

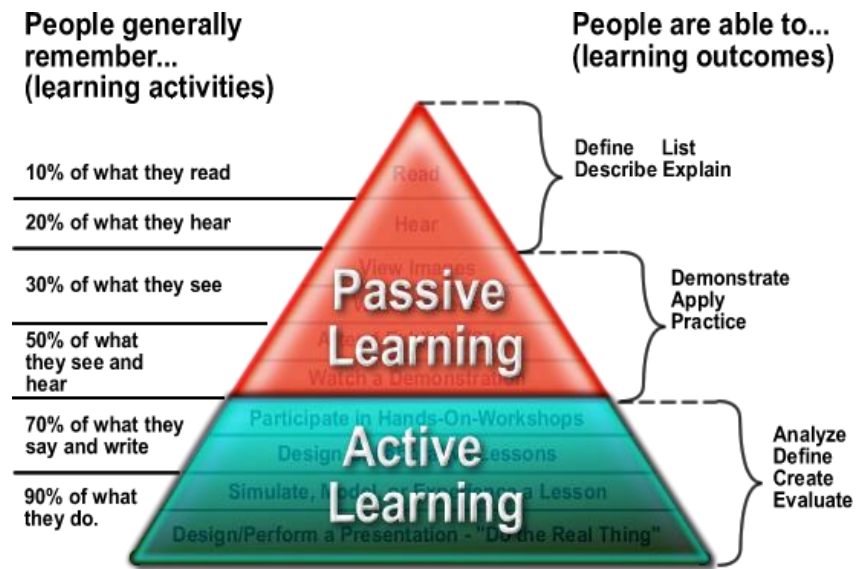


# ACTIVE LEARNING CLASSROOMS

**Creative Spaces for Innovative Pedagogy**  
at the University of Victoria

# What is Active Learning?

Active Learning shifts the responsibility of learning to the learners. There are many definitions of active learning, but generally active learning transforms students from passive listeners to active participants. In an active learning environment, students learn through inquiry, collaboration, task-based assignments, and critical reflection.



[http://wiki.ubc.ca/Course:EDCP371\\_951\\_2010/Active\\_learning](http://wiki.ubc.ca/Course:EDCP371_951_2010/Active_learning)

Studies show that active learning has significant benefits for students, and that students in active learning environments often learn, retain, and perform better in active learning classes than in passive learning, or traditional lecture-based, environments.



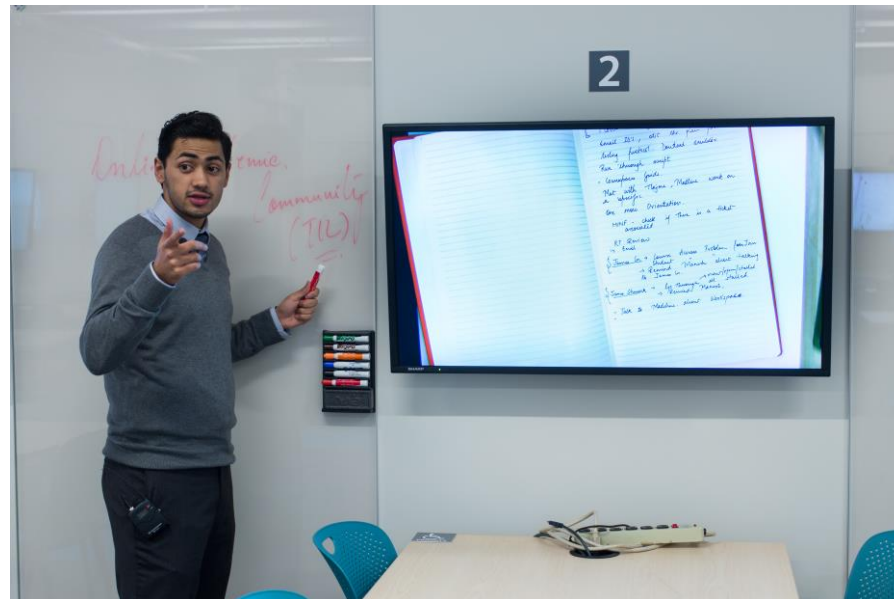
University  
of Victoria

# Active Learning Classrooms

Active Learning Classrooms (ALCs) are spaces that are designed to support engage students actively in the learning process. ALCs are highly collaborative and interactive learning environments.

ALCs have been implemented all over the world. They might also be called “collaborative facilities,” “technology-enhanced active learning spaces,” “interactive environments,” or “incubator classrooms.” Regardless of the name, ALCs have in common that they are student-centered, flexible, and often technologically assisted.

