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## Recent articles written by Kenneth Wesson

The September 2011 issue of *Science and Children* was released last week with the Guest Editorial “**Minds, Maps and Models: Visualizing Science**” which I wrote. Hopefully, you and your colleagues will find it of interest. Below is the website for that Guest Editorial. <http://www.nsta.org/elementaryschool/>

### **Brain-Sight: Can touch allow us to “see” better than sight?**

Which of the following procedures do you think would produce the most accurate representation of an object: tracing the object; looking at the object while drawing it; or, with your eyes closed, touching and feeling the object and then drawing ... [READ MORE>>](#)

<http://brainworldmagazine.com/brain-sight-can-touch-allow-us-to-see-better-than-sight/>

### **Positive Teaching = Good Education**

“Students learn as much for a teacher as they do from a teacher.” —Linda Darling-Hammond, Stanford University A man in a black trench coat strolls up to the opened classroom doorway, glances in, turns and continues walking. All eyes shift ... [READ MORE>>](#)

<http://brainworldmagazine.com/positive-teaching-good-education/>

### **Learning and Memory: How do we remember and why do we often forget?**

June 27th, 2011 |

The advantage of a bad memory is that one enjoys several times the same good things for the very first time. —Friedrich Nietzsche MEMORY SITUATION #1: Immediately after your assistant has given you the number of an important client, you ... [READ MORE>>](#)

<http://brainworldmagazine.com/2011/06/learning-and-memory/>

(There were a few charts accompanying this article in the printed Journal that did not appear in the online version.)

### **30 Ways to Improve Your Memory**

Whether we are studying for Friday’s spelling test or a doctoral dissertation, there are a number of techniques that yield the best results.

June 15th, 2011 | Posted in [Health](#) | [Read More »](#)

<http://brainworldmagazine.com/2011/06/30-ways-to-improve-your-memory/>

### **Education for the Real World: Six great ideas for parents and teachers**

January 28th, 2011 | Posted in [Education](#) | [Read More »](#)

<http://brainworldmagazine.com/2011/01/education-for-the-real-world/>

### **The Magic of Human Language**

Prior to the 1990s, most information gathered about the human brain came largely by way of misfortune — brain-injured patients or disease.

December 27th, 2010 | Posted in [Science](#) | [Read More »](#)

<http://brainworldmagazine.com/2010/12/the-magic-of-human-language/>

### **Neuroplasticity: Experience and your brain**

August 26th, 2010 | Posted in [Science](#) | [Read More »](#)

<http://brainworldmagazine.com/2010/08/neuroplasticity/>

### **Summertime and the learning should be easy: Tips for parents and educators on how to make summer a productive period**

July 25th, 2010 | Posted in [Education](#) | [Read More »](#)

<http://brainworldmagazine.com/2010/07/summertime-and-the-learning-should-be-easy/>

### **Building a Better Brain**

“PERC3S”: BRAIN-CONSIDERATE STRATEGIES FOR THE HOME AND SCHOOL

<http://brainworldmagazine.com/2010/02/building-a-better-brain/>

Please feel free to share these resources with your colleagues.

Best regards,

Kenneth Wesson

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Below are the charts that are referenced in the article "[Learning and Memory: How do we remember and why do we often forget?](#)" These charts appear in the print version, but not in the online version of the article.

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## Useful Memory Terminology for Parents and Educators

- \* **Tip-of-the-tongue phenomenon:** When a person cannot recall the exact memory item, but shows a slight degree of recall for one or more of its characteristics (“...I think the name begins with the letter ....”)
- \* **Retrieval Cues** – A clue or “prompt” that activates the retrieval of a particular piece of stored information from long-term memory
- \* Two types of retrieval cues:
- \* Recognition - when a specific cue (face or name) matches information already in permanent memory
- \* Recall is the active process of searching one’s memory in order reproduce information
- \* **Relearning** – The situation where learning material a second time will typically will take less time and effort than initial learning.
- \* **Primacy effect** – remembering information that appeared at the beginning of a lecture, an experience or a list
- \* **Recency Effect** – remembering facts or information at the end of an experience or list. Thus, talent contestants prefer to be the first or last performer on stage.
- \* **Proactive interference** - old information interferes with recall of new information
- \* “The President of the United States is Bill \_\_\_\_\_.”
- \* “I love you, \_\_\_\_\_” (and mistakenly insert a *former* lover’s name)
- \* **Retroactive interference** - when new information interferes with the retrieval of stored memory (“I live at \_\_\_\_\_.” (and your old address comes to mind, but not the new).
- \* **Decay theory:** specific memories and details fade with time.
- \* **Motivated forgetting** (repression) involves the deliberate loss of painful memories (protective memory loss)
- \* **Retrieval failures** occur when information known to be stored in long-term memory cannot be brought to consciousness

