



Learning vs. Retention: Implications for Educators

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No Disclosures

Objectives

By the end of the lecture, the audience will be able to:

- define learning and retention.
- differentiate between rote and elaborative rehearsal.
- apply the principles of Primacy-Recency to his/her teaching episode.

Primacy-Recency Effect

Remember best = 1st part
Remember 2nd best = Last part
Remember least = Middle part

Sense and Meaning

To retain information, it has to make sense and have meaning.

Elaborative Rehearsal is the KEY

Helps us to come up with new ideas, solutions, and concepts.

Primacy-Recency Effect

1st items in working memory – reach functional capacity



Primacy-Recency Effect

Later info exceeds capacity and is lost



Primacy-Recency Effect

At end of learning episode, items in learning memory are sorted or chunked

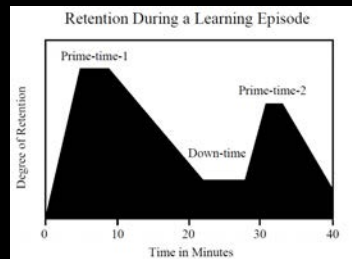


Primacy-Recency Effect

Additional processing of arriving final items

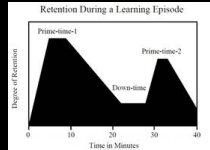


Primacy-Recency Effect



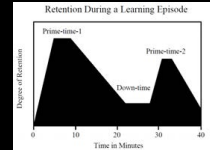
Primacy-Recency Effect

New Information should be taught first



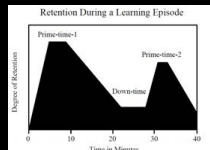
Primacy-Recency Effect

Practice or review during down-time



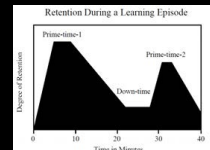
Primacy-Recency Effect

Closure at Prime-Time-2



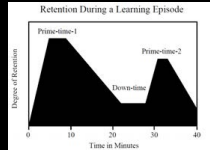
Primacy-Recency Effect

Closure: For the next 30 seconds try to recall the important findings of a lateral patellar dislocation. I'll ask you how those findings relate to the mechanism of injury.



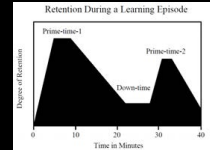
Primacy-Recency Effect

Closure does not necessarily mean review.

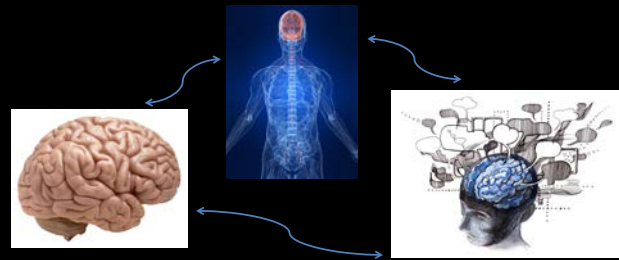


Prime Time Misused

- Making announcements
- Asking questions where wrong answers may be given
- Review of old material
- Asking people to introduce themselves



Learning



Learning

206-555-1234

23-44-67

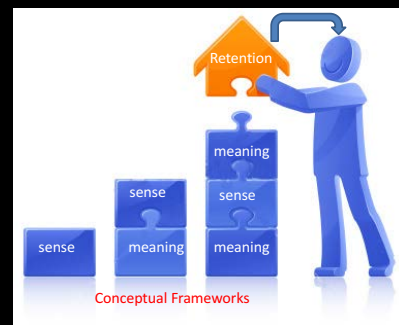
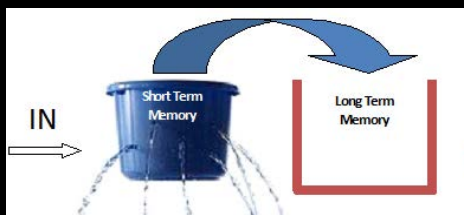
The customer's name is Mary Smith

Learning

Differential Diagnosis for an MRI finding

Causes of Nephrocalcinosis

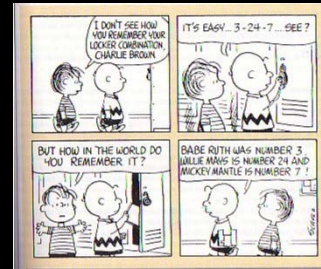
Muscles that make up the quadriceps mechanism



Retention: Factors



Retention factor: Rehearsal



Rehearsal

Repeat again what you hear; for by often hearing and saying the same things, what you have learned comes complete into your memory

- from the Dialectics

Rote Rehearsal

Rote Rehearsal = store information EXACTLY as it is entered into working memory

- Multiplication tables
- Telephone numbers
- Procedural steps

Elaborative Rehearsal

Elaborative Rehearsal = Associate new learning with prior knowledge via relationships

More complex process that assigns meaning to the new information

Rote and Elaborative Rehearsal

A student uses rote rehearsal to memorize the various tendons that attach to the ischial tuberosity. She uses elaborative rehearsal to correctly interpret a hamstring avulsion injury.

Rote and Elaborative Rehearsal

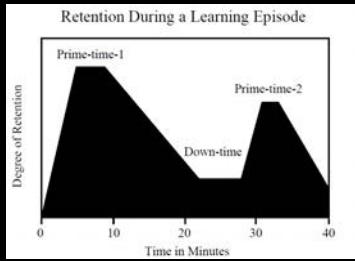
If a student receive insufficient training in elaborative rehearsal, he will resort to rote rehearsal for nearly all processing.

Rote and Elaborative Rehearsal

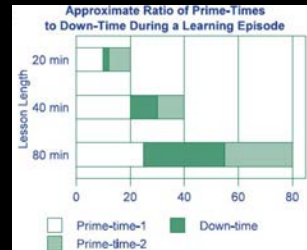
DDx for child with limp.
Foot, ankle, knee, hip, back, etc.

Does that help a child who comes into the ER with multiple bruises and refusal to bear weight.

Primacy-Recency Effect



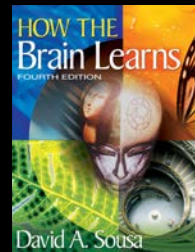
Retention vs. Teaching Episode Length



Retention vs. Teaching Episode Length

Episode Time	Prime-Times		Down-Time	
	Total Number of Minutes	Percentage of Total Time	Number of Minutes	Percentage of Total Time
20 minutes	18	90	2	10
40 minutes	30	75	10	25
80 minutes	50	62	30	38

How The Brain Learns





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Thank You
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References

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