

a new paradigm: the active learning ecosystem

Formal learning spaces – those in which learning is directed by an instructor, whether in lecture or in guided group work or discussion – are in need of fresh design thinking. These spaces have remained the same for centuries: a rectangular box filled with rows of desks facing the instructor and writing board.

Administrators, faculty, architects and donors attended schools with learning spaces just like this one. It's what they know. As a result, today's students and teachers suffer because these outmoded spaces inadequately support the integration of the three key elements of a successful learning environment: pedagogy, technology and space.

The design of these traditional settings is often driven by density requirements, yet up to one-third of the space is devoted to the instructor. They often do not provide space for students to work in teams or the other modes of learning in practice today. The environment becomes the barrier to desired educational activities.

Educators today are expected to transform teaching styles to support active learning methodologies while real estate is reclaimed for formal learning spaces to accommodate these revised needs. A move from passive to active learning means people are expected to move, often

requiring more square feet per person. The reclamation of real estate is necessary to acknowledge formal learning environments are where individuals engage in the learning process and begin to "own" their own knowledge.

Given its pivotal role, architects, designers and educators are reconsidering a new paradigm for formal learning spaces where technology and the physical space are integrated to support pedagogy and create a more active and engaging experience for instructors and students.

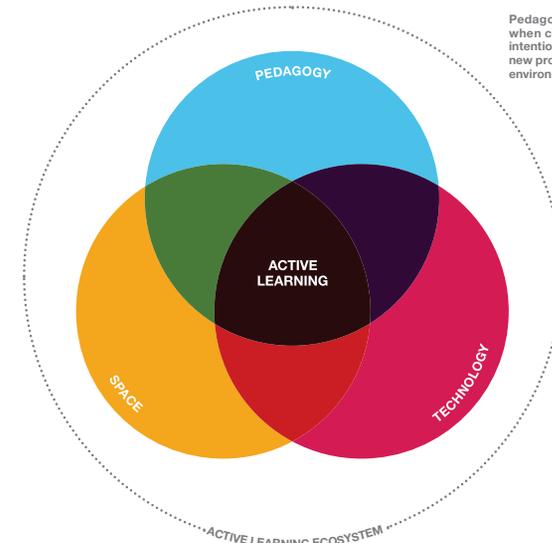
Change begins with pedagogy. Teachers and teaching methods are diverse and evolving. Classes may employ lecture mode, group setups and individual work. From one class to the next, sometimes during the same class period, classrooms need change. Thus, they should fluidly adapt to different teaching and learning preferences. Instructors should be supported to develop new teaching strategies that support these new needs.

Technology needs careful integration. Students today are digital natives, comfortable using technology to display, share and present information. Vertical surfaces to display content, multiple projection surfaces and whiteboards in various configurations are all important classroom considerations. Yet many instructors are digital immigrants. Since technology must support the pedagogy used in the classroom, this divide often causes concerns for those who are untrained and uncomfortable when asked to develop instructional design protocols for truly engaging learners.

Space impacts learning. More than three-quarters of classes include class discussions and nearly 60 percent of all classes include small group learning, and those percentages are continuing to grow. Interactive pedagogies require learning spaces where everyone can see the content and can see and interact with others. Every seat can and should be the best seat in the room. Today, more than just the instructors are teaching. As more schools adopt constructivist pedagogies, the "sage on the stage" is giving way to the "guide on the side." These spaces need to support the pedagogies and technology in the room to

allow instructors who move among teams to provide real-time feedback, assessment, direction and support students in peer-to-peer learning.

Pedagogy, technology and space, when carefully considered and integrated, define the new active learning ecosystem. When the space, furniture and technology can readily adapt to the pedagogies and learning preferences of instructors, classroom planners and designers will have made a significant contribution to the educational process.



Pedagogy, technology and space, when carefully considered and intentionally designed, can establish new protocols for advanced learning environment solutions.

classroom

what we observed

The majority of classrooms in use today were built for traditional, “stand-and-deliver, sit-and-listen” pedagogies in a passive learning setting.

Inflexible layouts and furniture with limited mobility hamper interaction among students, instructors and content; in fact, the environment is the barrier.

Technology access is highly variable from classroom to classroom and often poorly integrated.

Instructors and students cannot easily leverage technology – either built-in or portable – to support problem-based pedagogies and hands-on learning.