## Visualization and Memory Lists

Review the following lists for 60 seconds each, then write down as many words as you can recall from each list.

### *List A*

design  
credit  
such  
pleasure  
cannot  
within  
blank  
quick  
task  
settle  
into  
their

### *List B*

hat  
sunshine  
boat  
school  
daisy  
teacher  
water  
stairs  
duck  
fish  
baseball  
teacher

Words that can be visualized are easier to recall.

### **Would the following events interfere with your recall?**

What would happen to your recall after

1. counting backwards by three beginning with the number 200
2. studying information from five other unrelated subjects
3. writing a 500-word essay
4. a break of 10 minutes
  - a. one day
  - b. one week
  - c. one semester

## **A Dictionary for Types of Memory**

When someone tells you, "I think I'm losing my memory!" You might want to ask them, "*Which* memory?" We have several different memory types and pathways back to our memories.

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**Autobiographical** memories are the specific memories about our personal lives that make us the unique individuals who we are.

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**Conditional** memories represent our knowledge of when and where to deploy a skill to solve a problem or to produce *additional* knowledge (a "cognitive toolbox").

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**Conceptual** memory is knowing what something is, how it works, *etc.*, which can be knowledge gained by learning (apprenticeship or mentorship) as well as through the analytical process sense-making.

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**Echoic** memories are auditory memories (of songs, voices and sounds).

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**Explicit** (declarative) memories are working (short-term) memories, which can be further divided into semantic (isolated words, facts, symbols, *etc.*) memories and episodic memories, which are memories of locations, events, circumstances and space. These particular memory "episodes" in life would include memorable moments (e.g., a 21st birthday celebration in Las Vegas) where the details of the memory are embedded in the broader experience.

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**Declarative** memories are memories that can be articulated easily (dates, historical facts, telephone numbers, *etc.*) including what we can recall in our mind as imagery. They are easily established and the specific information easily forgotten, which leads to frustrations in the classroom.

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**Flashbulb** memories are recollections of where you were when a historically or personally significant event took place (the explosion of the Challenger Space Shuttle, the assassination of JFK, the tearing down of the Berlin wall, the attack on the World Trade Center or your wedding day.)

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**Iconic** memories are visual memories (pictures). Since human vision preceded writing, visualization is a powerful learning aid.

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**Implicit** (non-declarative) memories include what we can "do" (typewriting, bicycle riding, tennis, *etc.*), which comprises **procedural memories** -- physical skills that require repetitive practice to learn them, such as the ability to dance, drive a car, tie one's shoelaces or necktie. It

constitutes the body's sensory-motor library of skills we have. **Motor memory** is the body of learned motoric habits (playing basketball) where "the mind is in the muscle." They are all described as non-declarative because we cannot say or "declare" how they are accomplished. How would you verbally *explain* riding a bicycle or dancing?

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**Permanent** (long-term) memory can be sub-divided into explicit and implicit memories.

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**Reflective** memories or instinctive memories (e.g., knee-jerk response) are stored in the parietal lobes and the cerebellum. These memories can neither be trained for nor learned, since they occur naturally.

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**Sensory** memory is the brief representation of a stimulus while it is being processed in one of the numerous sensory systems, most commonly with an origin in tastes, smells, touch/textures, sights or sounds.

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**Source** memory is knowing *when and where* a particular fact or aspect of knowledge was originally learned and how you came about knowing it. (When and where did you learn the significance of the date "1776?")

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**Working** (short-term) memory has a limited capacity of 7 items and lasts approximately 30 seconds or less in duration.