



New Teacher Academy

Session 2

Far West GREAT Center

November 17, 2007

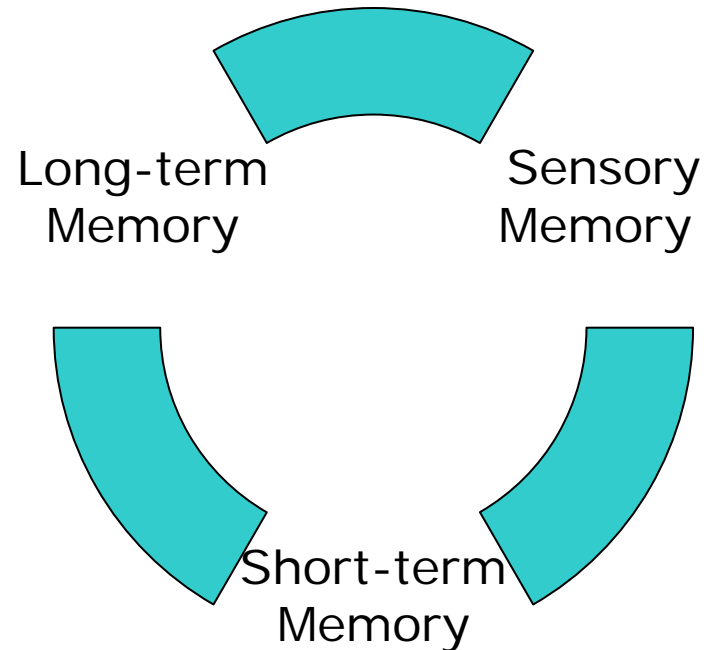
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3 Types of Memory

- Sensory memory: information we receive through our senses. This memory is very brief lasting only a few seconds
- Short -Term: we can remember approximately 5 to 9 (7 ± 2) bits of information for a short time
- Long-Term: relatively permanent and practically unlimited storage capacity



Long-term Memory

- Consists of information you have:
 - Heard often
 - Seen often
 - Used often
 - Deemed necessary

Cornerstone: Building on Your Best by Robert M. Sherfield, Rhonda J. Montgomery, Patricia G. Moody.
Pearson/Prentice Hall, 2005



Forgetting Curve

- There are many reasons we forget things
- One reason is that information that is not used for an extended period of time decays or fades away over time



Forgetting Curve

- The forgetting curve illustrates the decline of memory retention in time.
- A typical graph of the forgetting curve shows that humans tend to halve their memory of newly learned knowledge in a matter of days or weeks unless they consciously review the learned material.

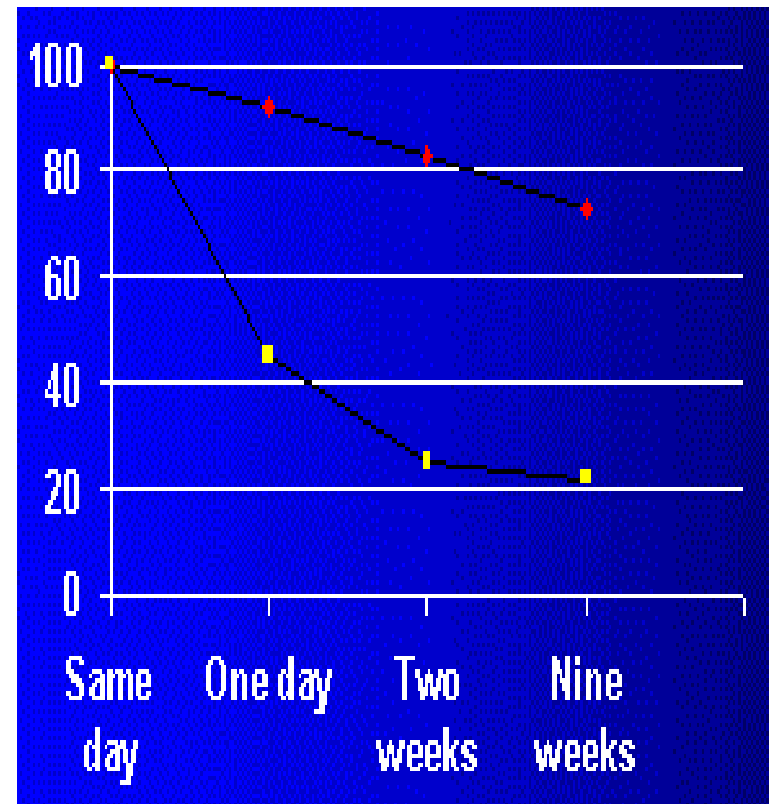
Forgetting Curve

- Amount you are likely to recall if you do review

vs.