Many schools are reconsidering how pedagogy, technology and space can be better integrated for a greater impact on teaching and learning.

formal learning spaces/classroom

a new ecosystem

The changes in pedagogies and technologies are rapidly influencing the educational experience. Also changing is our understanding of brain science and the idea that students learn best with access to a range of tools.¹

Research suggests that a multi-sensory approach to teaching and learning has been shown to increase engagement, promote deeper participation, maximize student achievement and elevate the idea that learning is fun.² Steelcase research and others suggests that active learning, engagement and interaction is a more effective way to learn than passive learning.³ However, as institutions adopt the constructivist learning theory, they still find themselves limited by the classroom environments designed for lecture-based instruction and density issues.

To fully capitalize on the benefits of active learning to improve student success, the physical space must support and enhance the pedagogies at work in the classroom. No longer should static furniture designed for the one-way transmission of information be disguised as supportive of an active learning environment.

The one-size-fits-all classroom neglects the modern day needs of educators and students. Today’s learner-centered perspectives acknowledge that people learn differently. Just as there are a variety of ways in which we learn, there must also be a variety of spaces in which learning occurs.

Classroom variety is necessary; within the space, with the shape of space and near the space. Different subjects and teaching methods require different classroom features. Some spaces are focused primarily on density demands, while others require a large worksurface and others maximize learning in highly connected and interactive learning environments. Within an institution, a combination of these classrooms supports the varying needs of students and instructors by subject and semester.

When focused on active learning, institutions should consider how flexibility and variety work with pedagogy, technology and space to support how learning happens in today’s classrooms.

what we heard.

“We replaced typical cookbook experiments with guided inquiry exercises that encourage students to think and work as a group rather than follow recipes with predetermined results. These exercises develop skills that better prepare them for future work and give them the tools to help them retain knowledge long after the semester ends.”

PROFESSOR

“I bring a lot of stuff to class. And I use a lot of it – it’s not the old days, when we would just take notes in a notebook; it’s a multimedia and social experience. There aren’t a lot of classrooms that work for me.”

STUDENT

¹ Wolfe, P. (2010). *Brain matters: Translating research into classroom practice (2nd edition)*. Virginia: Association for Supervision and Curriculum Development (ASCD).

² Baines, L. (2008). *A teacher’s guide to multi-sensory learning: improving literacy by engaging the senses*. Alexandria, VA: Association for Supervision and Curriculum Development.

³ NSSE updated for 2013. *Promoting Student Learning and Institutional Improvement: Lessons from NSSE at 13*. Annual Results 2012. Retrieved March 9, 2013, from http://nsse.iub.edu/NSSE_2012_Results/pdf/NSSE_2012_Annual_Results.pdf.



Movement is key to active learning. When students can move about easily, they are more interactive, collaborative, comfortable and engaged in class. The Verb™ classroom collection reinvents the table-based classroom, allowing easy movement between lecture-based and team-based modes and providing the tools needed for collaboration and group engagement.

formal learning spaces/classroom

tips for new classrooms

These tips for planning and designing new classroom environments have been developed with the Steelcase Human-Centered Design Research Process, conducted at schools and colleges across the U.S. and Canada. They are intended to provide some guiding tenets to those who plan education spaces, assisting in the design of more interactive and flexible learning spaces that give permission to act differently.

PEDAGOGY

- 1 Design to support fluid transitions among multiple teaching modes: lecture, team project, discussion, etc. – from passive to active engagement.
- 2 Design for peer-to-peer learning.
- 3 Allow freedom of movement for the instructor, enabling a “visit” with each group to offer quick assessment.
- 4 Support the implementation of professional development, allowing for changes to teaching strategies.
- 5 Set expectations for what an active learning environment looks like – learning is messy, things move.
- 6 Expose students to what these future settings enable them to do.

TECHNOLOGY

- 1 Design for sharing, leveraging both vertical and horizontal surfaces for display; use projection and interactive surfaces.
- 2 Take advantage of new media, including personal and in-room technology, and offer equal access to both.
- 3 Allow for displayed information to be persistent over time.
- 4 Use new technology in intended ways.
- 5 Be intentional about what technologies should be used and how to support pedagogical strategies.
- 6 Incorporate synchronous and asynchronous methods.

SPACE

- 1 Design for visual and physical access, giving every student the best seat in the house and allowing the instructor and student access to each other.
- 2 Design for quick ownership change so classrooms adapt to changing users and varying class requirements.
- 3 Design to support quick reconfiguration among multiple modes: from lecture to project work to discussion and test taking and back again.
- 4 Include wall protection for table and chair movement.
- 5 Support learning styles with both analog and digital means to co-create and provide postural change.
- 6 Design the entire ecosystem to work as a tool for learning.
- 7 Design educational places from the inside out.