ALCs represent a new culture of learning based on dialogue, interactivity, and pedagogical innovation.



University  
of Victoria

# ALCs around the world

Active learning classrooms are being used in higher education institutions around the world, including McGill, MIT, Queen's, University of California Berkeley, the University of Minnesota, and North Carolina State University.



Students in an Active Learning Classroom at Queen's University

Queen's University, "Ellis Learning Classroom"  
<https://www.flickr.com/photos/queensucanada/12437667135>



University  
of Victoria





# **What are the benefits of Active Learning?**

# The benefits of Active Learning

Active Learning Classrooms have been demonstrated to have a variety of benefits to students, staff, and institutions, including:

## 1. Enhanced Student Performance

- Studies indicate that Active Learning promotes better content retention rates than traditional lectures do, leading to better performance in subsequent classes
- Failure rates are noticeably lower, especially among minority and at-risk students
- Increased participation and engagement – students become accountable to the whole room, and responsible for each other's learning.
- Students increase their self-confidence and self-reliance



# The benefits of Active Learning

Active Learning Classrooms have been demonstrated to have a variety of benefits to students, staff, and institutions, including:

## 2. Employable Skills

- Active Learning Classes have a greater focus on group work, project planning, evaluation, presentation, and practical lab skills
- Students engage in higher-order thinking tasks such as analysis, synthesis, and evaluation.
- Through collaborative learning, students learn different strategies for learning from, listening to, and working with others.



University  
of Victoria

# The benefits of Active Learning

Active Learning Classrooms have been demonstrated to have a variety of benefits to students, staff, and institutions, including:

## 3. Increased Learning Satisfaction

- Class attendance rates are documented as higher, often above 90%
- Students feel valued and appreciated, as the increased comfort and professionalism meets students' expectations for higher education
- Strong community of learners built, providing students with resources and contacts to assist their learning throughout their education
- Students receive more frequent feedback throughout the learning process





# The benefits of Active Learning

Active Learning Classrooms have been demonstrated to have a variety of benefits to students, staff, and institutions, including:

## 4. Students become Teachers

- Instructors act as facilitators and content experts, guiding groups and individuals toward correct answers and skill-development alongside other students
- Students are encouraged to generate and share information
- Student access and share their own prior knowledge
- Dialogue, discussion, and peer-to-peer instruction become an essential part of the learning process, leading to enhanced retention and comprehension



# The benefits of Active Learning

Active Learning Classrooms have been demonstrated to have a variety of benefits to students, staff, and institutions, including:

## 5. Flipping the Classroom

- Students are responsible for learning basic materials and content before attending class. Classes are then dedicated to putting knowledge to practice in a collaborative and supportive environment.

*“What used to happen is that content was delivered in the classroom, students would struggle with it doing homework outside. We’ve reversed that.”*

-Robert J. Beichner, SCALE-UP Project  
<https://youtu.be/MdymI61hLPY?list=PLE8C54256779B374D>



University  
of Victoria

# The benefits of Active Learning

Active Learning Classrooms have been demonstrated to have a variety of benefits to students, staff, and institutions, including:

## 6. Understanding by Design

- Classes and activities are built to facilitate problem-based learning, using case methods and simulations
- Wrong answers become case-examples that can be shared with the class to help everyone learn the next stage
- Courses are designed to achieve learning goals, not to prioritize content coverage. Instructors design instructional materials based on what the learning outcomes for the course are, rather than the other way around.



A modern classroom with blue chairs and wooden desks, featuring large windows and a glass wall. The room is bright and airy, with a high ceiling and a grid of white beams. The text "How does the classroom support Active Learning?" is overlaid in a large, bold, dark blue font. The background shows rows of blue chairs with attached wooden desks, arranged in a way that suggests a flexible learning environment. Large windows on the left side provide natural light, and a glass wall on the right side offers a view into another room. A wooden podium is visible on the left, and a projector is mounted on the ceiling.

**How does the  
classroom support  
Active Learning?**



# Facilitating Active Learning

By designing space for active learning, the space itself becomes a catalyst for pedagogical change.

