

Challenge 1: Creating Learning Environments that Promote Active Learning and Knowledge Creation

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Goals for session:

- Help initiate the ELI conversation around this challenge;
- Help people find colleagues undertaking similar projects or conducting projects that might be applicable to their institutional context
- Help people find ideas and places to start to meet this challenge

Lead-in questions:

- What are the key questions for this challenge?
- What are the key enabling technologies for this challenge?
- What are the key higher education practices for this challenge?

Participant Comments and Discussion:

Change is expensive, hard to come by, expensive in resources; How would one persuade administrators to spend lots of money to change the way we operate at the institution, especially in times of budget cuts?

What research is available of the current effectiveness or ineffectiveness of current rooms? How do we know what we currently have is broken?

How do we say, "This doesn't get it done anymore." Where's the research to say that it doesn't work?

We continue to work with facilities planning – I have to come in and be the champion, but how do you prove something else is better if others believe what they're doing is the right answer.

Not just about technology – also a cultural shift. Part of the learning environments challenge.

How to sell it? Example – if you can show them that it's going to save them a ton of money, get attention. We ran out of built spaces – put nursing project, one day a week, didactic, online. Kept them from expanding physical space. Put science totally online as far as individual courses, including laboratory. Kept from spending on laboratory expansion.

I think the underlying question should be on how people learn. We know much more about how people learn. National Research Council data. If you look at characteristics of effective learning environments, they don't match up.

Whole issue of research, narrow lit review didn't turn up much on traditional classrooms, we know more about social interaction and social learning. How are our classrooms enabling that? Counterargument is that good teachers will teach well in a broom closet.

Given what we know about the social nature of learning, brain-based learning, how do we need to change as an institution to establish consistently good practice across the institution?
Application of what we now know about learning.

Observation – Initially, how do we “sell” the idea, get support for it. Indication that it’s an acute challenge within this challenge, getting admin to buy in.

Even in a small way, “I’m willing to support an experiment in this area.”

Faculty always respond that it’s more effective for learning. But in hard times, they want to know how many people will fit in the space. You need other kinds of data. Just that traditional data that talks about attracting more students, retention, achievement, need to be assessing it all the time.

Depending on which constituency – might need a different “bag of tricks.” One group might look for learning research, for faculty – making teaching easier, admin – cutting costs, extra seats.

Struggle that faculty are not demanding this. I’m suggesting this, we need some alternative spaces to try out new things .It’s much more about how they’re teaching. They aren’t banging on my door to do it.

About half feel like they are the “loudest voice on campus.”

What about students? Are students asking for the space? Faculty didn’t want to teach online until students wanted to find information online.

Have to address different demands – demands on faculty time, demands on “numbers of seats” from admin.

We found that the most important thing that we can do is tell faculty, librarians, etc. about what students are saying. Use student trends and comments as a “way in” to these conversations. Starting small and letting students try things out.

First reaction – students have been socialized to think that classrooms are lines of desks. But, it might be interesting to follow students around and see how they study. Take that as a model for how they are doing it.

We’ve had a small amount of success observing students in classroom spaces – clog hallways looking for plugs, trying to find group space. Take pictures of those activities and show to registrar, faculty committee on academic technologies, etc. Invited reps from campus groups to attend fall focus session in Minneapolis on learning space design and go on field trips to other learning spaces. Generated a lot more support for this than anything else we’ve attempted. Inviting key faculty to key places to show them what is possible. Take the registrar or their assistant. Seems to do a lot. Expose them to the possibilities in tangible ways.

Mentions Learning Spaces Discovery Tool – has tools for sending students out with video cameras to document places they gravitate toward on campus.

Survey from facilities group on what students look for when they are considering colleges. Very high was notion of “place.” Factors in to recruitment and retention.

Struck that we're narrowing the conversation down to specific "spaces." Research spaces. Classroom spaces. Starting to rethink the notion of space on campus – what it's like to live on it, work on it. Have concluded that it's productive to think of the campus as the primary learning space. Have to work holistically. Mentions Princeton's work to creating working spaces across campus – students can come together at gym, etc. to work together.

Heard about importance of connectivity to students, interesting that we try to create the one learning space instead of spaces that can swap and mesh together. Important to think about flexibility. Hard to invest in something that's going to be obsolete in a few years. Go with a little bit of flexibility – mobile tables, located in residence hall, connectivity, next to dining hall, go and sit on porch where wifi works, be on virtual networks with other friends. Don't think students think in terms of specific learning spaces anymore. Anything from class to Starbucks is a learning space.

Identified three types of learning environments – most of our discussion has been about physical learning spaces. What about virtual spaces? What about device-based spaces?

What is the different between spaces and environments?

Faculty don't see "informal learning spaces," only people who are familiar with learning spaces. Teachers don't notice that. There is a flow concept. Residential flow differently than off-campus. Course management systems are virtual environments. You already have teachers in physical and learning spaces. Haven't always thought to consider CMS as a virtual learning space.

Missing the piece – textbook publishers, online media depository – haven't always created software that nicely melds with other campus tools. Very important for faculty who use them. Content providers are part of the web.

Not every environment is a learning environment. I think, implicitly we believe that all these environments are learning environment. No evidence for it. What do we know about effectiveness of physical environments? Virtual environments? Device-based environments? Can we compare more traditional physical environments to virtual environments? Which is better?