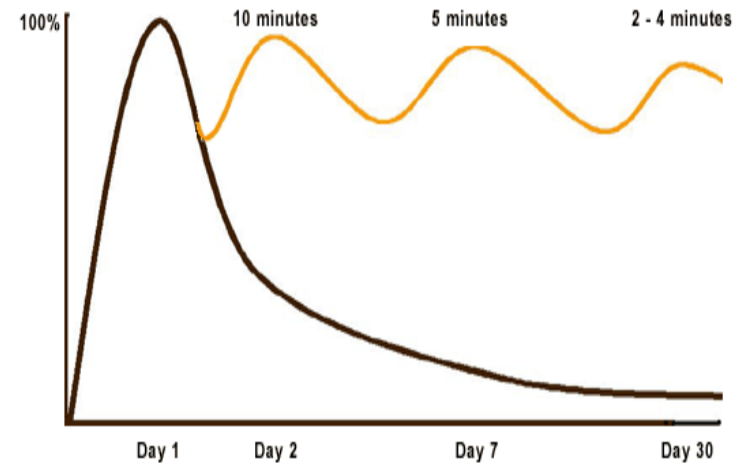
- Amount you are likely to recall if you do not review

<http://www.ucc.vt.edu/lync h/SSForgetting.htm>



Forgetting: 1 hour lecture

- On Day 1, you have heard 100% of the information.
- By Day 2, if you have done nothing with the information you learned, didn't think about it again, read it again, etc. you will have lost 50%-80% of what you learned.



Forgetting: 1 hour lecture

- Here's the formula for remembering material: **Within 24 hours of getting the information - spend 10 minutes reviewing and you will raise the curve almost to 100% again.**
- A week later (Day 7), it only takes 5 minutes to "reactivate" the same material, and again raise the curve.
- By Day 30, your brain will only need 2-4 minutes to give you the feedback, "Yes, I know that..."

University of Waterloo
Counseling Services
<http://www.adm.uwaterloo.ca/infocs/study/curve.html>

Forgetting Curve

- **Reviewing notes after class each day, or at least before going to bed, will help recall.**
- **At the end of nine weeks, those who reviewed their notes within a day recalled about 75% of the information.**
- **Those who did not review their notes were unable to recall even 50% of the information after one day and only a little more than 20% of the information after nine weeks.**

<http://www.ucc.vt.edu/lynch/SSForgetting.htm>



Increasing Memory Power

- With effort and memory techniques, you can file and retrieve information in long-term memory
 - Rehearsal
 - Practice
 - Concentration
 - Visualization



Increasing Memory Power

- A related concept is the **strength of memory** that refers to the durability of memory in the brain. The stronger the memory, the longer we can remember it.
- Strategies that engage the brain strengthen memory.

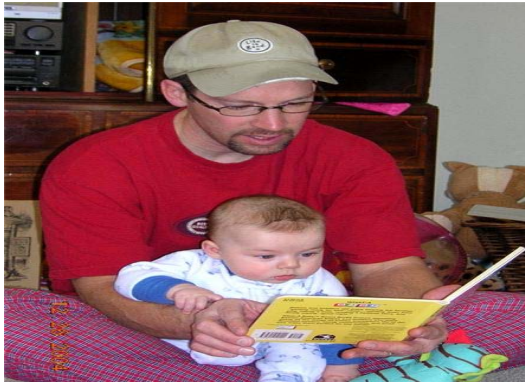


20 Professional Learning Strategies

“Sit and Get” Won't Grow Dendrites by Marcia L. Tate

- Brainstorming & discussion
- Drawing and artwork
- Field trips
- Games
- Graphic organizers
- Humor & celebration
- Manipulatives & models
- Metaphors, analogies, & similes
- Mnemonic devices
- Movement
- Project and problem-based instruction
- Reciprocal teaching, cooperative learning, & peer coaching
- Role-plays, drama, pantomimes, & charades
- Storytelling
- Technology
- Visualization
- Visuals
- Work study & action research
- Writing & reflection

Story Time



- Metacognition
- Think Aloud
- Pre – During – Post Questions
- Graphic Organizers
- Bloom's Taxonomy

Metacognition:

"to think about your own thinking"

- to be aware of and monitor your learning processes
- ***self-assessment***
the ability to assess your own thinking and understanding
- ***self-management***
the ability to manage your own further cognitive development





Think Aloud

- **Modeling by the teacher**—The teacher models his/her comprehension strategies while reading sample text
- The teacher verbalizes the thought process he or she is using to gather meaning from the text