UVic's Active Learning Classrooms are designed to be:

**Simple, Accessible, Modern, Remotely Supportable, and Flexible.**



ALCs support Active Learning by facilitating:



University  
of Victoria

# Facilitating Active Learning

## 1. Comfortable, welcoming, and flexible learning

Comfortable furniture, rolling and swiveling chairs, movable tables, mobile/multiple whiteboards to record student work allow for multiple modes of learning and teaching, especially group work. The aesthetically welcoming, relaxing, clean, modern, non-traditional classroom space makes this learning a comfortable and engaging environment

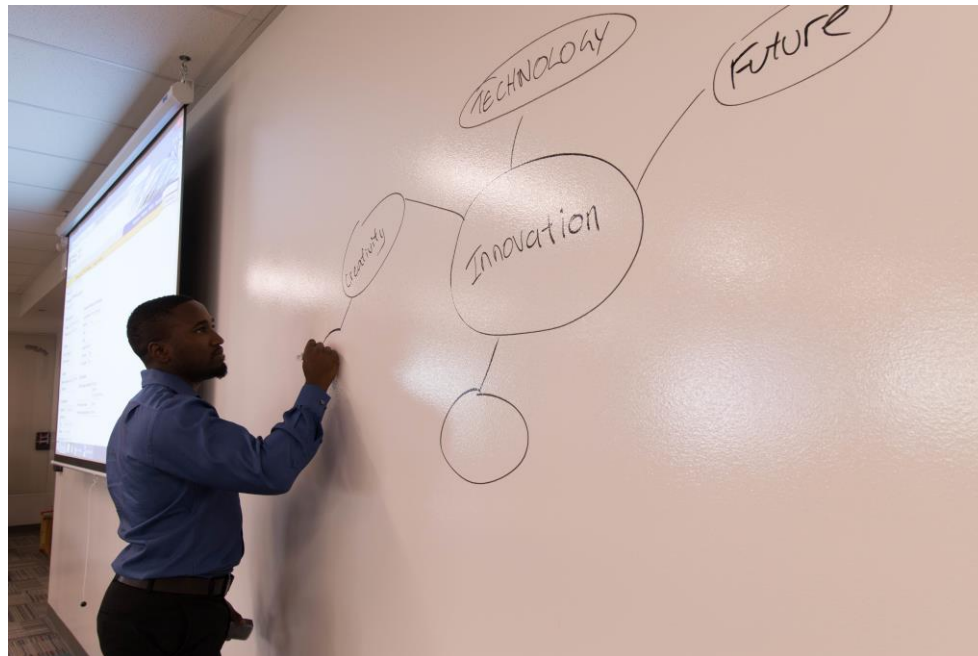


University  
of Victoria

# Facilitating Active Learning

## 2. Collaborative spaces

Designated group work spaces, modular tables, writeable surfaces, screen-sharing capacity and shared workstations allow students to collaborate in groups or as a class. Open space and flexible furniture allows the instructor to adjust groups as needed and to easily circulate within the room to facilitate group work.



University  
of Victoria

# Facilitating Active Learning

## 3. Student-Instructor connection

Instructor stations located in the center of the ALC rather than at the side or in the front allow the instructor to more easily circulate the room. Wide aisles enable the instructor to move from group to group easily, while enhanced sightlines ensure that all students are visible to the instructor and vice-versa. Screen-sharing and multiple displays allow students to see what the instructor is displaying and enable the instructor to share student work with the rest of the class.



Queen's University - EHS Hall Active Learning  
<https://www.flickr.com/photos/queensucanada/12107964783>



