



# MCG MEDICAL EDUCATOR MINUTE

#11

## Understanding How We Learn

### BACKGROUND

Understanding basic learning theories provides teachers with a framework for creating an optimal learning environment.

### What influences learning?

- Environment
- Thoughts
- Emotions
- Prior Experiences

### Learning Theories Source: <http://thepeakperformancecenter.com/educational-learning/learning/theories/>

Behaviorism – learning occurs as behaviors are associated with outcomes (i.e., rewards increase behavior, punishment decreases behavior, cues prompt action, contingencies link together complex patterns)

Cognitivism – learning occurs as concepts are linked, clarified, expanded (information processing)

Constructivism – learning occurs as learner selects and transforms information via hypotheses, meaning making, extrapolation as new information is built upon former experiences, assumptions

### WANT MORE?

#### Adult Learning Principles (Knowles)

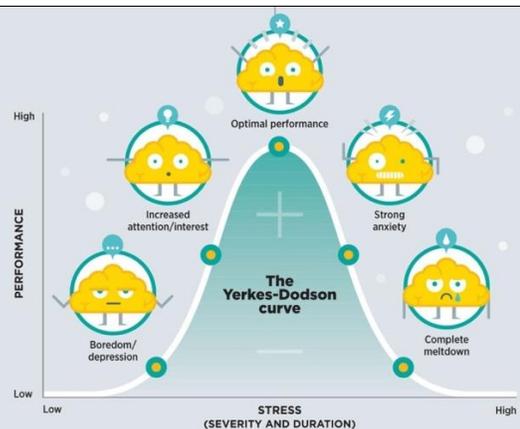
Photo source: <https://nursingeducationnetwork.net/2016/05/24/adult-learning/>

 <p><b>#1</b></p>	 <p><b>#2</b></p>	 <p><b>#3</b></p>	 <p><b>#4</b></p>
<p>Involves learner in planning of instruction (self-directed) <b>WHY?</b></p>	<p>Provides “hands on” experiences with successes and mistakes (i.e., instead of rote information) <b>DOING!</b></p>	<p>Develops practical problem-solving skills (i.e., applicable, not just for learning sake) <b>APPLIED!</b></p>	<p>Demonstrates relevance learner’s goals or needs (i.e., best if perceived to have immediate value) <b>RELEVANT!</b></p>

### Optimal Performance/Stress Zone (Yerkes-Dodson)

Learning is most effective when the learner is challenged beyond what is comfortable or familiar but not so far as to overwhelm.

Photo source: <https://www.gq-magazine.co.uk/article/how-to-handle-stress>



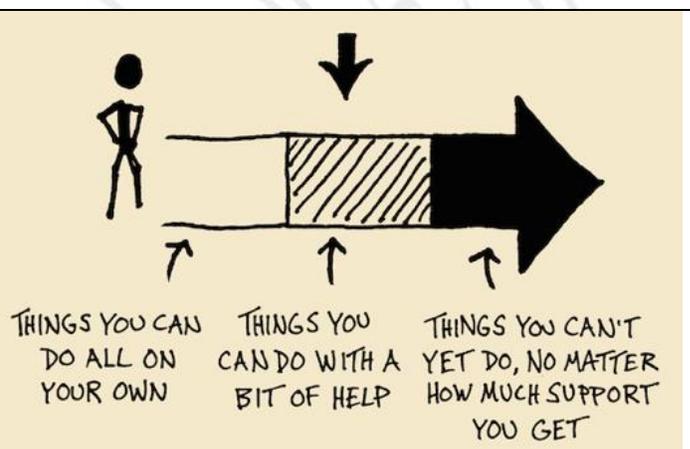
### Zones of development (Vgotsky)

1. what learner can do independently,
2. what learner can do with assistance,
3. what is beyond the learner at this time.

Photo source: <https://www.verbaltovisual.com/visualizing-the-zone-of-proximal-development-vtv007/>

### Scaffolding

A teacher can provide temporary support, guidance, cues to assist learner at edge of their abilities (aka “scaffolding”)



### Working Memory & Cognitive Load (Sweller)

Working memory is limited to holding 5-7 items and processing 2-4 at one time. Attention filters and determines what input is being processed.

1. Recognize a task to be learned has an inherent level of complexity for a learner (intrinsic load)
2. Minimize noise/distraction (external) in a learning setting to reduce devoting mental resources that do not contribute to learning
3. Maximize use of helpful structures (germane) to promote acquiring and storing new schemata into long-term memory



Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4181236/>  
Photo source: <https://www.xyleme.com/6-steps-to-reduce-content-overload/image-whitepaper-cognitive-load/>

### WANT MORE?

[Adult learning theories: Implications for learning and teaching in medical education: AMEE Guide No. 83](#)