TEN STRATEGIES FOR IMPROVING RETENTION AND RETRIEVAL OF LEARNING

I. Focus attention

- Introduce lecture or laboratory with short outline or summary
- Describe the gap in knowledge/understanding that you are trying to fill
- Increase curiosity by starting with a controversy, challenge, case, example (the “hook” or “lead”)
- Use an image, video, etc to capture attention
- Start with a personal story or struggle to personalize and capture attention
- Use humor, but ideally the concept to be understood should be the focus of the joke

II. Promote practice at retrieval

- Ask questions periodically to check understanding
- Ask why students chose their answer
- Return to key concepts at several points in the lecture or course
- Relate material to previously covered concepts, previous lectures or courses
- Point out connections between concepts and other materials, applications
- Provide cues for recall, with examples, context, or mnemonics
- Space out quizzes, tests for optimal long term retention
- Send email “quizzes” and ask for the answer at the next class

III. Require learners to take information presented in one format and re-represent it in another format

- Consider providing skeletal outlines or diagrams of the lecture for students to fill in on their own at times
- Ask students to rephrase a concept or to explain it to each other
- Create tables or charts for students to fill in – to categorize or make contrasts between key concepts
- Ask students to predict an outcome or diagnosis
- Ask students to write a test question about what they perceive as an important concept
- Ask students to compare or contrast concepts
- Ask students to think of a real world application of a concept
- Consider role playing scenarios to probe understanding
IV. Vary conditions under which learning takes place

- Change the format of class time periodically
- Use different methods during laboratory times
- Use computer based instructional methods or for assignments and “field trips”
- Point out relevant clinical cases in the hospital if possible

V. Recognize underlying assumptions and prior knowledge and experience (“right” or “wrong”)

- Use pre-surveys or pre-tests
- Ask for predictions or “guessing” to learn about prior assumptions
- Ask students to make lists regarding an upcoming topic

VI. What students recall soon after learning influences what they learn later

- Provide self-assessment quizzes
- Ask for a one-sentence or one-minute summary of a concept
- Ask about the key concepts from the previous lecture material at the beginning of the next class
- Provide a brief summary of key points at the end of class (or create with students)

VII. Remember less is more for long term retention and transfer

- Reassess your core goals for the class
- Have a clear plan for each lecture, lab period, etc.
- Slow down during lecture for better processing
- Use strategic enthusiasm on key points
- Allow yourself time to go back to key concepts

VIII. Create “doing” activities (ideally to do at midpoint of lecture)

- Case exercises
- Dissection
- Writing exercises
- Charts or diagrams to fill in
- Demonstration or debates
IX. Integrate material with prior experience, future context

- Learn what is taught in prerequisite courses
- Provide examples of applications (cases, surgical procedures, research investigations, public health problems, herd problems)
- Use analogies and metaphors
- Use selected extreme examples to make a point

X. Promote self-assessment of knowledge learned

- Self-quizzes
- Study questions
- Computer based assignments
- Other classroom assessment techniques

References:


Halpern D, Hakel MD et al. Applying the science of learning to the university and beyond. Teaching for long term retention and transfer. *Change* July/August 2003, p. 36-41.


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