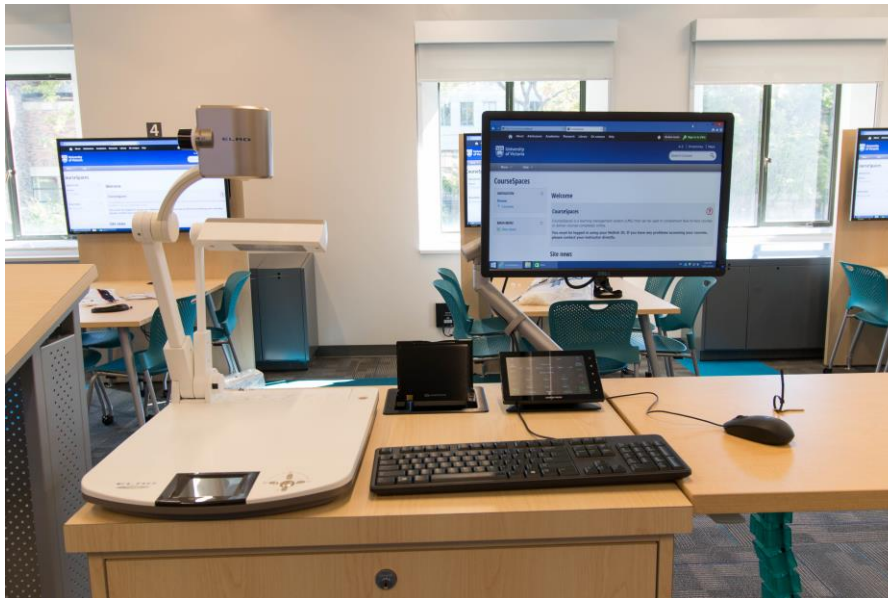
University  
of Victoria



# Facilitating Active Learning

## 4. Technology-enhanced learning

Simple interfaces that enable the instructor and students to easily control the technology in the room enable integrated learning within the classroom. Classes can interact collaboratively with the technology to manipulate and create information, and instructors can facilitate this process with minimal familiarity and training. The appropriate infrastructure including outlets, workstations, projects, and microphones are integrated seamlessly into the room.



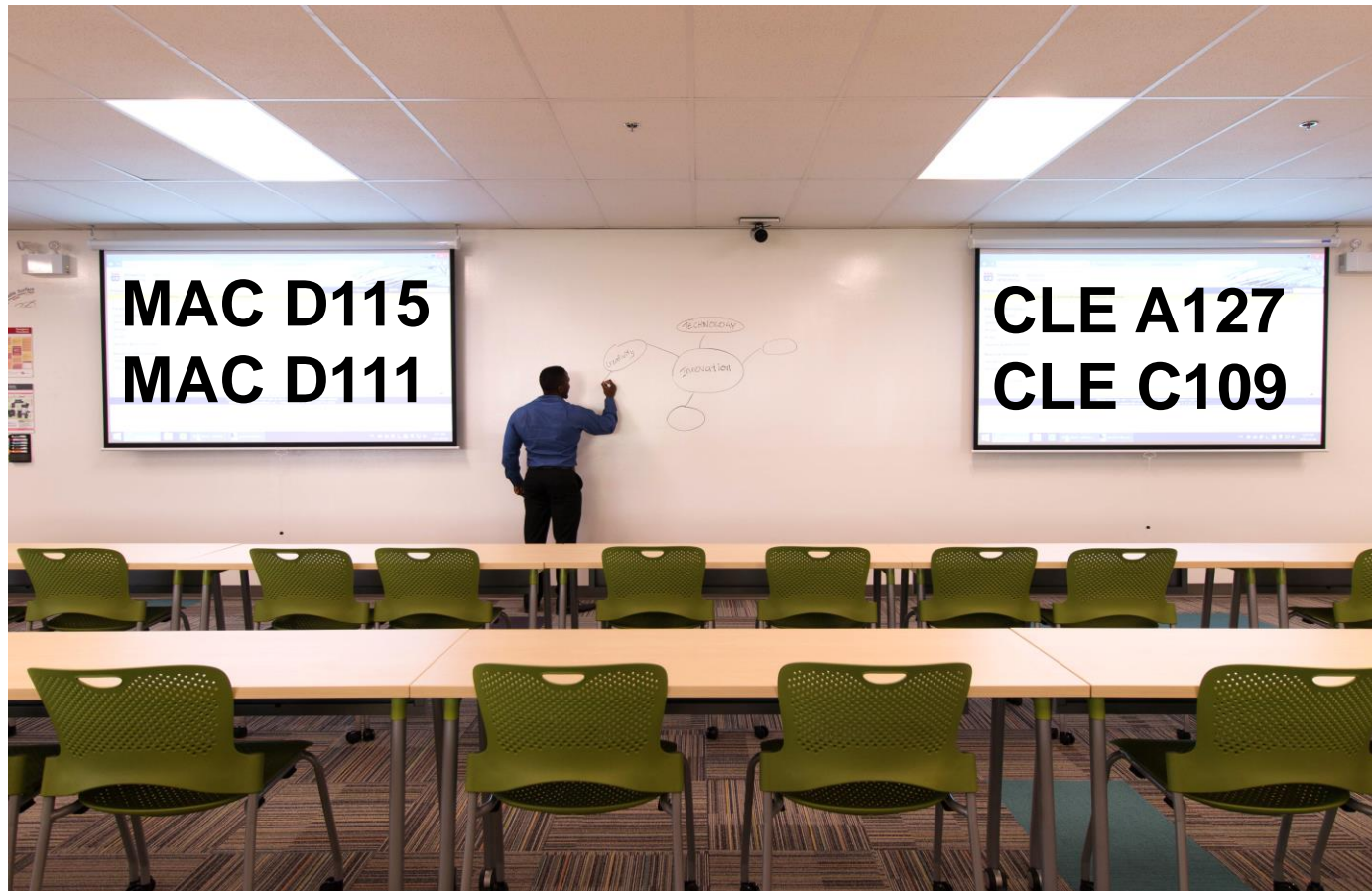
University  
of Victoria

# Active Learning Classrooms at UVIC



# ALCs at UVic

Active Learning Classrooms developed at UVic so far include:



