

If I Only Had a Brain... Rules

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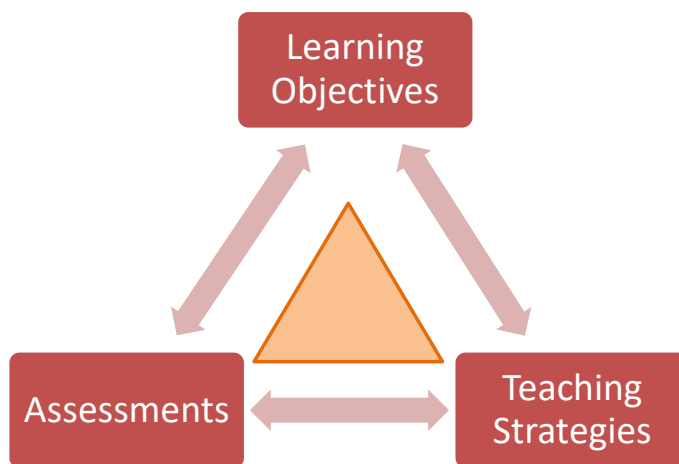
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FAMILY PHYSICIANS

The presenters have no conflicts of interest to disclose.

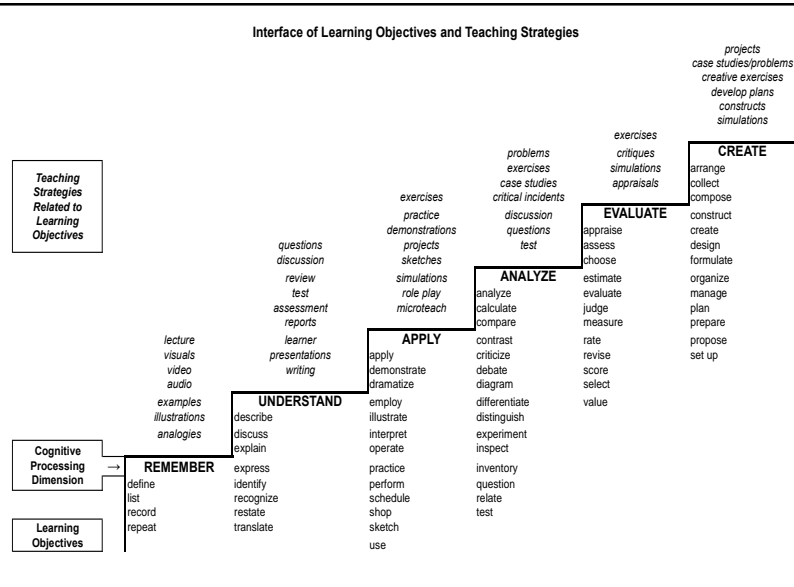
At the completion of this workshop, learners will be able to:

- Apply neuroscience research to medical education;
- Describe a variety of active learning methods;
- Teach content using active learning methods.

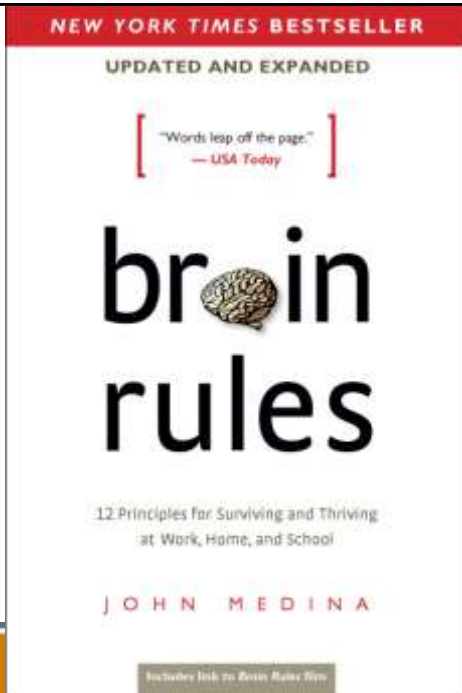
Educator's Golden Triangle



Choosing teaching strategies based on learning objectives



Adapted from: Bloom, B.S. (Ed.), Engelhart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain*. New York: David McKay.



- 12 Brain Rules
- Based on cognitive science research
- A few rules are more relevant to formal teaching and learning

Brain Rules

1. Survival
2. Exercise
3. Sleep
4. Stress
5. Wiring
- 6. Attention**

- 7. Memory**
8. Sensory Integration
- 9. Vision**
10. Music
11. Gender
- 12. Exploration**

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Exploration

“We are powerful and natural explorers.”

- Observation,
- Hypothesis,
- Experiment, and
- Conclusion



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Attention

“We don’t pay attention to boring things.”

