
Student Success \ Learning and Memory

KAVEH FARROKH (PH.D.)

Learning & Recall: Chunking & Organizing

When there is a lot of information to learn from your notes and readings, it is recommended that you find ways of organizing your information.

Improve learning and recall of information by chunking and organizing.

CHUNKING

- Breaking up the bigger part(s) of information or “chopping it up” into smaller and more manageable parts or units.
- Result: easier to place or “record” into your memory.

ORGANIZING

- Take the more manageable parts and organize these in a meaningful and logical way (Hint: in a way that makes sense and helps with your recall in exams).
- Another way of looking at organizing is “grouping” the information.
- Look for “patterns”. Is there a consistency (i.e. similarities, themes, etc.)?

Student Success \ Math & Physics and Biology

KAVEH FARROKH (PH.D.)

VOCABULARY SKILLS

Knowledge of Greek & Latin roots of words:

- Greatly reduce study time required for understanding terminology.

Mnemonic techniques:

- These can help in recall of terms and terminology.

CONCEPTUAL UNDERSTANDING

Experts:

- Work to understand concepts – helps in learning of terminology and definitions.
- Work to see the bigger picture (literally): especially in diagrams or illustrations.

Novices:

- Try to memorize without seeing the big picture.

REVIEW STRATEGIES FOR TEST- PREPARATION

Experts:

- Engage in routine (timed) short quizzes to test their understanding and recall.
- Use flash cards.
- Draw mind maps or diagrams.
- Focus on identifying weak points of their knowledge and work on strengthening them.

Student Success \ Math & Physics and Biology

KAVEH FARROKH (PH.D.)

Math Basic Skills: Experts vs. Novices

BASIC SKILLS (I): NUMBER FACTS

Number Facts: frequently used sums, differences, and products you must know.

Experts:

- Are faster at retrieving these.
- Are more automated.

Number sense: making numbers and number systems meaningful.

- Needed for good problem solving strategies.

BASIC SKILLS (II): ALGORITHMS

Algorithms: sequence of steps, that if performed correctly, will achieve desired outcome with 100% accuracy.

Experts:

- Are faster at retrieving these.
- Are more automated.

Novices:

- Have more “bugs” in their procedures.

Linear algebra:

- Many steps composed into automatic algorithm.
- Experts are faster and more accurate with procedures.