Scaling Up the Dynamic Classroom: Outfitting and Supporting a High-Tech and High-Maintenance Team-Learning Classroom

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In August of 2005, the Stanford University School of Medicine opened the Team Learning Classroom ("TLC") - designed to support a variety of team-based learning, case-style, and collaborative sessions.

The Team Learning Classroom

A Typical Day

8:00 A.M. EdTech staff arrange tables and podium to case-style configuration

9:00 A.M. Human Health and Disease lectures

12:00 P.M. Latin American Medical Student association lunch meeting

1:00 P.M. EdTech staff arrange tables and podium to team learning configuration

1:15 P.M. Practice of Medicine case discussions in small groups

5:00 P.M. EdTech staff arrange tables and podium to case-style configuration

6:00 P.M. OB/GYN course lectures

Technology for Team Learning

Example: Practice of Medicine Patient Case

1:15 P.M. Audience polling for Readiness Assurance Test (RAT) on essential concepts

2:00 P.M. Facilitator introduces case using PowerPoint and handout on document camera

2:10 P.M. Teams of four students use classroom laptops to download and fill out case discussion questions.

2:25 P.M. Scribe from each team presents findings wirelessly using Apple Remote Desktop Facilitator writes main ideas from discussion on tablet computer.

This project, conceptualized in 2002, was the third of the school’s facilities upgrades with the goal of helping faculty become familiar with the new types of teaching available in our upcoming Learning and Knowledge Center (2009). We wanted this space to support our faculty who have begun to incorporate the use of Team-Based Learning” into their regular class sessions. Team-based learning is similar to problem-based learning in that groups of students work together to solve a series of challenges with varying difficulty. However, team-based learning is more scalable because one instructor facilitates many groups, students are held accountable for coursework content through Readiness Assurance Tests, and peers and faculty give timely feedback to all teams during the session.

Room scheduling data from September 2, 2005 through March 25, 2006 shows:

Activities
- 36 hours in 378 activities
- 32 hours a week in 15 activities
- in most recent quarter, M112 used 40% more than similar-sized M114 lecture hall

Equipment Usage
- 48 audience polling activities (13%)
- 29 laptop activities (8%)

M112 Room Configuration Usage

Percentage of Hours in Each Configuration

Case Style, 85%
Team Learning, 33%
Lecture, 2%

EdTech Staff Changed Room Configuration 148 times in 24 weeks

- 62 reconfigurations took place in the evening or before the first morning class
- 86 reconfigurations happened quickly during the day between activities

User Feedback

Students: students gave a standing ovation for the new M112 classroom at a feedback session. They like M112 for larger group sessions because it’s more intimate and less intimidating than a lecture hall. They appreciate tables for laptops.

Team Learning Facilitator: "Other faculty like [M112] hands-down over M104, M106 [lecture halls] It’s allowed us to do team learning as we’d envisioned. I love M112 because it’s a flat floor. [Presentation technologies] liven up the sight line and allow us to have students’ tables closer to whiteboards. I’d like to bring more intimacy to a group of 4 or 5 with two trapezoidal tables. What would help the most is to get faculty into the role of learners and have them experience the benefits of the proper use of the technology. I really want to figure out how to use this because I’ve seen how this can be a very powerful teaching tool. The sight lines aren’t that big of a problem."

Basic Sciences Lecturer: “You got a lot of mileage out of the renovations. Students have to be closer now so it makes it more intimate. In [a large lecture hall] 2/3 of students are in the back and there’s a vacuum. There is no consensus on more effective ways of teaching. The M112 model is not as necessary for a basic sciences or grad student [lecture] course. I don’t use the technology to the maximum but for my purposes it works fine.”

Observations

Staff reconfigure the room more than once a day- much more frequently than we expected- and reconfigurations must happen quickly

Classes run over into the setup “buffer time” we schedule for reconfiguration

After-hours activities sometimes change room configurations themselves, but they cannot move the podium without EdTech staff and cannot replace resources like laptops or polling

Lecture-style sessions are scheduled in M112 and require videotaping

Recommendations

Light furniture, easy power plugs, durable floors

Stick with rectangular tables because they’re easiest to reconfigure and can be placed in any direction

Enforce accurate reservation times and block off extra time for EdTech staff to reconfigure room

Make podium more mobile for non-technical staff

Determine how courses can use resources like laptops for an after-hours session

Assume videotaping will happen in a case-style room

Videotaping of team learning sessions is low-priority

Room and resource requests changed often, and sometimes at the last minute

Use electronic schedules for door signs and staff calendars so info on changes distributes quickly

Offer templates for configurations that will accommodate most groups, but create process for adding new configurations

Write policies to give priority to the most appropriate uses of the space

Include a clear food and drink policy and big trash cans

Offer tables and whiteboards closer and encourage use of whiteboards for documenting group activity

Place tables and whiteboards on the wall

Place smart panels in one obvious and convenient location

Establish a checklist for daily maintenance and hire students in that course to assist at podium

Use two projectors with unique switchers.

EdTech Staff can reconfigure M112 from Case Style to Team Learning in 15 minutes

M112 Room Configuration

- 9:00 A.M. Human Health and Disease lectures
- 12:00 P.M. Latin American Medical Student association lunch meeting
- 1:00 P.M. EdTech staff arrange tables and podium to team learning configuration

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