

Active Learning

While numerous active learning taxonomies exist, each includes the interrelated components of intentional engagement, purposeful observing, and critical reflection.¹ Active learning is grounded in constructivist and social constructivism theories. That is, learners interact more with the subject matter to construct and “own” knowledge. They are not empty vessels into whom faculty pour knowledge.² Active learning activities promote thoughtful engagement, encourage analytical thinking and reasoning, foster the integration and application of knowledge, and are designed around well-defined learning objectives.³⁻⁴ Students engage in solving problems, sharing ideas, giving feedback, and teaching one another. Active learning requires faculty who facilitate and emphasize the development of students’ skills.⁵ Active learning requires collaboration in both teaching (e.g., working teams of instructors, instructional designers, educational technology professionals, etc.) and learning (e.g., small groups). Active learning incorporates assessment as part of curriculum and instruction to ensure coherence and consistency.⁶

Research has found that active learning can enhance academic achievement, promote retention and application of knowledge, enhance understanding and mastery of course content, improve critical thinking and problem solving, improve clinical competencies, enhance interpersonal skills, promote teamwork, increase student engagement, promote positive student attitudes, increase course satisfaction, and encourage self-directed lifelong learning.⁵⁻¹⁷

The following list, taken in part from Prince’s (2004) review of active learning research, provides the generally accepted definitions and uses of common active learning terms.²⁰

- **Active learning** is defined as any instructional method that engages students in the learning process. Active learning requires students to do *meaningful* activities and think about what they are doing. While this definition could include traditional activities such as homework, in practice it refers to activities introduced into the classroom. The core elements of active learning are student activity and engagement in the learning process. Active learning is often contrasted to the traditional lecture where students passively receive information.
- **Collaborative learning** can refer to any instructional method in which students work together in small groups toward a common goal. As such, collaborative learning can be viewed as encompassing all group-based instructional methods, including cooperative learning. In contrast, some authors distinguish between collaborative and cooperative learning. In either interpretation, the core element of collaborative learning is the emphasis on student interactions rather than on learning as a solitary activity.
- **Cooperative learning** can be defined as a structured form of group work where students pursue common goals while being assessed individually. A common model of cooperative learning incorporates five specific tenets: individual accountability, mutual interdependence, face-to-face interaction, appropriate practice of interpersonal skills, and regular self-assessment of team functioning. The core element held in common is a focus on cooperative incentives rather than competition to promote learning.
- **Team-based Learning (TBL)** is an instructional method that allows a single instructor to conduct multiple small groups simultaneously in one classroom.²¹⁻²² TBL stresses the importance of out-of-class learning based on learning objectives, emphasizes the importance of holding learners accountable for attending class prepared to participate, and provides guidelines for designing group learning tasks to maximize participation. Class time is shifted away from learning facts toward application and integration of information. The instructor retains control of content acting as both facilitator and content expert. TBL consists of repeating sequences of three phases: pre-class preparation, readiness assurance, and application of concepts.
- **Case-Based Learning (CBL)** is a learner-centered instructional approach where factually based, complex problems are used to stimulate discussion and collaborative analysis. CBL involves the interactive exploration of realistic and specific situations for which there is often no single correct solution.
- **Problem-based Learning (PBL)** is a type of CBL where problems are introduced at the beginning of the instruction cycle to provide the context and motivation for learning. It is always active and usually collaborative or cooperative. PBL typically involves significant amounts of self-directed learning. Some evidence shows that PBL develops enhanced problem-solving skills in medical students and that these skills can be improved further by coupling PBL with explicit instruction in problem solving.

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