The Cognitive perspective = learning and memory

Behaviorist vs. Cognitivist:
- Cognitivist knowledge leads to behavior; Behaviorist behavior is knowledge
- Reinforcement supports learning in both theories

While cognitive processes can’t be observed, mental processes do exist, they can be studied scientifically, and people are active participants in their own cognition (p. 234)

Because of the recognition of the individual agency within the learning process, unifying theories are hard to come by.

The Brain:
- We know the brain changes in response to learning (hippocampus gets larger, neurons communicate differently, some aspects are developmental)
- Terms: Cognitive view of learning; Domain-specific knowledge; general knowledge

Memory → input to recognition
- Working memory; information processing; sensory memory; perception; bottom-up processing; Gestalt; Prototype; Attention; Automaticity; Short-term memory; central executive; phonological loop; visuospatial sketchpad; cognitive load; intrinsic cognitive load; extraneous cognitive load; germane cognitive load; maintenance rehearsal; elaborative rehearsal; chunking; decay
- Forgetting: from time decay or interference
- Lots of terms related to memory: long-term memory; declarative knowledge; self-regulatory knowledge; explicit memory; implicit memory; semantic memory; propositional network; images; concept; defining attribute; prototype; exemplar; schemas; story grammar; episodic memory; flashbulb memories; procedural memory; script; productions; priming; elaboration; organization; context; levels of processing theory; spreading activation; retrieval; reconstruction; interference.
- Types of knowledge
  - Declarative: the thing you know
  - Procedural: the process you know how to do
  - Self-regulatory: knowing when and why to utilize the declarative and procedural knowledge

Ways to develop both declarative and procedural knowledge
- Procedural knowledge development → cognitive, associative, autonomous skills
- Words: mnemonics; loci method; acronym; chain mnemonics; keyword method; rote memorization; serial-position effect; part
Personal Reflection

In this view, it seems to me, memory and knowledge are tightly intertwined, which I think resonates with most people. I used to say to my students “know it like your phone number,” as in, be able to access the declarative or procedural knowledge with the same rapidity as someone spits out his or her phone number. That being said, with the advent of cell phones, people actually don’t know their phone numbers anymore. Going back to the decay of long-term memory, are new technologies affording us more room in our brains to allow us to remember more complex procedural and declarative knowledge or is it more of a constraint in terms of rapidly increasing the decay—the muscle that atrophies with disuse? Taking this together with the Dede article, technologies certainly can strum the notes that induce learning in the ways that capitalize on the observations of cognitivists. By inducing the brain’s cognitive processes to maximize learning by utilizing various technologies, I wonder what aspects of memory we might be sacrificing, as in my cell phone example. Additionally, I also am curious about the brain circuitry and how it responds to various technologies and how that interplays with what we can observe is learned.