



Active Learning Series

PART 8: Assessment and Feedback in Active Learning

Assessing Student Learning in the Active Learning Classroom

In active learning classrooms, most pedagogical work is based on collaborative, group learning. The same principles that apply to effective group-based learning should also apply to collaborative and group-based learning *assessments*. In fact, active learning classrooms invite instructors to re-think and expand their practices regarding assessments, moving from individual-based assessments to those that can be effectively carried out in, and by, groups. Assessing group work, though, is a new practice for many educators and one that presents some challenges (Baepler et.al., 2016).

Whether in traditional or active learning classrooms, assessment tools can help you to provide timely and useful feedback to students, to use data to assign grades, and to record data related to students' achievement of the course learning outcomes. The assessment tools you select should always be aligned to your course learning outcomes and should yield information to support your teaching and your students' learning (Fink, 2013; Jankowski & Marshall, 2017).

Formative assessment takes place during instruction and involves gathering information from and about students and using that data to make adjustments to your teaching and/or the pace of the lesson (McKeachie & Svinicki, 2013). You can also use the data to identify students' misunderstandings right away, allowing you to reteach concepts or skills. Identifying trends or patterns related to student understanding provides you with opportunities to reteach or present concepts in a different modality in order for students to better learn.

Summative assessment, on the other hand, provides a snapshot of student learning at a particular point-in-time (usually at the end of a unit or course). Data from summative assessment can inform planning for the next term and be included in final grade calculations. Designing and aligning assessments with the learning outcomes is a necessary part of course design and helps you to plan learning activities that prepare your students to be successful.

Both formative and summative assessments can be used effectively in active learning classrooms (Baepler et.al., 2016). In the case of formative assessments for collaborative and group work, the assessments that work best are those that:

- create artifacts of learning that students can produce during (or before) class;
- require students to work together during class time and/or to share their work during class time;
- can be broken down into manageable pieces;
- allow for alternative and/or multiple approaches;
- use technology meaningfully to enhance group work;
- support student and group accountability;
- allow instructors and/or peers to provide timely feedback.



Examples of formative assessments that work very well in Active Learning Classrooms

- Group brainstorming activities and discussions
- Group-based projects, presentations, and resource creation (e.g., wikis, blogs, website)
- Collaborative writing/editing activities and exams/quizzes
- Collaborative or individual open-book exams
- Media-based, group presentations (e.g., videos, podcasts, infographics)
- Graphic organizers and concept maps
- Group-based practice tests
- Group summaries of readings and annotated bibliographies
- Jigsaw activities (including peer teaching activities)
- Journal reflection activities with peer response

Summative Assessments in ALCs

Summative assessments can still be carried out in ALCs, with possible modifications (e.g., folders to ensure privacy, different versions of the exam). Due to the design of the classroom and furniture in an ALC, assigning a traditional exam may not be the best choice. For those who still prefer to administer this type of exam, consideration should be given to how student proximity in an ALC differs from in a “lecture-style” classroom.

The following options for summative assessments work well in ALCs:


- Collaborative, final exams structured in ways that require the input of all team members and their diverse perspectives (e.g., complex exam questions that require analysis and discussion).
- Two-stage collaborative exams:
 - 1st: students answer questions individually and return the exam.
 - 2nd: groups work together to solve the second part of the exam.
 - Students’ final grades combine both the individual grade and the group grade.
- Open book, collaborative exams where students can access resources and discuss answers.

The Role of Effective Feedback

Figure 1 organizes and summarizes the distinctions between formative and summative assessment. It also highlights the importance of feedback to the assessment process. Research has shown that the most effective feedback is focused, forward-looking, and timely (e.g., Ambrose, et al. 2010; Fink, 2003; Hyland, 2013; Shute, 2007; Wiggins, 2012).

