KNOWLEDGE NOW

Faculty Development Series

ACTIVE LEARNING

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LEARNING OBJECTIVES

By the end of this module, you will be able to:

- Define the elements and conceptual components of active learning
- Describe the *Cone of Learning* and classify teaching and learning components into elements
- Identify several active learning prompts to utilize in teaching

ACTIVE LEARNING

Active learning is defined as

- "The process of having students ==engage== in some activity that forces them to ==reflect== upon ideas and how they are using those ideas."

- "Requiring students to regularly assess their own degree of understanding and skill at handling concepts or problems in a particular discipline."

- "The attainment of knowledge by participating or contributing."

- "The process of keeping students mentally, and often physically, active in their learning through activities that involve them in ==gathering information, thinking and problem solving==."

    - *The Greenwood Dictionary of Education (2015).*

WHY

According to Irby (2010), "The fundamental pedagogy of medical education aims to have learners develop motivation and skill required to teach themselves, stimulated by clinical experiences…" Active learning promotes higher order thinking skills by having students:

- ==Analyze==
- ==Synthesize==
- ==Evaluate==

Students retain information longer through ==participation== and ==application== of acquired knowledge. Edgar Dale's model of the Cone of Learning (1969) suggests:

Cone of Learning
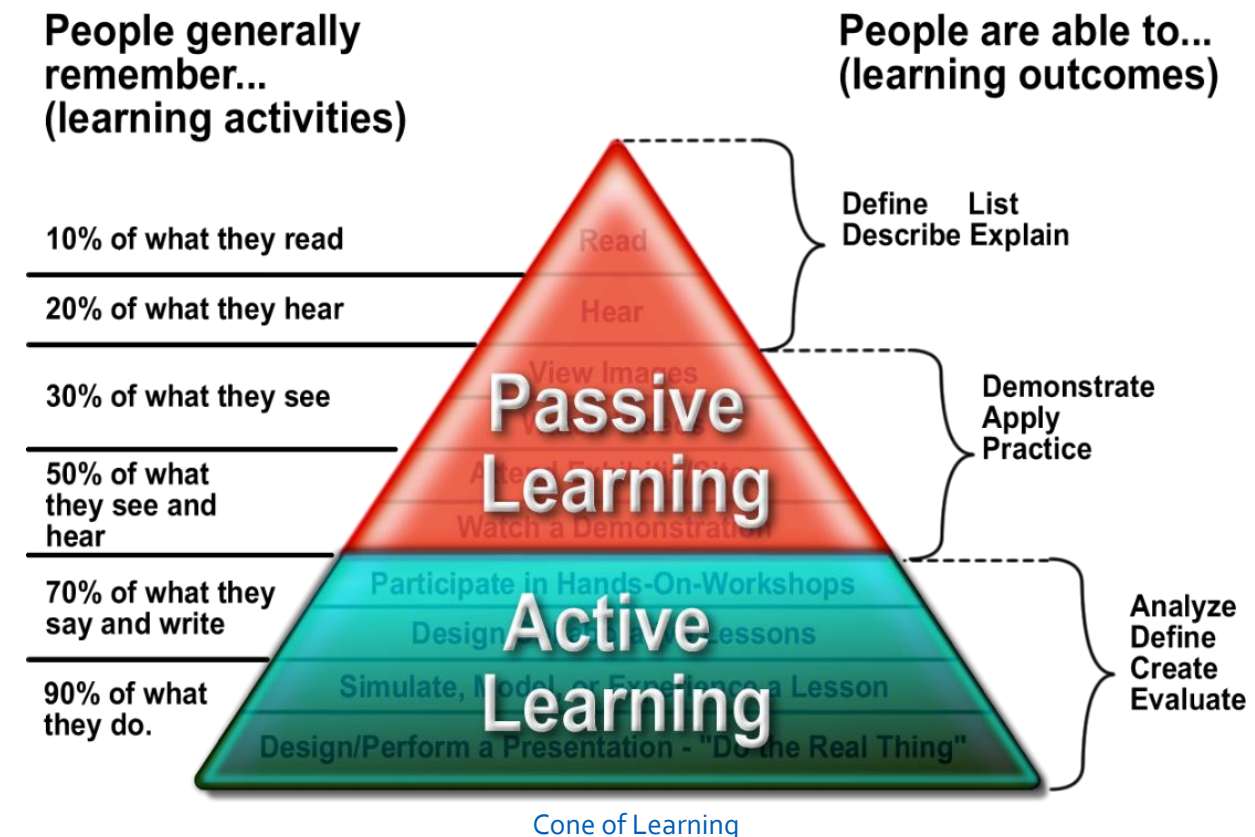
WHEN & HOW:

Active learning can be implemented by using:

- Clinical-case small group discussions,
- On-lecture case-based vignettes,
- Game-oriented reviews (Jeopardy, Crosswords), and
- In-class audience-response questions.

As the instructor, you set up the context to ==engage students== in manipulating knowledge in real time in front of peers and instructors.

Procedural Pause: Ask a good, thought-provoking question, followed by 30 seconds of silence and followed with two minutes during which students share their thoughts with each other before discussing the answer with the whole class.

Two-Questions: After presenting a chunk of information or content and tell students you don't intend to proceed until they've asked at least two (2) questions about the material. Jot those questions down and let the class take a crack at answering them.

Independent Formulation: Give students a single question to reflect on and write an answer to individually. Then have students pair up to share their responses and have a brief all class discussion a few minutes later.

Lecture Check: After a chunk of lecture material presentation, pose a Top Hat multiple choice ARS question to check for student understanding. Have the students discuss the question among themselves and give them 60-seconds to individually click in a response.

Leaving with a Question: the instructor can pose a question or set of problems that will begin the next class session. Student can work on the questions and come back to the next lecture prepared to give responses.

Adapted from: UCDenver Medical Program (12.2015)

Resources for Active Learning in Medical Education:

Active Learning in Medical Education: Strategies for Beginning Implementation (Graffam, B, 2009):

Evidence-based Practice for Medical Students in a Family Medicine Clerkship: Collaborative, Active Learning for Clinical Decision Skills (Heister, T., Davis, F., Brewer, R., Kudrimoti, A., Kuperstein, J., Levy, S., 2013):

Lecture Halls Without Lectures – A proposal for Medical Education (Prober, C.G., & Heath, C. 2012).

Using Active Learning Strategies to Shift Student Attitudes and Behaviours about Learning and Teaching in a Research Intensive Educational Context (White, P.J., Larson, I., Styles, K., Yuriev, E., Evans, D.R., Short, J.L., Rangachari, P.K., Malone, D.T., Davie, B., Naidu, S., Eise, N., 2015).

Developing Technology-Enhanced Active Learning for Medical Education: Challenges, Solutions, and Future Directions (McCoy, L., Pettit, R.K., Lewis, J.H., Bennett, T., Carrasco, N., Brysacz, S., Makin, I.R.S., Hutman, R., Schwartz, F.N., 2015):

Improved Learning in a Large-Enrollment Physics Class (Deslauriers, L., Schelew, E., Wieman, C., 2011).

Increased Course Structure Improves Performance in Introductory Biology (Freeman, S., Haak, D., Wendorth, M.P., 2011).

Resources for Active Learning:

Using Active Learning Instructional Strategies to Create Excitement and Enhance Learning (Eison, J., 2010):

University of Minnesota Center for Educational Innovation, What is Active Learning? (2015):

Cornell University Center for Teaching Excellence, Using Effective Questions (2015):

Large-scale Comparison of Science Teaching Methods Sends Clear Message (Wieman, C.E,., 2014).

Active Learning Increases Student Performance in Science, Engineering, and Mathematics (Freeman, S., Eddy, S.L., McDonough, M., Smith, M.K., Okoroafor, N., Jordt, H., Wenderoth, M.P., 2014).

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For more information or ideas related to Active Learning, please visit the Office of Educational Improvement's Webpage

http://www.mcw.edu/Medical-School/Faculty/Office-of-Educational-Improvement/Faculty-Development.htm

Questions, comments or feedback should be

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