**Interactive Methods**

Since Bonwell and Eison’s seminal work (1991), “active learning” has been a buzzword in the scholarship on teaching and learning. But the phrase can be misleading. Whenever someone learns something, the learner has been active to some degree—maybe not physically, but certainly mentally. In other words, there is no such thing as “passive learning.” As interconnected processes, however, physical and social activity often correlates with mental activity and therefore can aid learning (Zakrajsek, 2016). A more appropriate term might be “interactive learning,” which encompasses all methods of purposeful student engagement with material aided by students interacting with others (instructor or peers) and themselves.

**The Case for Interactive Methods**

Interactive learning is associated with many benefits for students. (Click [here](https://baylor.app.box.com/file/284568114215) for an annotated bibliography on interactive learning.) Group work that is a common element of interactive learning more closely aligns with the collaborative methods of most occupations and professional academics. Research consistently finds that interactive methods correlate with positive student outcomes, such as higher rates of attention, interest in subject matter, and satisfaction (Bligh, 2000; Burrowes, 2003; Sivan et al., 2000).

Interactive classrooms also perform better on measures of student learning. One meta-analysis found that in STEM classrooms with “active learning,” broadly defined, student exam scores improved by about six percent (Freeman et al., 2014). In addition to greater retention, interactive classrooms perform better (compared to lecture only) on higher-order learning measures of **Bloom’s Taxonomy**, like analysis, synthesis, and evaluation (Garside, 1996). Furthermore, interactive learning is associated with improved learning for typically at-risk students, like minorities and first-generation college students, making it an important part of inclusive teaching (Handelsman, et al, 2007)­.

Students may initially resist interactive learning methods. Lack of experience with interactive learning, the greater effort that is required of students in interactive learning, and the impression that the instructor is abdicating the “teacher” role can factor into students’ resistance. Therefore, it is important for instructors to explain the reasons for interactive learning in general (such as the learning benefits above). Instructors should also explain the specific reasons for each particular interactive learning exercise, provided they have carefully selected methods that are appropriate to learning goals and students’ abilities (Felder, 2011).

**Strategies for Interactive Learning**

The possible methods for interactive learning are perhaps limitless, constrained only by creativity and resources. Below are a few of the most common interactive learning strategies, organized from less-intensive to more-intensive, in comparison with the traditional lecture. For even more interactive learning suggestions, see these [Active Learning Cards](https://baylor.box.com/s/zony5nv0hian84jjeolu7qyouuiswbsp) from Cal State LA.

Lecturing

Although interactive methods are often pitted against “lecture only” classrooms, lecturing can be an effective interactive experience, as anyone who has ever eagerly shared a TED Talk knows. Learning is likely to happen when the lecturer carefully connects new material to students’ existing knowledge and significant human experience and also when the teacher intentionally piques students’ curiosity and imagination through the use of narrative structures—setting up conflict or tension, followed by resolution (Bain, 2004). Such techniques should not devolve into entertainment but emerge honestly from the questions or problems inherent in the subject matter itself. Instructors can also easily add a more intentional interactive element to lectures by pausing and encouraging students to ask clarifying questions (see **Effective Lectures**).

Brief Writing Exercises

Some interactive methods require little time to prepare and execute. Brief writing exercises, while also a type of **Formative Assessment**, can help students review, understand, and think critically about material. These exercises can be targeted to various levels of thinking. For instance, asking students to list items from a previous lecture reinforces basic knowledge; asking students to rephrase a central concept in their own words aids comprehension; asking students to use information in addressing a new situation gives them practice in application.

Think-Pair-Share

Another relatively simple interactive method is “Think-Pair-Share.” The instructor presents a problem or question, first asking students to think (and usually write) individually their answer(s) along with rationale and evidence. Students then discuss their answers with a partner, with the instructor encouraging respectful questioning and critique among students. Finally, the students share their insights (both individual and those gleaned from paired discussion) with the entire class, with the instructor encouraging further questioning and critique.

Discussion

“Think-Pair-Share” might be thought of as a combination of brief writing and discussion. Discussioncan be used in many ways in an interactive classroom—students discussing in pairs or small groups, or a single conversation including the entire class. Likewise, discussion can be brief interludes or the entire agenda for a class session. (See the **Discussion** page for discussion ideas.) Depending on pedagogical goals, the instructor may be more or less involved in the actual discussion. As a form of interactive learning, however, discussions should strive for the free sharing of ideas while constructing and critiquing arguments using logic and evidence.

Debate

Like discussion, debate aims at encouraging students to express their ideas to each other and to critique each other’s ideas. Debate can be particularly helpful when the instructor wants students to understand and appreciate perspectives that students might not themselves hold. Unlike discussion, which often strives for consensus, debate is inherently competitive and tends to obscure the similarities of opposing viewpoints. Instructors should be aware that debate can foster a conflict mentality and give the impression that complex issues are dichotomies. A way to mitigate this is through “panel” debates, which can better acknowledge complexities and nuance (Crone, 1997).

Problem-Based Learning

Problem-based learning is a demanding but rewarding interactive strategy for students and instructors. Many other strategies begin by presenting material and then asking students to apply discrete knowledge to a well-defined problem or question. Problem-based learning, however, begins with an open-ended, usually authentic (i.e., “real-world”) problem, requiring students (often in groups) to identify what they know and what they need to know that can help solve the problem, determine how they can acquire needed knowledge, formulate hypotheses/studies/experiments, determine a solution, and report their findings. Modeled on the theory that open-ended inquiry increases student motivation, the distinct advantage of this approach is that acquired knowledge immediately takes its place in a meaningful context.

**Instructor Role in Interactive Classrooms**

The instructor often assumes a less overtly authoritative role in an interactive classroom. Some proponents have described this as moving from “sage on the stage” to “guide on the side.” This may be overly simplistic, however. Just as “higher order” thinking builds upon mastery of “lower order” thinking, interactive learning must be supported by clear academic authority. Likewise, while the collaborative nature of many interactive methods can increase student motivation, too much student autonomy can produce uncertainty that can be demotivating. Practically, this may mean giving “just-in-time” mini-lectures when students are struggling with basic terminology or concepts. The instructor should also establish early in a course that he or she welcomes and can appropriately answer pressing questions—unless the instructor has valid pedagogical reasons for *not* providing an answer, in which case the instructor should make the rationale explicit to students. In short, an instructor using interactive methods must balance autonomy with support and be flexible and competent in a range of teaching methods (Wijnia et al., 2011).

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