How to improve your memory: Mnemonic Devices

Chapter 8
pp 255-259

Why do we need MEMORY?

- Memory is the diary that we all carry about with us.
  ~Oscar Wilde
- Memory is the primary and fundamental power, without which there could be no other intellectual operation.
  ~Samuel Johnson
- What if you couldn’t create new memories?
  Amnesia patient: Clive Wearing
- How do you use your memory everyday?
- “National Memory Championship” – “Memoriad”
  [http://www.youtube.com/watch?v=pyVxD1zE7H4](http://www.youtube.com/watch?v=pyVxD1zE7H4)

How can I improve my memory?

- Most popular answer: Mnemonic devices

Mnemonics

- Tricks and strategies to help memory!
  - Repetition
  - Chunking
  - First letter technique
  - Rhyming
  - Visualization
  - Keyword
  - Link
  - Method of Loci
  - Pegword

Learn the following list by ONLY reading; go through list as many times as possible

- Horse – Table
- Island – Hat
- Door – Note
- Bear – Apple
- Clock – Moon
- Building – Dog
- River – Table
- Road - Paper
- Basket – Cloud
- Ring – Ship
- Snow – Window
- Pencil – Hammer
- Bread – Car
- Meat – Envelope
- Box – Garden
- Book - Cup

Recall as many as possible

- Horse –
- Island –
- Door –
- Bear –
- Clock –
- Building –
- River –
- Road -
- Basket –
- Ring –
- Snow –
- Pencil –
- Bread –
- Meat –
- Box –
- Book –
Repetition technique

- Repetition: Forces you to pay attention
- Visual and verbal memory for material
- Spacing effect:
  - Distributed practice is best for delayed test
  - Massed practice ok for immediate test
- Why?
  - Time to consolidate info
  - Only concentrate for so long
  - Study under different conditions/settings

Chunking

- Short-term memory capacity limit:
  - Magic number 7 +/- 2
  - Memory span
- Remember: 7 0 4 8 6 4 2 3 2 1 8 9
- Or remember: 704 864 23 21 89
- Remember 7 +/- 2 CHUNKS
- Why helpful?
  - Increase capacity by grouping information
  - Gives meaning to random information

First-letter technique

- Acronym:
  - ROY G BIV: colors of the rainbow
  - HOMES: great lakes
  - PRICE: Injury
- Acrostic: first letter of each word of sentence is cue
  - Music notes: Every Good Boy Deserves Fun
  - 12 cranial nerves: OOO To Touch And Feel…
- Why helpful?
  - Letters act as cue
  - Chunking

Rhyming technique

- When did Columbus discover America?
  - “In fourteen hundred ninety-two, Columbus sailed the ocean blue”
- “i before e except after c, or when sounded like a, as in neighbor and weigh”
- “Thirty days has September, April, June, and November”
- ABC’s song (rhyming and chunking)
- Why helpful?

Dual-coding hypothesis

- Dual-coding:
  - 2 cues: verbal and visual
- Visualization:
  - Picture superiority effect
- Effective visualization:
  - Interaction
  - Vividness
  - Bizarreness
Learn the following list by creating a mental image of two items in vivid interaction

- Bird – Fruit
- Rain – Rock
- Dress – Money
- House – Mountain
- Cow – Flower
- Corn – Gate
- Roof – Nest
- Baby – Hair
- Ice – Train
- Fence – Letter
- Egg – Chair
- Book – Water
- Coat – Glass
- Candy – Sign
- Rabbit – Paint
- Hammer - Book

Recall

- Bird –
- Rain –
- Dress –
- House –
- Cow –
- Corn –
- Roof –
- Baby –
- Ice –
- Fence –
- Egg –
- Book –
- Coat –
- Candy –
- Rabbit –
- Hammer -

Answers

- Bird – Fruit
- Rain – Rock
- Dress – Money
- House – Mountain
- Cow – Flower
- Corn – Gate
- Roof – Nest
- Baby – Hair
- Ice – Train
- Fence – Letter
- Egg – Chair
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Keyword mnemonic

- Use to learn foreign language vocabulary
- Spanish example: Pato = Duck
- First step:
  - Concrete keyword that sounds like foreign word = Pot
- Second step:
  - Form visual image connecting keyword with meaning
  - Picture: Duck wearing a pot on its head
- Use for any vocabulary words
  - Try: “Skull”: To hide or sneak around for evil reasons”

Image–name mnemonic

- Use to remember name with face
  - Think of vivid word that sounds like name
  - Link word with person’s appearance

- Example
  - Rodney Flanery
  - Image: Football player with rod in his knee, so benched and wearing flannel to stay warm
- Create one for your own name!

Link mnemonic

- Chaining or Link system
  - First: form visual image for each item
  - Second: associate image with next image
  - Important to SEE associations

- Narrative technique
  - Form a story using items you want to remember

- Appropriate for serial learning
- Problem: if forget one item then next items may be inaccessible too
Method of Loci

- “In the first place”
- 1. Memorize familiar locations in natural order
- 2. Create visual image of word with each location
- 3. Recall: take a “mental walk”

Begin to write only after I have given the signal, “Go”.

Olin, DuPre, Main, Snyder, Library, Carlisle, Daniel, Milliken, Burwell

Apple
Piano
Hammer
Cake
Planet
Pizza
Kite
Bus
Butterfly
Scissors

Method of Loci: Campus Map

Method of Loci: Answers

- Apple
- Piano
- Hammer
- Cake
- Planet
- Pizza
- Kite
- Bus
- Butterfly
- Scissors

- Locations serve as a cue
- Helpful for serial learning
- Locations should be distinct
- Need strong association between location and item
- Problem: using same locations over again can lead to confusion

Peg-word technique

- First: use memorized concrete nouns
- Rhyming words with numbers helps to remember words
- Second: create visual image of target word with peg-word
- Similar to Loci: objects instead of locations
- Problem: limited # peg-words

Thought paper

- What tricks and strategies do you use to memorize information?

- You go to a party and meet lots of new people. You would like to be able to remember their face and name. How do you do it?
Thought paper continued…

- Why do these techniques work to improve memory? What do they share in common?

- Which of these techniques could you realistically use to help you study for exams?

- Why wouldn’t you use some of them?

Why mnemonics work

- Attention
  - Ensure encoding
- Repetition
- Retrieval cues
- Dual-coding cues
  - Verbal and visual representations
- Organization
  - “chunks”
- Notice relationships and differences
  - Use existing knowledge
- Elaboration
  - Think about meaning and make distinctive
- Generation
  - Your ideas makes it personal

Limitations of Mnemonics

- Time
- How to deal with abstract material?
- Learning vs. retention
- Creative ability
- Interference
- Doesn’t help memory in general
- Does not help understanding of material
- Need to practice mnemonics!