BACKWARD DESIGN

\-

PLAN LEARNING EXPERIENCE AND INSTRUCTION

Backward Design - Plan Learning Experience and Instruction

After defining the learning outcomes and assessments for the course, we need to think about the teaching strategies, in other words *what techniques/resources we will use to share information*, engage students with the material and enable them to attain desired outcomes.

Students vary in the ways that they best learn, so it's often effective to use variety of strategies. The following links contain general suggestions from the CTL for improving your use of different teaching strategies:

Think-Pair-Share	One-Minute Paper	Concept Map	Jigsaw Strategy
Case-Based Learning	Lecturing	Group Work	Scaffolding

For further information, please refer to **Teaching Strategies**.

When selecting a teaching strategy, you need to make sure that it

- is **aligned with the learning outcomes** of your course.
- uses **relevant materials**.
- can be meaningfully **assessed**.
- **engages students** and **promotes active learning**.
- can be **easily explained to students.**
- enables you to use **class time effectively**.
- fits with the **group size**.

According to Schuell (1986), the teacher's fundamental task is to get students to engage in learning activities that are likely to result in achieving learning outcomes. Remember that what the student does is actually more important that what the teacher does.

To keep students actively engaged in lectures, we may benefit from the active learning activities provided in Figure 1. At the simplest level, active learning is the inclusion of student activity into a traditional lecture such as pause procedure, think-pair-share and minute paper. At the more advanced level, active learning involves designing learning activities that facilitate a deep understanding of the important ideas to be learned.

To do this, activities such as collaborative learning, problem-based learning, and inquiry learning must be organized around the learning outcomes and encourage meaningful student engagement (Brame 2016; O'Neal & Pender-Grover, n.d.).
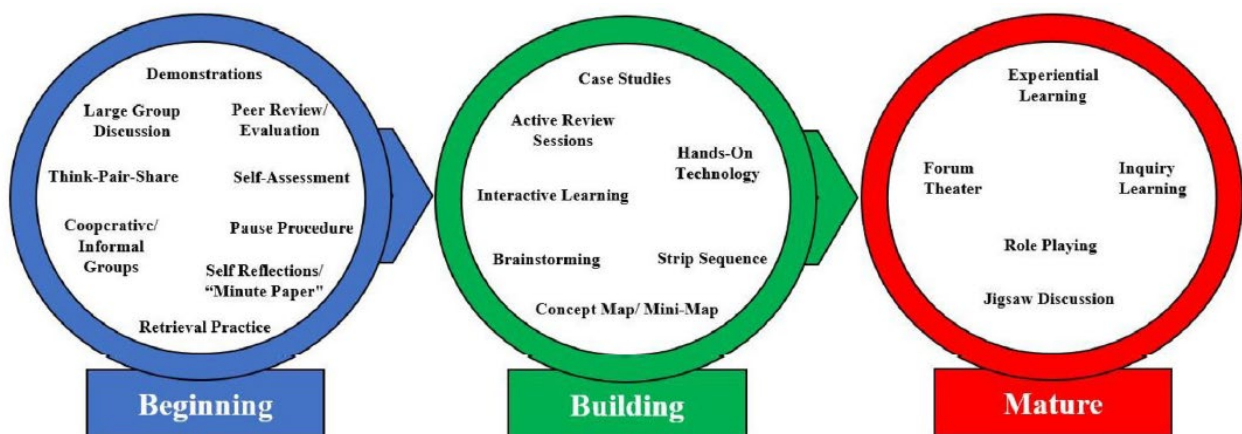

Figure 1. Active learning approaches from least complex (beginning) to most complex (mature).

For further information, please refer to **Active Learning**.

How do I know which active learning activities are appropriate for my class?

- Try out a variety of learning activities to see which one works best for your students. Ask the class which activities they have used previously, and which ones helped them learn most.

- New knowledge should be presented in small steps, with opportunities for well scaffolded practice and review (Rosenshine, 2012). For example, low-stakes testing at spaced intervals has been shown to increase recall (EEF, 2014).

- Ask for feedback from your students frequently using a "Stop-Start-Continue" activity – using an anonymous survey or index cards, ask them to list what you should (1) start doing, (2) stop doing, and (3) continue doing in the class to help them learn. Students will let you know if you have overused an activity.