Not hard to call a space an informal learning space. Has anyone seen effectiveness of informal learning space? You have to survey students since no one is sitting there.

I think we struggle to find evidence. Learning is often difficult to measure – how do you measure critical thinking? How do you measure learning outcomes? Data to measure that is hard? What would be suitable data?

Physical space is only one aspect of it. You've got to look at available channels of communication, modes of communication, is student interaction encouraged. Have to look at instructional strategies, etc.

Moving from learning spaces to learning environments really broadens the question but does it make it too broad?

Name learning environment might be misleading. I don't believe that learning actually happens in any place. Doesn't happen in a classroom. Happens when a students study. Must be a

voluntary action on the part of the students. Spaces that enhance reflection, communication, act of studying. Might want to explore that dimension.

Rather than trying to look at assessing learning – very intrinsic activity – maybe we should be looking at, how do learning spaces influence activity. Can you draw connections between activity behaviors and outcomes? Can measure activities more clearly.

Research at Carleton: What are the characteristics of study spaces that students are seeking relative to assignments? What for writing assignments vs. problem sets? We're trying to differentiate the types of designs we're thinking about based on kinds of work expected. Know we can't come up with a perfect design. Same conversations around classrooms. Not a perfect classroom, design for what's going on.

Case study research – one with science writing assignment, prompted to think about how students are thinking.. first years – more general use on campus – later years, more of a disciplinary focus. Learning community developed amongst students based on using higher level scientific tools.

What are the obligations of an institution of higher education vis a vis the allocation of certain types of learning environments (CMS, Adobe Connect, etc.) vs. supporting faculty to use the cloud? Where does that intersect with the institution. Tension between standardization and individual innovation.

Intriguing that we work to encourage creative. Millennials are supposed to be best generation for hands-on tasks, bored by lectures. Are our teaching practices out of date? Lectures an invention of modern world. Faculty have to be willing to let go of reigns to turn learning over to student-centered environment. Faculty are more "guides" to move conversation into right direction, step in at appropriate times.

Importance of practices in learning environments.

Success with nursing program – one day of week – break down into group of four, study group, get together and every week they have a colloquium with everyone. Group works together throughout week. Use phones, chat, etc. Function as a unit. Often like a boot camp environment. Have both face to face and online. Online has 100 percent. Face to face has 88 percent. Consistent numbers. When BOT sees that, lightbulbs go off. Have to sell that to higher ups.

From a strategic perspective, is it more or less useful to use environments vs. spaces as terms.

Shifting from thinking about what the space is to the behavior that works in it. Working to convert library to learning environment. Through observation, discussion, we constructed a framework that seems to work – that the behavior constitutes three types of learning behaviors: people learn in solitude, want to study in solitude (study carrels, weenie bin); learning in groups, place called "machine city" with vending machines – people weren't eating, they were using the space to move things, they defined the space, were able to create group spaces either in the library or outside classrooms, in café; and learning with assistance, service-based, how to use technology, classroom environment. We're working with those three and so far they have held up.

From a student perspective, do they separate virtual from device from physical space? Constant connectivity, ubiquitous computing lets any space become a work space. Changes what learning environments are. How do we make the places people want to be? How does that frame the conversation.

Virtual space learning may not just be based on where we want to be, it's where we can be. The more that people have enhanced their classrooms for online, also suits emergency situations when everyone can't get to class. Cites after Hurricane Katrina, etc., people were able to use virtual spaces as alternatives for face-to-face interactions so classes could continue.

We often set up environments and people create their own "desired path." People will do things that are unexpected.

Had database project to work in groups. Students working by themselves, very late at night, very successful, learned a lot. Security became an issue. Administration shut it down.

Idea that learning is fun. It isn't. Learning is hard work. Only afterwards do you say that it is fun. Knowing from own experience. Have learning, create learning environments to help make it more "fun" for students. Learning environment also includes the teachers and human beings, instructor to help students learn. Look for smart arrangement of four components.

Can have pleasant surprises – created an area in library where they imagined students would use it traditionally, were working together in groups late at night, working on group projects, sending information back and forth with wireless, using whiteboards.

Swathmore example – putting a blackboard on walls, buildings, etc. Suddenly makes a space a learning space.

The 21st Century Project – launched in higher education, several campuses selected to take part in designing best theoretical residential/learning facility. Technology is one of the vectors they determine to be most important.

No mention of technology thus far. Does that suggest that key issues aren't technology driven?

Perhaps conversation was too broad and far-reaching to talk about specific strategies and technologies. Bringing together virtual, physical, etc.

Join Learning Space Design Constituent Group. (<http://www.educause.edu/cg/learningspace>)

If technology is the tool, tools aren't terribly interesting until we figure out what we're trying to build.

Does technology drive the space? The availability of technologies may and the possibilities may.

Take away – this is the time to do something differently but we aren't sure what that would look like.

It's "messy" because it's a place that creates infinite desire paths.

Like ideas about creating spaces with whiteboards, tables with LCD monitors, really quick and easy to do the technology, Technology is very important. But technology cannot be in the way. We are still wheeling carts around with projectors.

Look at Foster and Gibbons, University of Rochester, anthropological research about designing spaces for students.

Catme.org Project to permit teams to collaborate and have authentic assessment of contributions of team members; developed an algorithm for teams; teams are formed by this algorithm, tries to do best match; students can rate each other using rubric of questions; have them deployed to team at end of project