	Formative Assessment	Summative Assessment
	Gives feedback on teaching/ learning process	“Sums up” the teaching/ learning process (evaluative)
	Happens while learning is taking place	Happens after learning has taken place (vis-a-vis SLOs)
	Identifies areas that need improvement	Is generally not improvement-oriented
	Is generally not graded	Is generally graded
	Is process -oriented	Is product -oriented

Monitoring



Timely feedback

Figure 1: Assessment and feedback



Feedback should be formative, communicating how students are doing in relation to stated learning goals, and what specific steps they should take to improve (Sadler, 1989; Shute, 2008). They should then be expected to demonstrate how they incorporated the feedback into subsequent assignments. In order to do this, students should receive feedback both frequently and in a timely manner (Hyland, 2013; Wiggins, 2012), so that they can make the best use of it. These three practices are especially pertinent to providing feedback for groups:

1. *Address patterns you see in group work.* Rather than commenting on every unique assignment, this gives students a more holistic view of their performance and makes the feedback more transferrable to future work. It also makes providing feedback more efficient.
2. *Provide general feedback on the projects in class.* This will ensure your students receive the feedback when it's useful, and it's also a more efficient way for you to provide it.
3. *Provide feedback frequently.* If you're able to design a group project structure that features frequent feedback building to the next part of the assignment, it will allow students to incorporate that feedback and practice the key skills of the course. Also, giving students the chance to learn a skill in an iterative process will have more lasting effects (Ambrose, 2010). While they should never replace instructor feedback entirely, peer- and self-feedback can increase the timeliness and frequency of feedback, making the process more efficient for an instructor.

Best Practices for Assessing Group Work in ALCs

For assessing group work, it is important that educators first consider best practices for assessing individual students' work. Then, they can consider that collaborative work, in itself, becomes a learning outcome for all students. In terms of equity, it is important for instructors to be transparent and as explicit as they can be about what this will mean for their class.

Another important consideration for instructors is related to whether they want to assess group and process-related skills (e.g., teamwork, communication, collaboration skills), group product-related skills (e.g., a final report, a presentation), or both, considering the course learning outcomes and the discipline. If assessing group work, it is also key to consider how this can be separated from individual work (if this makes sense for a course) and then translated into grades, with a focus on equity and inclusion. When it is determined important to assess *individual work*, dimensions to consider might include the following:

- Contributes to team meetings,
- Facilitates contributions of other team members,
- Individual contributions outside of team meetings,
- Fosters constructive team climate,
- Responds to conflict.

Instructors should also consider when to include individual assessments in order to communicate student accountability (e.g., quick writes, journal entries, quizzes). In all cases, rubrics may need to be developed and/or revisited, if group collaboration is part of the expectations of successful group work. Incorporate rubrics into your feedback methods. Use rubrics which explicitly state the criteria against which students' work is to be evaluated, and make sure these criteria are linked to learning outcomes. Focused rubrics can clarify expectations for assessment among students and instructors. Nicol (2013) recommends explicitly positioning feedback through learning outcomes, as this will help illustrate the gap between a group's performance and the intended outcomes, and therefore help the students to understand the feedback. Appendix 1 presents an example of a rubric designed for a group final



project. This rubric is organized around dimensions for the substantive part of the project (i.e., ways in which students were expected to demonstrate understanding and mastery of course content) and more stylistic dimensions (i.e., organization and appeal). (Note that this rubric was designed for the same course as referenced in Part 7, which includes Peer- and Self-Evaluation tools.)

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Additional Resources

- For more information on [Rubrics](#) from Association of American Colleges & Universities (AAC&U). This site includes downloadable rubrics (as Word documents) for customizing.
- For more information on [Student Learning Outcomes Assessment](#) at UC Davis
- For information and resources to [explore assessment options](#) from the Eberly Center for Teaching Excellence
- For more on how to [combine self-assessments with group assessments](#) for group work from Carnegie Mellon

Additional Reading

- Birdwell, T., Roman, T., Hammersmith, L., & Jerolimov, D. (2016). Active learning classroom observation tool: A practical tool for classroom observation and instructor reflection in active learning classrooms. *Journal on Centers of Teaching and Learning*, 8, 28-50.
- Nilson, L. B. (2016). *Teaching at its best: A research-based resource for college instructors* (4th ed.). San Francisco, CA: Jossey-Bass.
- Young, B., Hynes, M., & Hynes, W. (2021). Promoting engagement in active-learning classroom design. *Journal of Learning Spaces*, 10(3), 13-27.