Think Aloud

1. Read a passage aloud to the learners and “give voice” to how you process the information
2. Talk about what
 - You are thinking
 - Your predictions
 - The images you see
 - The questions you have
 - How the reading fits with what you know
3. When you run into problems, express your confusion and talk through your thinking as you solve the problem



Think Aloud Strategies

- Stopping to reread or restate a difficult section
- Summarizing long sentences and putting them in your own words
- Looking back in the text to locate the person or thing that a pronoun refers to
- Identifying important or not-so-important information
- Using various strategies to identify or determine the meaning of an unknown word
- Relating the information to your “prior knowledge”



Graphic Organizers

- **“Power Pictures”** that paint important pictures on the brain
- Diagrams or charts that represent concepts and the relationship of ideas and information
- They often illustrate the organization and structure of text

Links for Graphic Organizers

Education Place: Graphic Organizers
<http://www.eduplace.com/graphicorganizer/index.html>

Ed Helper
http://www.edhelper.com/teachers/graphic_organizers.htm

Links for Graphic Organizers

Graphic Organizers

<http://www.writedesignonline.com/organizers/index.html>

Region 15 Graphic Organizers

<http://www.region15.org/curriculum/graphicorg.html>



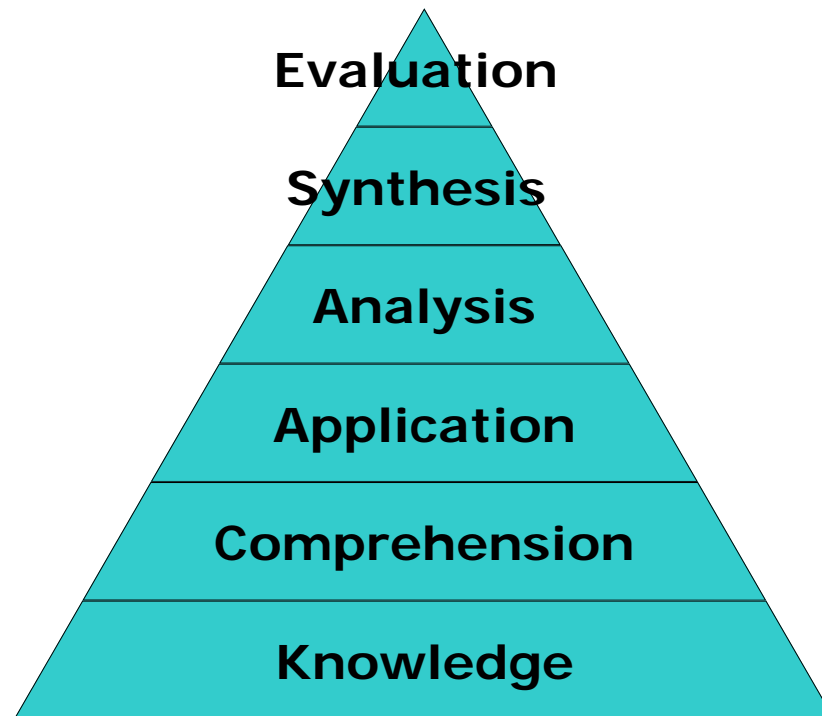
Pre, During, Post, Questions

1. **Pre**: Identify "what you know" and "what you don't know" and what you predict
2. **During**: Talk about thoughts and images; predictions and conclusions; self-regulate and self-evaluate
4. **Post**: What did I learn and what do I want to remember; Bloom's Taxonomy- Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation questions

Bloom's Taxonomy

- Benjamin Bloom developed his “Taxonomy of Learning Domains” in the mid-1950s. His hierarchy of skills is key to developing authentic objectives for learning.
- These are the six levels in ascending order:
 - **Knowledge**—to observe and recall information
 - **Comprehension**—to understand knowledge
 - **Application**—to use knowledge
 - **Analysis**—to interpret and value knowledge
 - **Synthesis**—to integrate, own, and combine ideas
 - **Evaluation**—to assess, verify, and make choices based on information and knowledge

Bloom's Taxonomy



Links: Bloom's Taxonomy

○ University of Victoria

<http://www.coun.uvic.ca/learn/program/hndouts/bloom.html>

Valdosta State University

<http://chiron.valdosta.edu/whuitt/col/cogsys/bloom.html>

Links: Bloom's Taxonomy

University of Washington

<http://faculty.washington.edu/krumme/guides/bloom1.html>

Teachers pages

<http://www.teachers.ash.org.au/researchskills/dalton.htm>

<http://nerds.unl.edu/pages/presenter/sec/articles/blooms.html>