughry, M.L., Ohland, M.W., & Ricco, G.D. (2010). Design and validation of a web-based system for assigning members to teams using instructor-specified criteria. *Advances in Engineering Education*, 2 (1), 1–28.
- Loughry, M.L., Ohland, M.W., & Moore, D.D. (2007.) Development of a Theory-Based Assessment of Team Member Effectiveness. *Educational and Psychological Measurement*, 67 (3), 505–524.
- Ohland, M.W., Loughry, M.L., Woehr, D.J., Finelli, C.J., Bullard, L.G., Felder, R.M., Layton, R.A., Pomeranz, H.R., & Schmucker, D.G. (2012). The Comprehensive Assessment of Team Member Effectiveness: Development of a Behaviorally Anchored Rating Scale for Self and Peer Evaluation. *Academy of Management Learning & Education*, 11 (4), 609–630.

Some Technology-Based Audience Response Tools

- Learning Catalytics. Interactive audience response using any web-enabled device. https://learningcatalytics.com
- Mentimeter. Interactive presentation web tool. https://www.mentimeter.com
- Poll Everywhere. Polling tool embeddable in slide presentations. https://www.polleverywhere.com/app
- QuestionPress. Interactive audience response using any web-enabled device. http://www.questionpress.com
- Slido. Q&A and polling, includes voting on user-entered items. http://www.slido.com
- Top Hat. Integrated suite of web tools for content delivery, interaction, and assessment. https://tophat.com