

Activate Active Learning

December 30, 2015

Take a moment to reflect on your educational experiences: How were you taught during your primary education years compared with your secondary education years and with your higher education experiences? When I ask my friends and colleagues these questions, many note a shift from active to passive learning, from student-centered to teacher-centered classrooms. Our educational pipelines seem to leak active, hands-on experiences until all that remains are lectures and slideshows. As instructors, we need to reclaim the active-learning, student-centered classroom to give students the best learning experience possible.

Why Active Learning?

Numerous studies have shown that lecturing is an ineffective method of teaching (e.g., Wieman, 2014) as it is not based on the most effective teaching and learning techniques. Lecturing would be an appropriate teaching tool if students were “blank slates” on which information could be recorded and remain forever — but research on mind, brain, and science education has found otherwise. Through the fields of psychology, neuroscience, and education, we know that people construct information rather than soaking it up. In other words, instead of passively receiving new information, people incorporate that information into their current schemas; they use their past experiences and current knowledge to mold their understanding of the new information. Instructors play important roles as facilitators and mediators in aiding students’ construction. According to Tracey Tokuhama-Espinosa (2010), teachers can best fulfill these roles by providing novelty, giving feedback, understanding memory and attention, and realizing that information is best remembered when applied to real-world contexts.

Such tactics align with fundamental learning principles established by educational psychologists. APS James McKeen Cattell Fellow Diane F. Halpern, APS Fellow Arthur C. Graesser, and Past APS Board Member Milton D. Hakel’s (2007) oft cited “25 Learning Principles to Guide Pedagogy and the Design of Learning Environments” outlines many of these principles. Drawing upon research from psychological scientists such as APS Fellow Richard Mayer, APS Past President Henry L. “Roddy” Roediger, III, APS Past President Robert A. Bjork,* and Graesser, the article explains effects related to dual coding and multimedia presentations, testing, free recall versus recognition, multiple-example production, self-explanation, deep questions, feedback, cognitive flexibility, and metacognitive awareness. Active learning allows educators to apply these theoretical principles.

What Does an Active Learning Classroom Look Like?

Active learning requires teachers to change how they think about the role of the student. Rather than being consumers of information, students are active producers of their own understanding of concepts; they ask, investigate, create, discuss, and reflect (Bruce & Bishop, 2002). The instructor is responsible for scaffolding students by providing activities that are challenging but not overwhelming. Assessment is ongoing, and the information that the assessments provide is useful for both the instructors and the

students. When the instructor administers regular, low-stakes assessments — which often are engaging activities themselves — students gain a realization of what they do not know and instructors gain insight about what needs to be retaught.

How Can Teachers Incorporate Active Learning Strategies?

Making your classroom an active, student-centered environment does not happen overnight; rather, start by adopting one technique and incorporating it regularly into your courses. Ideally, implement your chosen strategy on the first day of class, so students know that they are expected to engage in class and take responsibility for their learning. As you and your students become comfortable with that particular strategy, consider adding others. Below are a few examples of activities that promote active learning.

Think–Pair–Share

Have you ever asked your students a question only to get dozens of blank stares in return? Many times, students do not answer questions because they do not have enough time to organize their thoughts. The “think–pair–share” strategy eliminates this problem, and it also helps students integrate new information and address misconceptions. In this 5-minute activity, students take 1 minute to reflect on their answer to a question. They then pair up with a person sitting nearby to share their thoughts for about 2 minutes. The instructor then asks some of the students to share what they discussed (UMCEI, n. d.).

3-2-1

How many times have you asked students if they have any questions at the end of class only to be met with shakes of the head and packing up of bags? Chances are, most of these students are confused by something they are not acknowledging. The “3-2-1” activity seeks to remedy that confusion. Have students discuss three central ideas from the day’s class in pairs or small groups. Next, tell them to brainstorm two examples of each of those ideas, and finally, have them submit one question that they have about the material. This activity not only helps students clarify and consolidate knowledge, but it also allows students to elaborate on their understanding. Importantly, 3-2-1 helps both you and the students realize what information should be addressed again in subsequent classes (UMCEI, n. d.).

Focused Listing

Have you ever heard students say that we use only 10% of our brains? Many fields are rife with misconceptions, and psychology is no exception. “Focused listing” can be helpful for instructors striving to identify specific misconceptions.

At the beginning of a unit, give students a prompt to elicit their current understanding of and assumptions about the topic to come. For example, on the first day of class, I like to ask students what comes to mind when they hear the words “scientist” and “psychologist.” Then have students write their responses on a whiteboard or flip chart. Focused listing allows students to articulate their prior ideas about a topic, which helps educators to gauge their base knowledge. Having students do this activity again at the end of a unit is also helpful so that both you and the students can visualize their learning progress (UMCEI, n. d.; OICIUB, n. d.).

Visualize It

Harness the power of the doodlers in your class with the “visualize it” activity, which allows students to form multiple representations of their understanding. Break students into teams of four. Divide a chapter or general topic into smaller sections and give each team one of these sections. Then have the teams draw their assigned piece into a coherent visual, either on a transparency, flip chart, large piece of paper, or whiteboard. To help the teams work effectively, consider assigning roles to each member of the team (e.g., a recorder to draft ideas, two artists, and a speaker). Finally, have each team show and describe their visual to the class. This activity helps students synthesize information and identify the most important components of a concept. It also gives them an opportunity to explain ideas in their own words and offers them yet another way to encode concepts in their long-term memories (OICIUB, n. d.).

Where Can I Learn More?

Many colleges and universities house centers for teaching excellence that provide active learning resources. The University of Michigan’s Center for Research on Teaching and Learning (www.crlt.umich.edu/tstrategies/tsal) and George Mason University’s Center for Teaching and Faculty Excellence (ctfe.gmu.edu/teaching/active-learning/) are two examples of institutions that provide exemplary information on active learning.

References and Further Reading

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