University  
of Victoria



# Sources/Additional Reading

Active Learning Classrooms Working Group, University of California, Berkeley. "The Case for Active Learning Classrooms." 19 July 2010. [http://vcue.berkeley.edu/ActiveLearningClassrooms\\_FinalReport.pdf](http://vcue.berkeley.edu/ActiveLearningClassrooms_FinalReport.pdf)

Beichner, Robert J, *et al.* "The Student-Centered Activities for Large Enrollment Undergraduate Programs (SCALE-UP) Project." In *Research-Based Reform of University Physics*, vol. 1, issue 1. <http://www.per-central.org/items/detail.cfm?ID=4517>

Bradshaw, James. "University students fare better with interacting learning, study finds." *Globe and Mail*, 12 May 2011. <http://www.theglobeandmail.com/news/national/university-students-fare-better-with-interactive-learning-study-finds/article2020684/>

Center for the Enhancement of Teaching and Learning, Georgia Institute of Technology. "Teaching for Learning: A Philosophical Approach to Classroom Design – Five Basic Principles." <http://www.cetl.gatech.edu/sites/default/files/Classroom%20Design%20-%20Principles%20and%20Information%20for%20Georgia%20Tech.pdf>

HermannMiller. "Rethinking the Classroom: Spaces Designed for Active and Engaged Learning and Teaching." [http://www.hermanmiller.com/content/dam/hermanmiller/documents/solution\\_essays/se\\_Rethinking\\_the\\_Classroom.pdf](http://www.hermanmiller.com/content/dam/hermanmiller/documents/solution_essays/se_Rethinking_the_Classroom.pdf)

McGill Learning and Teaching Services. "Active Learning Classrooms (ALCs)." <http://www.mcgill.ca/tls/spaces/alc>

McGill Learning and Teaching Services. "Report on Active Learning Classrooms." [http://www.mcgill.ca/tls/files/tls/report\\_on\\_active\\_learning\\_classrooms\\_for\\_2010-11.pdf](http://www.mcgill.ca/tls/files/tls/report_on_active_learning_classrooms_for_2010-11.pdf)

McGill Learning and Teaching Services. "Principles for Design Teaching and Learning Spaces." [http://www.mcgill.ca/tls/files/tls/principles\\_for\\_the\\_design\\_of\\_teaching\\_and\\_learning\\_spaces\\_2014\\_f.pdf](http://www.mcgill.ca/tls/files/tls/principles_for_the_design_of_teaching_and_learning_spaces_2014_f.pdf)



University  
of Victoria



# Sources/Additional Reading

McGraw Hill Financial. "Robert J. Beichner, 2011 Prize Winner." <https://youtu.be/MdymI61hLPY?list=PLE8C54256779B374D>

Michigan State University. "Rooms for Engaged and Active Learning." <https://tech.msu.edu/classroom-technology/real.php>

North Carolina State University PER&D Group. "SCALE-UP: Student-Centered Active Learning Environment with Upside-down Pedagogies." <http://scaleup.ncsu.edu/>

Pedagogy in Action: The SERV Portal for Educators. "How do I implement studio teaching?" <http://serc.carleton.edu/sp/library/studio/how.html>

Queen's University. "What Are Active Learning Classrooms?" <http://queensu.ca/activelearningspaces/active-learning/why-do-active-learning>

Schaffhauser, Dian. "6 Secrets of Active Learning Classroom Design." Campus Technology, 7 August 2015. <http://campustechnology.com/articles/2015/07/08/6-secrets-of-active-learning-classroom-design.aspx>

Soderdahl, Paul A. "Library Classroom renovated as an active learning classroom." Library Hi Tech, vol 29 issue 1 (2011): 83-90.

Sparks, James. "Active Learning Classroom Designs." <http://activelearner.ca/active-learning-classroom-designs/>

Whiteside, Aimee and Steve Fitzgerald. "Designing Spaces for Active Learning." Implications, vol. 7 issue 1. [http://www.informedesign.org/news/jan\\_v07r-pr.2.pdf](http://www.informedesign.org/news/jan_v07r-pr.2.pdf)



University  
of Victoria