

Collaborative Testing: Increasing Rigor, Combating Anxiety, & Facilitating Prompt Feedback

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Author Biography

Marina Smitherman is Department Chair of Life Sciences and Professor of Biology at Dalton State College. With two decades of college teaching experience, Dr. Smitherman has specialized in Educational and Organizational Development; serving as Director of the Center for Academic Excellence leading faculty development in Teaching and Learning, leading High Impact Practice curriculum innovations, chairing the Georgia Consortium of Teaching and Learning Directors. She received the University System of Georgia Felton Jenkins Jr. Faculty Hall of Fame Teaching Excellence Award in 2020. She co-authored "Taking Flight: Making your Teaching and Learning Center Soar" published with Stylus in 2020.

Background

Teaching is a collaborative endeavor (Cook-Sather, 2020). As faculty we can set rigorous academic expectations but students have to rise to meet them. For many students, including our first-generation or fixed mindset groups, support and encouragement may need to come from within a course from peers or an instructor. Students may lack the belief that they can succeed due to negative past testing experiences or from a lack of family support and understanding (Markman, Balik, Braunstein-Bercovitz, & Ehrenfeld, 2010). If students feel pressured to perform in a course critical to their career progression, testing can feel high-stakes leading to significant anxiety and lessen performance or achievement (Hoachlander, 1998; Markman, Balik, Braunstein-Bercovitz, & Ehrenfeld, 2010).

Collaborative testing is a natural extension of collaborative learning: a high-impact, student-centered, active learning approach (Johnson, Johnson, & Holubec, 2008). Engaging students collaboratively during testing allows for raised expectations whilst giving them the opportunity to work with peer support and feedback. This has been shown to lower the incidence of test anxiety (Leight, Saunders, Calkins, & Withers, 2012). Students also perceive that they learn better collaboratively and can feel positively interdependent and accountable to their peer group, leading to additional benefits including higher individual testing scores and development of transferable team-working skills (Leight, Saunders, Calkins, & Withers, 2012). Collaborative testing also increases student understanding of content as peer-to-peer instruction provides prompt feedback on performance, corrects misconceptions, and maximizes opportunities for critical reflection on learning (Johnson, Johnson, & Holubec, 2008; Johnson, Johnson, & Holubec, 2008). If summative assessment determines whether learners have acquired knowledge, mastered concepts, and achieved objectives and formative assessment helps them reflect on whether the learning objectives were met, why not employ both at once?

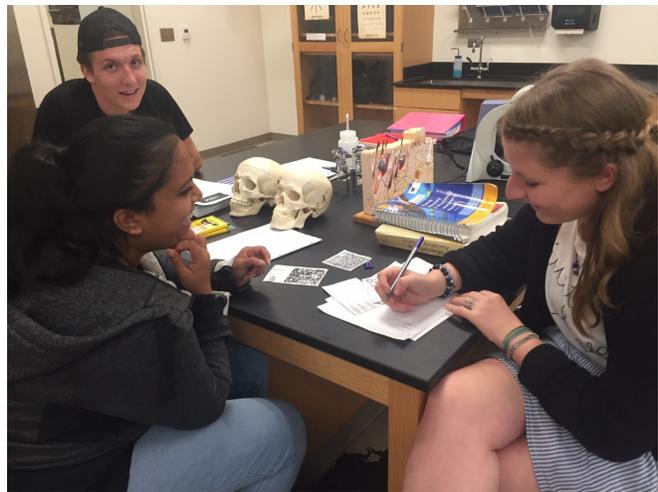


Figure 11: Students take a collaborative test in Anatomy and Physiology lab.

Activity Description

From our first day students work collaboratively on assignments designed to help them achieve the learning objectives and achieve on stratified assessments. Working groups are established the first week, which includes a regular partner and group of two pairs with four students. This has been shown to significantly improve student achievement compared with individual testing (Haberyan & Barnett, 2010; Barnett & Haberyan, 2006). It seems preferable to use established groups consistently so that students get used to their group dynamic and build friendships (Cook-Sather, 2020). They have the freedom to choose their own groups which increases their level of comfort as they progress through the semester.

The first time students experience assessment on any new topic is a low-stakes challenge in their groups of four to give them retrieval practice to identify any knowledge gaps before it counts considerably towards



Figure 12: Students work together in skeleton lab.

their grades. Later, having had time to revise the material and study in their groups, they take a more rigorous medium-stakes test in pairs. Finally, they take their higher-stakes quarterly exams individually in 80% of the time for 80% of the grade, followed by a retake of the test in groups of four in 20% of the time for 20% of their grade. This includes their cumulative final course assessment. Because each student takes a differing amount of time to complete their individual portion of the test, this presents an opportunity for a mindfulness break for those that complete quickly. Students are encouraged to bring paper to doodle/color on, a novel to read, to take time to meditate, play with a stress ball,

etc. Those that forget often doodle on the test, which makes grading more fun! We also usually bring in food to share and make it a true celebration of learning.

Prior to using collaborative testing, exams employed multiple choice questions to test different levels of Bloom's taxonomy. Collaborative exams however make it possible to increase the rigor by incorporating a variety of tasks that would be too challenging for any individual student to complete in the allotted time but are easily feasible for a group. This includes problem-based or case-study questions, writing-intensive questions, and/or creation of something to demonstrate key concepts like concept-maps or flow-charts.

The students are encouraged to debate each answer fully, however the collaborative group grade can increase but not decrease their grade. If an individual student knew the correct answer but could not get the group to agree, they are all more likely to remember this in the future. The collaborative portion enables them to fill gaps in their knowledge, get prompt feedback on their individual performance, and have fun building team-working skills in the process. As an instructor walking around the room while they take the collaborative section, it is enlightening to absorb and support their debates and discussions about why specific answers would be correct or incorrect utilizing and demonstrating critical-thinking skills.

Reflections

This technique ensures students are good-natured about challenging tests because if they miss a question individually they still have the opportunity to get it right with their peers. Some faculty will argue that this does not enable them to fully test individual students. However, this ignores the aim that students need to

master the subject by the end of the course and not necessarily as they go along. Students are also more likely to reflect on how they did individually whilst getting prompt feedback on the answers as they go back through the test a second time. Students usually analyze their performance individually following a test so it is preferable that instead of giving themselves a hard time for missing a question, they can get points back by getting it right on the group-attempt and these lessons appear to stick. Students leave this section knowing what the right and wrong answers were on the test without me having to cut their exam time short to go through it promptly, or take up class time in the following session to do that. They also often reflect on the reason other students may have been more successful and what they need to change to improve their performance on the next test.

Across the board students love the collaborative learning and testing; “*I loved it*” being the most common on student feedback at the end of the semester. Student comments on our collaborative tests include the following:

I really enjoyed this. Being able to retake and talk about the test right afterwards made me feel a lot better about my own answers and less alone when I was having difficulty at times.

I really enjoyed the collaborative tests a lot. It was great to get feedback from other students and correct mistakes as we went along.

It is very helpful and gives you the opportunity to see what you missed, and for other classmates to explain why the answer is right or wrong.

This made me realize that I wasn't alone in the struggle and stress of learning.

Conclusion

Collaborative testing facilitates increased rigor and provides prompt feedback whilst cutting anxiety for the students, and assists them in building transferable skills. If effective teaching and learning is collaborative, and a successful workplace is collaborative, then assessment in higher education should be collaborative.

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