

Rethinking Learning Spaces for Large Enrollment Courses

Michael Rook and Scott McDonald

The TEAL project and the Krause Innovation Studio Learn Lab at Penn State University

A question from Michael Rook and Scott McDonald at Penn State University:

If we were to ask you to close your eyes and imagine a classroom with 120 seats, what would you picture?

Chances are you would think of a room designed for a lecture including stadium seating, a podium with a computer and microphone, a whiteboard, and a projection screen. The farthest thing from your mind would be a room holding 13 circular tables with 9 seats at each table. However, that is exactly what the Technology-Enhanced Active Learning (TEAL) project at MIT has been using since the early 2000s for physics courses.

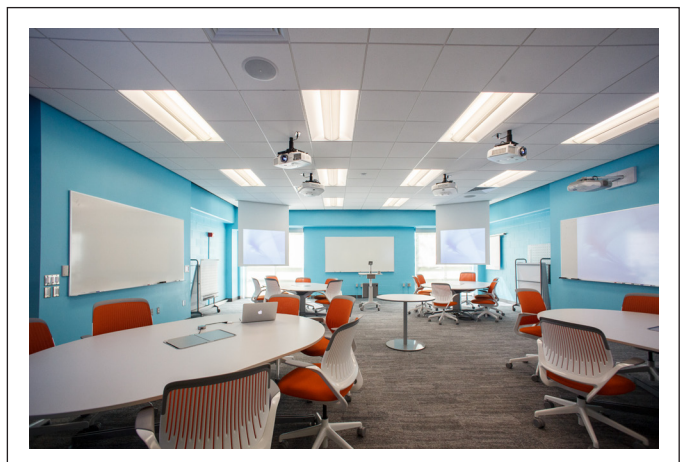


The TEAL learning space is surrounded by 13 whiteboards and 8 projectors/screens on the walls, providing additional working space. The TEAL learning space was designed based on sociocultural notions of how people learn, with students coming to class to interact and learn from others and tools (Dori & Belcher, 2005). Three computers and nine chairs at each table enable students to work in groups of 3-9. The focus on group work as opposed to individual work allows physics professors to model activities that more closely resemble professional practice. By “shifting from the education of individual scientists or learners to communities of scientists or groups of students” physics professors can provide rich group learning experiences for students enrolled in a 120+ student course.

The TEAL project and the Krause Innovation Studio Learn Lab at Penn State University are similar in some ways. Each space has circular tables designed for group interactions and projection screens designed to show work. However, there are some notable differences. For starters, the Krause Innovation Studio Learn Lab does not have computers in the space. It is a BYOD (bring your own device) space, providing built-in technology to project (i.e. mirror) work from personal devices (i.e. laptop computers, tablets, cell phones).

Other differences include:

- ♦ *The number of people per table.* The Learn Lab design of groups of six is based on research explaining that the best learning interactions occur in groups of 4-6. The switching system. Students connect to the mediascape tables and the instructor can control which computer is the source for any of the five projection screens.
- ♦ *The breakout room.* The breakout room provides opportunities for the instructor to meet with individuals or groups of students privately while keeping an eye on the class.
- ♦ *The decentralized nature of the space.* There is no designated instructor podium and that’s great! In the TEAL setup, a computer podium in the middle of the space affords an instructor workspace. In the Learn Lab setup, the instructor is not constrained to any podium and thus, the instructor’s workspace is negotiable.



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Why is this an important topic?

In higher education, class sizes are not getting smaller. A blended/hybrid approach to many college courses increases the enrollment numbers and decreases the amount of faculty per student. In this changing climate, we need to have conversations about learning spaces for large enrollment courses.

We need to ask?

What does a redesign of a large enrollment course look like?

If the answer is closer to the Learn Lab and the TEAL environment (BYOD, group tables) than the stadium-seated lecture hall, the future of higher education is in good shape. We encourage designers of future learning spaces, even large enrollment classes, to use the Learn Lab, the TEAL environment, and other SCALE-UP learning spaces as case studies when designing future spaces. We cannot emphasize enough the importance of designing future learning spaces that will support a change in the dynamics of classroom interactions and experiences, and facilitate the development of learning community and professional practice in large enrollment classes.

We invite you to join us on the Krause Innovation Studio blog site. To access that posting and provide a comment on that site, please follow this link: <http://innovation.ed.psu.edu/2012/11/rethinking-learning-spaces-for-large-enrollment-courses/>. ■

Reference

Dori, Y. J., & Belcher, J. (2005). "How Does Technology-Enabled Active Learning Affect Undergraduate Students' Understanding of Electromagnetism Concepts?" *The Journal of the Learning Sciences*, 14(2), 243-279. Retrieved from <http://web.mit.edu/edtech/casestudies/teal.html>.



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