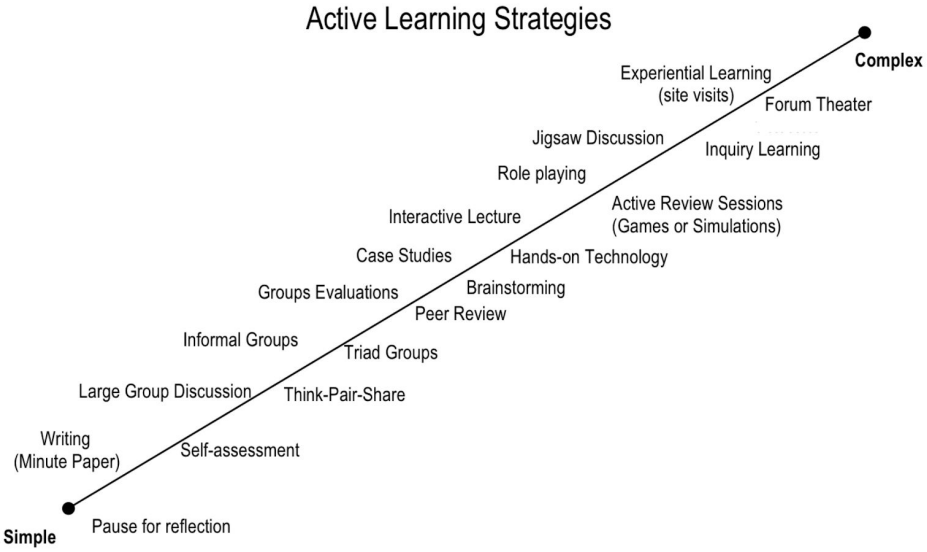
Faculty Learning Community - Module 3

Promoting Active Learning

"Active learning" is a broad term describing a variety of teaching strategies that involve students in the creation and application of own their knowledge. There are so many and such varied approaches to promoting active learning in the classroom that it may be easier to define what it is not: namely, the "traditional" classroom situation in which instructors merely lecture and students watch, listen, and take notes. (It's important to note here that we don't mean to minimize the instructional value of lecture. However, in order to prevent students from taking on a passive role, lecture should always incorporate opportunities for more hands-on learning.)

Active learning strategies can be collaborative or individual, and they can range from simple, one-time activities (e.g., minute papers, small group work) to more complex instructional frameworks (e.g., project-based learning, a flipped classroom format).



Instructors who want to promote active learning in the classroom might consider:

- Giving students frequent "time-on-task" opportunities in class to apply their learning
- Helping students make connections between course content and their own lives, home communities, career fields, other courses, etc.
- Establishing relevance within the course to current events and discourses
- Avoiding mere "explanations" of concepts if "modeling and demonstration" methods are possible; asking students to model the process back
- Creating opportunities for students to interact with relevant sites or experts in the field
- Simulating real-world, problem-solving contexts for students, where appropriate
- Recognizing and capitalizing on the strengths of social and collaborative learning

* Diagram courtesy of University of Michigan's Center for Research on Teaching and Learning

Helpful Resources

Davidson, Neil, and Claire Howell Major. "Boundary Crossings: Cooperative Learning, Collaborative Learning, and Problem-Based Learning." ***Journal on Excellence in College Teaching*** **25.3-4 (2014): 7-55.** This article compares and contrasts several different "small group" active learning approaches, including: cooperative learning, collaborative learning, and problem-based learning (PBL). For each approach, they address its origins, definition(s), essential features, goals, strategies for application, and research on its efficacy. Group work can be tricky to facilitate in the classroom, so the sections that include "sample learning strategies" and describe how to implement them in the classroom are particularly helpful. The article is also full of interesting research that allows readers to read more about the studies upon which the methods are based.

Freeman, Scott, Sarah L. Eddy, Miles McDonough, Michelle K. Smith, Nnadozie Okoroafor, Hannah Jordt, and Mary Pat Wenderoth. "Active Learning Increases Student Performance in Science, Engineering, and Mathematics." ***Proceedings of the National Academy of Sciences*** **111.23 (2014): 8410-8415. Retrieved from: https://doi.org/10.1073/pnas.1319030111.** While this paper does not provide you with strategies for implementing specific practices, it does provide a strong case for active learning. This meta-analysis of 225 studies on the efficacy of active learning vs. traditional lecture in STEM courses came to the conclusion that "average examination scores improved by about 6% in active learning sections, and that students in classes with traditional lecturing were 1.5 times more likely to fail than were students in classes with active learning."

Lambert, Craig. "Twilight of the Lecture: The trend toward "active learning" may overthrow the style of teaching that has ruled universities for 600 years." ***Harvard Magazine*** **(March–April 2012). Retrieved from https://harvardmagazine.com/2012/03/twilight-of-the-lecture.** This journalistic article tells the story of Harvard professor Eric Mazur, who once considered himself a great lecturer. One day he realized that his students actually had a very shallow understanding of basic physics concepts, although they could ace his tests. The article describes how his understanding of his teaching role changed--from "transferring information" to helping students actually process and assimilate that information. The article cites evidence that interactive and social learning contexts (e.g., discussion and peer instruction) can triple student knowledge and vastly improve longer-term retention of that knowledge. Mazur's change in approach was not without problems (such as student resistance), and the author also addresses these issues.

Lang, James. ***Small Teaching. Everyday Lessons from the Science of Learning.*** **San Francisco, CA: Jossey-Bass, 2016.** This book has a lot of great insight about teaching and learning, starting from the perspective of recent findings in learning science (i.e., the practices that are proven to help you get knowledge to *stick*). In particular, the chapters on "Connecting" and "Self-Explaining" have a lot of helpful information about how to move students from basic recall to a deeper understanding and connection with the content. At the end of these chapters, Lang spells out some great "small teaching" activities for helping students forge their own connections to material, such as: skeleton notes, the minute thesis, concept maps, self-explanation, backward fading, peer instruction, and think-aloud. This book is available as a hard copy in OTLE and as an ebook in the MSUN library. The "Connecting" chapter referenced here appears in Brightspace in the reference section of this module.