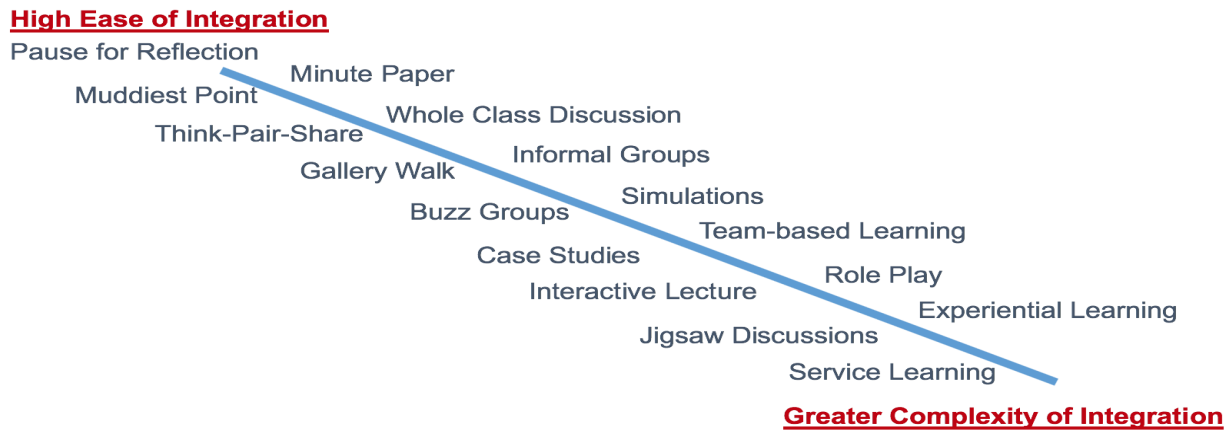## *Active Learning Series*
### PART 5: Active Learning Strategies

### Active Learning Strategies that Promote Student-Centered Learning

In the graph below, we present some active learning strategies that you can incorporate into your class. All strategies are student-centered and are designed to help students and groups participate, communicate, and reflect upon their learning.  Strategies range from the highly simple to integrate to more complex.

**High Ease of Integration**

Pause for Reflection
Minute Paper
Muddiest Point
Whole Class Discussion
Think-Pair-Share
Informal Groups
Gallery Walk
Simulations
Buzz Groups
Team-based Learning
Case Studies
Role Play
Interactive Lecture
Experiential Learning
Jigsaw Discussions
Service Learning

**Greater Complexity of Integration**

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

Figure 1: Continuum of active learning strategies

The following tables briefly describe some of these strategies and more.  Strategies are organized around intention – from activating your lectures, to checking for understanding, to peer teaching, to inquiry- and writing-based activities.

| Break up your lecture with time to process, discuss, or practice |
| --- |
| **Entry/Exit Ticket**:  Entry and exit tickets are short prompts that are provided at the beginning or end of a class to help students reflect on what they have learned. For instance, an entry ticket question might include, "What is one concept you remember from our last class session?" Entry and exit tickets can be completed on paper, through a survey, or as a Zoom chat response.<br><br>**Pause for Reflection**:  Throughout a lecture, particularly after presenting an important point or key concept, allow students to think about the information or check their notes.  After waiting, ask if anyone needs to have anything clarified.<br><br>**Think/Write-Pair-Share:** For this activity, the instructor asks the class a question, and then gives students a few minutes to think about or write down a response. Students then pair up and share their ideas |

**Send-a-Problem:** For this activity, students break up into groups. Each group is given a problem to solve together. After coming up with a solution, the group then passes the problem and their solution to another group. After several groups have attempted to solve the problem, the groups must work together to analyze and synthesize the responses to the problem and report the solution to the class.

**Buzz Groups**: In this activity, students form teams of 4-6 and respond informally to a series of course-related questions. One useful variation on this activity is to assign students roles in the group (e.g., recorder, time-keeper, presenter, etc.) to help them organize and manage the task.

**Active Listening:** Ambrose et al. (2010) suggest building active listening competency by asking students to "paraphrase what someone has said, followed up by a series of questions as to whether their perception was inaccurate or incomplete" (p. 186). The authors also suggest modeling this technique by paraphrasing your students responses in classroom discussions.

**Whole-Class Discussion:** Prepare a list of questions for large-group discussions and ask students to discuss a topic, after your mini-lecture, in class. You may also want to call on particular students and ask them what they think about.

## Assess students' understanding

**Clicker Quizzes:** Short, in-class quizzes using clickers can be used to assess in the moment how much students' are understanding the lecture and whether you may need to go over a topic.

**Minute Papers**: These short writing activities, where students spend a few minutes writing short responses to questions meant to gauge their understanding of a class concept, can also provide you with an opportunity to assess students' understanding of content in a more holistic way than quizzes.