- Identifying student learning challenges helps to decide which teaching strategies to use. Learning takes place in learners' heads. This means it is challenging for the teacher to know what they have learnt and how well they have learnt it.
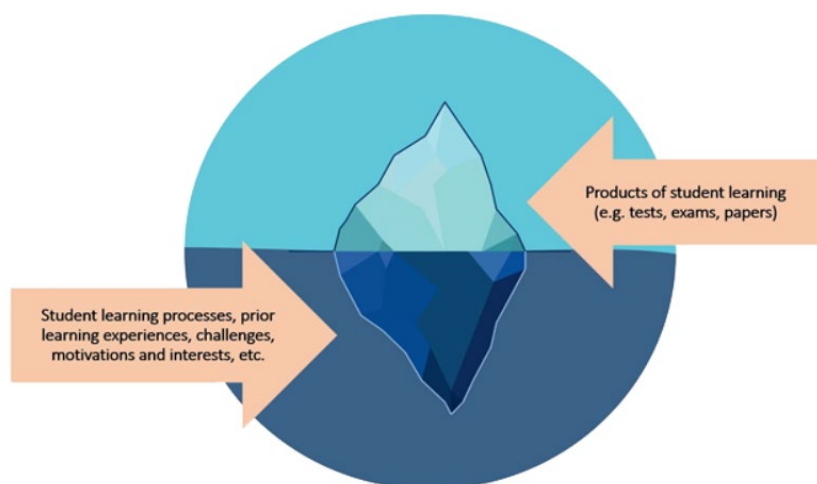
Adapted from "ice-berg" by Merryl Zorza Licensed under a Creative Commons Attribution-NoDerivs 2.0 Generic (CC-BY-ND 2.0).

How much time do I need to run an active learning activity in my class?

The time it takes to run an activity depends on the outcomes you want to achieve. Many active learning strategies take just a few minutes (e.g. Reflection, Think-Pair-Share, One Minute Paper), while extended activities (e.g. case studies, simulations) may take the whole class or several classes.

❖ Before starting an activity, know how much time you want to spend on it and let your students know how much time they have.

❖ During the activity, periodically remind students how much time they have left before they need to share their work.

Overall, Fink (2003) provides an effective way of reviewing the alignment of your learning outcomes, assessments and activities with the use of a table. Using all of the information about your course you have collected so far, you can create a table like the one below. You can enter each learning outcome and its corresponding assessment, teaching strategy and any resources you may need.

Learning Outcome	Assessment	Teaching Strategy	Resources
Learning Outcome 1			
Learning Outcome 2			
Learning Outcome 3			

For further information, please refer to **Formative and Summative Assessment** and

Classroom Assessment Techniques.

There are some guiding questions for you to consider while deciding the teaching strategies in your course.

- o Are the teaching strategies aligned with your learning outcomes?
- o Are the teaching strategies aligned with your assessment plan in terms of facilitating students to develop the necessary skills and knowledge for successful completion of the course assessments?
- o Given that the average attention span for students is 10-15 minutes, what instructional strategies will you use to help maximize effectiveness?
- o Will you use videos, graphs, slides to supplement your teaching?
- o What do you know about your students that will affect your teaching strategies?
- o How do you motivate your students to learn and keep engaged with the content?
- o Does the distribution of time accurately reflect the outcomes of the course?
- o Is the strategy flexible enough to be used in all learning environments?
- o How does the strategy engage students as active participants in their learning?

Still need help? **Contact CTL** to speak with a consultant or arrange a departmental workshop.

References

Education Endowment Foundation (EEF). (2014). Neuroscience and education: A review of educational interventions and approaches informed by neuroscience. London: EEF.

Fink, D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses.* San Francisco, CA: Jossey-Bass.

Rosenshine, B. (2012). Principles of Instruction: Research based strategies that all teachers should know. American Educator.

Schuell, T. J. (1986). Cognitive conceptions of learning. Review of Educational Research, 56, 411-436.

O'Neal C, Pender-Grover T. n.d. Active learning techniques. Center for Research on Learning and Teaching Document. University of Michgan.

http://crlt.umich.edu/sites/default/files/resource_files/Active%20Learning%20Continuum.pdf.

Brame CJ. (2016). Active Learning. Vanderbilt University.

https://cft.vanderbilt.edu/wp-content/uploads/sites/59/Active-Learning.pdf

Designing Activities. Curriculum, Assessment and Teaching Transformation. University at Buffalo. https://www.buffalo.edu/catt/develop/design/designing-activities.html

Active Learning. Teaching and Learning in Higher Education. Queen's University. https://www.queensu.ca/teachingandlearning/modules/active/index.html

Selecting Teaching Strategies. Faculty Development. North Carolina State University.

https://ofd.ncsu.edu/teaching-learning/preparing-for-your-course/selecting-teaching-strategies/

Active Learning. Cambridge Assessment International Education.

https://www.cambridgeinternational.org/Images/271174-active-learning.pdf

Further Reading and Resources

- Eison, J. (2010). Using active learning instructional strategies to create excitement and enhance learning. Journal Pendidikantentang Strategi Pembelajaran Aktif (Active Learning) Books, 2(1), 1-10.

- Instructional Strategies. University of Alberta.

- Promoting Active Learning. Center for Teaching & Learning Excellence. University of Utah.

- Identify Appropriate Instructional Strategies. The Eberly Center for Teaching Excellence and Educational Innovation. Carnegie Mellon University.

- Course Design. Center for Teaching & Learning Excellence. University of Utah.