Investigating Memory Issues

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Our mission:
We equip congregations and schools to glorify God through purposeful, innovative inclusion of persons with varied abilities.
Meet 3 new people

- Name
- School
- Role
Episodic Memory
ND Framework
More on Memory

- **A definition:** The ability to record information, juggle several pieces of information at once, store it, and then retrieve it at a later time.

- **Examples:**
  - Retaining the beginning of a story while reading to the end
  - Incorporating new information to what is already known

Visual: Desktop
3 Types of Memory

- Short-Term – the inbox on a desktop
- Active Working Memory – the desktop
- Long Term Memory – the file cabinet
Activity

- In a moment, you will see a list of words
- You must remember them
- After the words are withdrawn, write the words (in any spot available to you)
- Do not begin writing until the words are removed
Digest
Hawking
Launch
Community
Frock
Pursuit
Vandalism
• Write the words you remember
Digest
Hawking
Launch
Community
Frock
Pursuit
Vandalism
STM

- STM holds between _______ bits of information

- Information (stimuli) comes in through STM – something must be done with the information or it will be gone
Job of STM

- Three main functions of STM:
  1. **Saliency Determination** – quickly determining whether or not new information is worth storing
  2. **Recoding** – transforming information to fit into STM by condensing or shortening
  3. **Depth and Detail of Processing** – capturing important, newly introduced at the level or depth needed for retention
Strategies for STM

**Maintenance rehearsal**
- Repeat the information in your mind or utilize subvocalization (remembering a phone number) (create a song or story)

**Elaborative rehearsal**
- Connect information with something you already know (remembering a name)

**Visual rehearsal**
- Visualize
- Make a list, picture, writing
Classroom application

**Classroom:**
1. Monitor the amount and rate of information given
2. Allow time to rehearse information
3. Allow questions
4. Ask students to verbally repeat information
5. Chunk information
6. Increase automaticity
Activity

- I will orally lead you through a problem to solve
- You will need to solve the problem without writing anything down
- Put your writing utensil to rest
Active Working Memory

- This is the desktop
- Information exists here while you use it
AWM

- Mentally suspending information while using or manipulating it

- Handling simultaneous task components

- Short-Term to Long-Term Memory Linkage – holding incoming information in STM while activating prior knowledge or skills stored in LTM
Strategies for AWM

• **Chunking:**
  194318672001140012071963
  1943 1867 2001 1400 1207 1963

  o Make **Connections** to prior knowledge – beginning of story to the end

  o **Overlearning or automaticity** (driving a car, tying a shoe)
    Practice – typical learners require 40 exposures for automaticity
    students with mild cognitive impairment may require 200 exposures

• **Limit amount** of new information and provide processing time
Classroom application

- If determined the information is to be retained, one’s AWM will be engaged
- Limit the amount of new information
- Allow sufficient opportunity to process and manipulate the information (Sufficient Time and Practice)
- A purpose of homework: opportunities for AWM to get information to LTM
Which of the Following Are True for You?

1. I can remember how to do certain activities after very little practice (e.g., dance steps, a new exercise routine, riding a bike).

2. I can remember people and places in which I last saw them when I meet them again, even if I have not seen them in a long time.

3. When I see a movie, I associate it with other movies about the same topic, other movies with the same actors, other movies by the same director, and so forth.

4. I can remember the steps involved in setting the timer on my DVD player.

5. I have a sense of where the elevator is in an office building, even though I have never been in the building before.

6. I can name the title of a song after hearing two bars of the melody.

7. I am good at predicting how the plot of a movie or novel will unfold before it is fully revealed.

8. I look for items in a supermarket by going to the section where I expect to find them.
LTM – Long Term Memory

• Permanent portion of Memory

• Two components: Consolidation and Access

• Consolidation: Permanently storing information, including knowledge, experiences and skills

• Access: Retrieving information, including knowledge, experiences and skills
LTM consolidation

- Paired Association Filing – linking and storing two related data bits
- Procedure Filing – Storing new skills and processes
- Rule, Pattern, and Schema Filing – filing recurring sets of information as they fit with rules, common patterns, or systems of organization
- Category Filing – classifying information in meaningful groupings
LTM - access

- **Association** – remembering on half of a pair after seeing or hearing the other half
- **Pattern Recognition and Method Transfer** – Detecting a familiar pattern and transferring the methods that have worked with that pattern in the past (rules, schema)
- **Recall** – recovering information or skills with only minimal cueing
- **Category Storage**
- **Procedure Storage** – steps, routine, processes
Accessing information

Strategies for Accessing:
• Associations – remembering one half of a pair after seeing or hearing the other half
• Pattern recognition – detecting a familiar pattern and transferring the methods that have worked with that pattern in the past
• Recall – recovering information or skills with only minimal cueing
• Category/Concept – classifying information in meaningful groupings
• Procedural Storage – storing new skills and processes
Memory

Stimuli → STM → AWM → CONSOL. → ACCESS → Output
Activity - Letters

DNAN  BCT  VF  BIU  SA

DNA  NBC  TV  FBI  USA
Meet 3 new people

- Name
- School
- Role
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