**Polling:** Using polls periodically throughout a class session can help you monitor students' understanding of concepts. Polling can be used to review concepts, make predictions, and gauge student agreement, among other uses. Polls can either be set up in advance (using tools such as Zoom or Poll Everywhere) or can be done on the fly by asking students to raise their hands to vote for a response.

**Informal Groups:** Assign students to groups or have students create groups. Then pose a question or assign a problem to each group while you circulate around the room to answer questions and keep the groups on task. Afterwards, ask all, or some of the groups, to report back to the rest of the class.

**Worked Examples:** The instructor provides students with an already solved problem. Working individually or in groups, students examine the worked example and write an explanation for each step of the solution. A possible variation would be to include some incorrect steps in the example, which students would need to identify.

**Concept Maps:** Concept maps are visual representations of ideas. Typically lines and arrows are used to illustrate relationships between particular course concepts. Concept maps can be created individually or in groups, and it is often useful to have students compare their concept maps or offer each other feedback to deepen their analysis of how different concepts relate to each other. Concept maps can be created by hand or with the help of tech tools such as Lucidchart.

**Muddiest Point:** Towards the end of class, ask students to write a short note explaining which point from that day's class is most unclear to them. This strategy helps you better assess student learning and helps students reflect on their learning process.

## Implement reciprocal teaching activities

**Note-Taking Pairs:** As the name suggests, this activity works by having students take joint notes. This allows students to capture more material in their notes, likely improving both partners individual notes.

**Collaborative Problem Solving:** Students are assigned to small groups and assigned one or more tasks to work on together. Students are expected to work together to complete a task and develop a shared answer or a written product. Groups may then be asked to compare their responses or share their process with the rest of the class.

**Jigsaw Discussion:** Divide the class into small groups, each of which is assigned a different task. Each group develops knowledge and completes their task, becoming the "expert." Then, new groups are formed, each comprised of one member ("expert") from each of the original groups (so all group members in the new group have completed a different task). Students then take turns presenting their work and teaching it to the rest of the group. In this exercise each student is an "expert" in one task and exposed to all other tasks (Barkley, Major, & Cross, 2014).

**Group Investigation:** In groups, students are assigned a sub-topic in the class that they are in charge of researching and then creating a final product to teach the class about their sub-topic.

**Gallery Walk:** Set up stations or displays throughout the room. Organize so students rotate through each station (individually or in groups), completing a task or responding to a specific prompt at each station.

**Learning Cell:** Have students complete a reading or problem set before class and write questions that deal with the major points of the assignment. Then in class, students pair up. Partner 1 asks their questions of Partner 2, who answers them. If necessary, Partner 1 corrects their answers, or adds to them to make them more complete. Then repeat for the other pair member.

**Role Play:** Ask students to "act out" a position or argument to get a better idea of the concepts and theories being discussed. Role-playing exercises can range from the simple to the complex.

## Organize and structure for inquiry-based learning

**Field-Based Investigations:** You could design activities (or a project) where students must investigate a phenomenon of interest, a controversy, or a problem currently impacting the field. Then, break up the object of inquiry into several mini-assignments that are scaffolded in complexity (from easier to more complex) over the quarter, so that the tasks are more manageable for students.

**Authentic Writing Projects**: Anderson, Hoffman, & Little (2014) define "authentic" writing assignments as asking students to practice the types of writing and thinking in which professionals in their discipline actually engage. Authentic writing projects can give students a chance to see what writing and inquiry looks like in their own disciplines while providing them with an opportunity to write to a realistic audience.

**Case Studies:** In teams, students are given a case study describing a real world and/or field-related problem. Each team must then develop a solution to the problem, using course concepts, outside research, etc.

**Group Investigation:** In groups, students plan, conduct, and report on an in-depth research project that is topically related to the course, though not covered by the instructor. This type of project allows students to dig into a particular topic and gain more specialized knowledge in that particular area. For step-by-step instructions on how to design a problem-based activity, see this article from Faculty Focus.

**Experiential Learning:** Plan site visits that allow student to see and experience applications of theories and concepts discussed in the class or get involved with communities that are impacted by the concepts discussed.

## Integrate writing-to-learn activities

**Free Writes:** Short, ungraded, in-class exploratory writing activities meant to get students engaged in a course topic.

**Reading or Concept Responses:** Student must write a response on an online discussion board responding to specific readings or course concepts. Instructors should provide guiding questions for these responses.

**Lecture Summaries:** Students are asked to write a short summary of a class lecture. This activity can be done in or out of class.

**Inquiry/Problem-Based:** Students are asked to research and investigate a current issue or problem facing the field.

**Compare/Contrast Analysis:** Students are given a series of opposing readings and must compare/contrast how and why the scholars' perspectives differ.

**Position Papers:** Students are asked to research and support a specific position on a controversy impacting the field.

**Citation**
Center for Educational Effectiveness [CEE]. (2021). Active Learning Series. *Just-in-Time Teaching Resources.* Retrieved from https://cee.ucdavis.edu/JITT

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