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References

- Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., Norman, M. K., & Mayer, R. E. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco, CA: Jossey-Bass.
- Baepler, P., Walker, J.D., Brooks, D.C. Saichaie, K., & Peterson, C.I. (2016). *A guide to teaching in active learning classrooms: History, research, and practice*. Sterling, VA: Stylus Publishing.
- Center for Educational Effectiveness [CEE]. (2020). Grading and Assessment Series. *Just-in-Time Teaching Resources*. Retrieved from <http://cee.ucdavis.edu/JITT>



- Center for Educational Effectiveness [CEE]. (2018). Effective Feedback Series. *Just-in-Time Teaching Resources*. Retrieved from <https://cee.ucdavis.edu/JITT>
- Center for Educational Effectiveness, UC Davis. (2020). The TA's guide to effective teaching at UC Davis. Retrieved from <https://ucdavis.app.box.com/s/r7s414td7juxnad4wfai2rypdl8nt6fc>
- Center for Educational Effectiveness, UC Davis. (October, 2020). Testing alternatives. Keep Teaching website. <https://keepteaching.ucdavis.edu/>
- Fink, D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses* (2 ed.). San Francisco, CA: Jossey-Bass.
- Hyland, K. (2013). Student perceptions of hidden messages in teacher written feedback. *Studies in Educational Evaluation*, 39(3), 180–187. Retrieved from <http://doi.org/10.1016/j.stueduc.2013.06.003>
- Jankoski, N. and Marshall, D. (2017). *Degrees that matter: Moving higher education to a learning systems paradigm*. Sterling, VA: Stylus.
- McKeachie, W. & Svinicki, M. (2013). *McKeachie's teaching tips*. Belmont, CA: Cengage Learning.
- Nicol, D. (2013). Good designs for written feedback for students. In W. J. McKeachie & M. Svinicki (Eds.), *McKeachie's teaching tips: Strategies, research and theory for college and university teachers* (pp. 109–124). Cengage Learning.
- Shute, V. J. (2008). Focus on formative feedback. *Review of educational research*, 78(1), 153-189. Retrieved from <https://doi.org/10.3102/0034654307313795>
- Wiggins, G. (2012). Seven Keys to Effective Feedback. *Educational Leadership*, 70(1), 10-16.



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Appendix 1: Final Group Project Rubric¹

	Excellent 10	9	Good 8	Fair 7
Demonstrates understanding of an issue surrounding fire and cultural burning in CA	The issue under consideration is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	The issue under consideration is stated, described, and clarified so that understanding is not seriously impeded by omissions.	The issue under consideration is stated but description leaves some terms undefined, ambiguities unexplored, and/or backgrounds unknown.	The issue under consideration is stated without clarification or description.
Integrates perspectives/voices of cultural practitioners	Incorporates a diversity of perspectives, including those of cultural practitioners, to reveal a deeper understanding of cultural burning and how it relates to the issue being explored.	Incorporates a diversity of perspectives, including those of cultural practitioners, to reveal an understanding of cultural burning and how it relates to the issue being explored.	Incorporates a diversity of perspectives, including those of cultural practitioners, but is not effective in revealing an understanding of cultural burning and how it relates to the issue being explored.	Incorporates a diversity of perspectives, including those of cultural practitioners, but is unrelated to issue being explored.
Contributes to educating listeners/viewers about cultural burning	Provides explanation of cultural burning (and related issues) that is clearly stated and comprehensively described, so as to fully educate viewers / listeners on the topic.	Provides explanation of cultural burning (and related issues) that is clearly stated and described so that understanding is not seriously impeded by omissions.	Provides explanation of cultural burning (and related issues), but description leaves some terms undefined/unexplored.	Provides limited or incorrect explanation of cultural burning and related issues without clarification or description.
Use of appropriate resources/references	Chooses a variety of information sources appropriate to the scope, discipline, and project's purpose. Selects highly credible sources after considering their importance to the researched issue.	Chooses a variety of information sources appropriate to the scope, discipline, and project's purpose. Selects credible sources after considering their importance to the researched issue.	Chooses a variety of information sources. Selects credible sources.	Chooses a few information sources. Selects sources with questionable credibility.
Organization and Development	Effectively organizes appropriate and relevant content to demonstrate clear understanding of an issue.	Organizes appropriate and relevant content to explore ideas within the context of an issue and shape the whole project.	Uses appropriate and relevant content to develop and explore ideas throughout most of the project.	Uses appropriate and relevant content to develop simple ideas in some parts of the project.
Audio/Visual Appeal	Audio and visual components are well-presented, clearly of high-quality, reflecting time and attention to the assignment.	Audio and visual components are well-presented but limited in scope.	Audio and visual components are present but include errors, lack of clarity, and limited in scope.	The audio/visual components are distracting and detract from the message of the piece, and/or are unrelated to the message of the piece.