



## Active Learning Series

### PART 1: Basic Principles of Active Learning

#### What is Active Learning?

In a very broad sense, active learning strategies are instructional activities that engage students in doing things as well as thinking about what they are doing (adapted from Bonwell and Eison, 1991). Active learning approaches support the student-centered, co-construction of knowledge, skills, and values (more than the transmission of information from the instructor to the students). By participating in individual *and* group activities related to the subject matter, such as reading, writing, discussing, and reflecting, students develop their higher-order thinking skills. Providing students with timely feedback from peers and instructors as well as helping them think about their own learning (i.e., metacognition) further support *learning by doing*.

#### Benefits of Active Learning for Faculty and Students

- The National Survey of Student Engagement (NSSE) has followed the engagement experiences of thousands of college students since 2000. Their consistent results show that hands-on, integrative, and collaborative active learning experiences lead to **high levels of student achievement and personal development** (Kuh et al., 2017).
- Owens et al. (2017) found that active learning can positively **impact student motivation**.
- Reimer et al. (2016) found active learning to be particularly **beneficial to first-generation college students in STEM courses**, boosting both retention and passing rates.
- Freeman et al. (2014) conducted a meta-analysis involving high enrollment lectures and found that active learning **increases student performance on exams** by an average of 6%, and decreased failure rates from 34% to 22%.
- Gray et al. (2010) found **students who used “hands-on” active learning outperformed the control group**, who passively received a lecture, on a concept test by a mean of 68%.

#### Varied Contexts for Engaging Students in Active Learning

A course plan provides a roadmap for the instructor of *what students will learn* in class and *how class time will be used* effectively to achieve learning. Traditionally, course planning starts with the content, which focuses attention and effort on what the instructor will teach and how they will teach it. In contrast, a more integrated design – a learner-centered approach to course planning – begins with an examination of situational factors and works “backwards” from traditional planning.

Beginning with the *context of the teaching and learning situation*, Fink (2005) suggests answering the following questions:

- How many students are in the class?
- Is the course at the lower division, upper division, or graduate level?
- How long and frequent are the class meetings?
- Will the class be delivered live, online, in a laboratory, etc.?
- What physical elements of the learning environment will affect the class?

The context of teaching intersects with active learning strategies for varied opportunities for integration. Part 2 of this resource considers teaching with these strategies in specially designed spaces – Active



Learning Classrooms. Part 3 explores the idea of Flipped Classes to structure more time for active learning. Part 4 describes Interactive Lectures whereby a more traditional lecture class is broken up with active learning activities that allow students to talk, write about, and think about course content. Part 5 aggregates multiple Active Learning Strategies into one document. The next, Part 6, describes and provides many examples of active learning applied in lectures, discussion sections, and lab sections. Parts 7 and 8 examine managing student groups in active learning and assessing and providing feedback, respectively. The series concludes with Part 9, a resource sheet to share with students that provides tips on how they can actively engage with learning as they study and prepare on their own.

### Citation

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### References

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