Effectivity of Interactive Learning Methods

According to the learning pyramid developed by NTL in the 1960s, it is stated that through passive learning methods, namely: lecture, reading, audio-visual, and demonstration, learners only retain 5 to 30% of the knowledge, meanwhile with active learning methods, namely: discussion group, practice-by-doing, and teaching others, learners can retain 50-100% of what they are trying to learn. Although the factual accuracy of the numerical records are unable to be verified due to the research data loss (Science Outside, 2025), the hierarchy of the effectiveness of the learning methods can be backed up by the ICAP framework developed through the research of Arizona State University (ASU) professor, Michelene "Micki" Chi, as shown in the figure below, where the framework's hypothesis is successfully validated through a number of classroom and laboratory studies (Chi et al., 2014). In this framework, the method practice-by-doing can be categorized as constructive, and methods namely: discussion group and teaching others fall into the category of interactive.
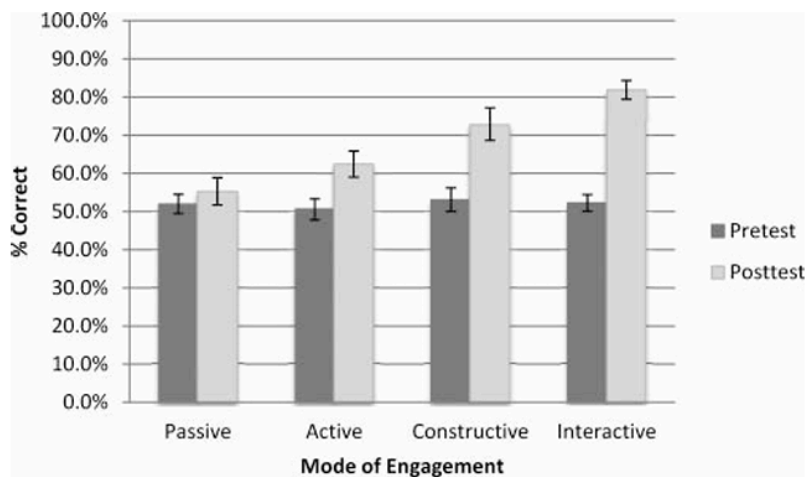

FIGURE 2 Pretest and posttest performance by mode of engagement (Menekse, Stump, Krause, & Chi, 2013).

Engaging Discussion Formats to Enhance Learning

Teachers.Institute

1. Critique and Socratic Dialogue
   - Practices continuous questioning to encourage deep reflection
   - Engages critical thinking and challenging one's own assumptions and consequences to their ideas
   - Main challenge to implement: requires a skilled facilitator to obtain meaningful questions and stay on track of the discussion.

2. Think-Pair-Share
    - Made up of the phases:
        - THINK: think about a response to the given question/prompt
        - PAIR: discuss the idea with a peer in effort to refine the idea
        - SHARE: shares insights and conclusions drawn from the discussion

3. Inquiry-Oriented Discussions
    - Learners come up with questions for the given topic, where the questions should explore different angles of the topic.
    - Instructors guide learners to think deeper and support claims with valid evidence or reasoning ("Engaging Discussion Formats to Enhance Student Learning &Bull; Teachers Institute," 2023).

Facilitating Effective Discussions and Dialogues

Horane Diatta-Holgate of University of Notre Dame

Pre-discussion

1. Strategically get to know the learners
2. Gather learner's thoughts and reflections on previous learning experience
3. Have planned responses for controversial moments

During Discussion

1. Utilize high-structure openings (inclusive way of starting a discussion)

Low-Structure Openings	High-Structure Openings
"Who would like to start?"	A five-minute writing activity, electronic or manual poll
"What is your opinion?"	A brief discussion with a neighbor
"How would you respond to that?"	Value Lines or Four Corners activity

2. Incorporate concluding questions that allow learners to connect the dots on the insights they obtained from the discussion
3. Facilitate a check for understanding, reflection, and reconciliation
4. Acknowledge controversial moments and warrant for a discussion about it after learning goals of the current discussion are achieved

Post-discussion

1. Provide affirmation to what the learners have demonstrated well
2. Incorporate assignment or activity related to the discussion (Marketing Communications: Web, University of Notre Dame, n.d.).

References

1. Engaging Discussion Formats to Enhance Student Learning • Teachers Institute. (2023, December 27). *Teachers Institute*. https://teachers.institute/instruction-in-higher-education/engaging-discussion-formats-student-learning/

2. Chi, M. T. H., Wylie, R., Mary Lou Fulton Teachers College, & Arizona State University. (2014). The ICAP Framework: Linking Cognitive engagement to active learning Outcomes. In *EDUCATIONAL PSYCHOLOGIST* (Vols. 49–4, pp. 219–243). https://doi.org/10.1080/00461520.2014.965823

3. Outside, S. (2025, October 21). Pushing your teaching down the learning pyramid. *Science Outside*. https://www.scienceoutside.org/post/pushing-your-teaching-down-the-learning-pyramid#:~:text=The%20Learning%20Pyramid%20developed%20by%20the%20National%20Training,90%25%20of%20what%20they%20learn%20through%20teaching%20others.

4. *Resources for educators | ICAP Center for Teaching and Learning*. (n.d.). https://icap.education.asu.edu/educator-resources

5. Heckmann, C. (2025, February 10). What is Socratic Dialogue — Definition, Examples & Uses. *StudioBinder*. https://www.studiobinder.com/blog/what-is-socratic-dialogue-definition/

6. Marketing Communications: Web, University of Notre Dame. (n.d.). *Facilitating effective discussions & dialogues*. Notre Dame Learning.

https://learning.nd.edu/resource-library/facilitating-effective-discussions-dialogues/