Ten Minute Rule



IRSYMCAIBMKGBFBI

IRSYMCAIBMKGBFBI

Vision

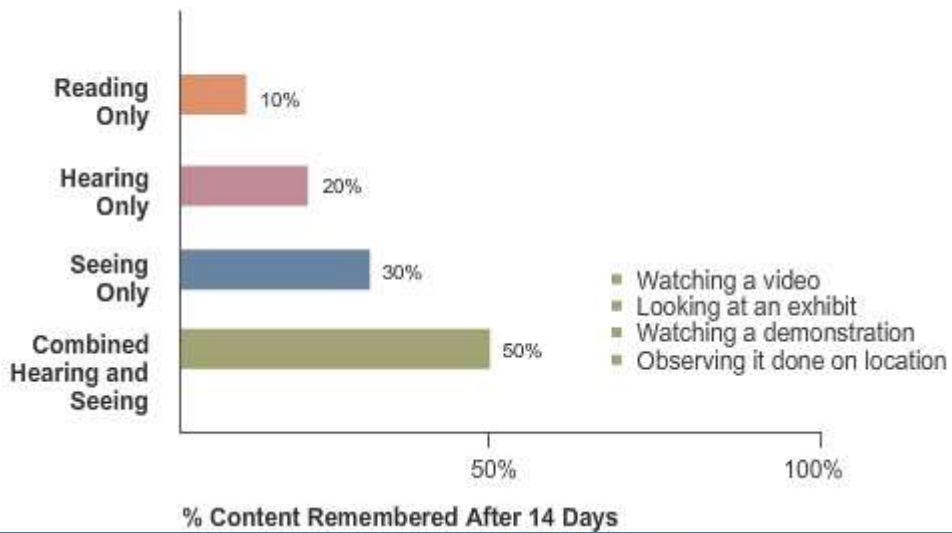
“Vision trumps all other senses.”

Vision

- Most dominant sense
- Learn and remember best through pictures, not words.



passive learning styles - memory stability



Memory

“Repeat to remember.”

Increase recall with...

- Elaborate encoding
- Reproduce the learning environment
- Repetition
- Incorporate new information gradually

How Do You Teach?

- Pair up with the person next to you and share an example of a presentation you gave or participated in where concepts of these “Brain Rules” may have been used.

Active Teaching Strategies

- Think, Pair, Share
- Jigsaw
 - Each group has a different assignment/question
 - Each group presents answer to whole group
- Case studies/photo quiz
 - Small groups
 - Summarize with whole group
- Audience response
 - Assess learners knowledge before, then re-assess
 - Polleverywhere

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Active Teaching Strategies (cont)

- Gallery Walk
 - Stations set up around room
 - Learners rotate through all stations
 - As a group, summarize answers
- Power Point as a tool
- Flipped Classroom
- Interactive games
 - Jeopardy, Family Feud, Are You Smarter than an Intern?

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Quiz Time

- In small groups around your seat, answer this quiz as a group

Flipped Classroom

- Provide pre-lecture reading assignment
- Review and expand on knowledge gaps/deficits
- Requires flexibility

- Can use AT-IF cards as a tool

Non-linear presentation

- Allows you to change presentation based on audience's prior knowledge or preference
- Allows you flexibility during presentation
 - Can be a challenge
 - Need to be prepared
- Breaks presentation up into smaller, different presentations
 - 10 minute rule

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Pediatric Respiratory Infections

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Topic

[Bronchiolitis](#)

[Croup](#)

[Rhinovirus](#)

[Influenza](#)

[Common cold](#)

[Pneumonia](#)

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Common Cold

- Accounts for 22 million missed days of school
- Causes
 - Rhinoviruses – 50% of cold in children
 - RSV
 - Influenza
 - Parainfluenza
 - Adenovirus

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Common cold quiz

- How many colds per year do children <6 y/o average
 - 6 – 8 (up to 1/month September – April)

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Quiz (continued)

- Sinus dz on CT requires treatment and is no longer considered a cold
 - False: viral infections can cause mucosal edema, and obstruction of the ostiomeatal complex
 - Approx 90% of adult pt had CT abnormalities 48 hours after URI
 - 47% pediatric pt had sinus abnormalities within 2 weeks of URI

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Treatment (cont)

- Antibiotic
 - No role in treatment of the common cold
 - RCT: 261 children treated with PCN, Tetra, or placebo
 - 4.6% of placebo did not improve or worsened
 - 4.6% antibiotic group did not improve or worsened



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Influenza

- Influenza A or B
- H1N1
- Generally, an acute, self-limited and uncomplicated disease
- 15-42% of preschool and school-aged children become infected
 - Small portion seek medical treatment

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Use of Games

- Fun way to be interactive
- All residents are competitive
- Tool to re-enforce material
 - Avoid using as the sole presentation

Examples of Interactive Games

Thank you!

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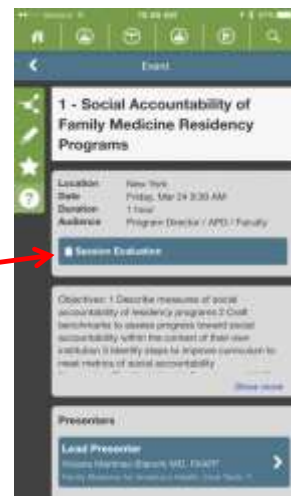
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Please
complete the
session evaluation.

Thank you.



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References

1. Medina, J. J. (2014). Brain rules: 12 principles for surviving and thriving at work, home, and school. Seattle, Wash.
1. Friedlander, M. J., Andrews, L., Armstrong, E. G., Aschenbrenner, C., Kass, J. S., Ogden, P. & Viggiano, T. R. (2011). What can medical education learn from the neurobiology of learning?. *Academic Medicine*, 86(4), 415-420.
2. Hodges, B. D., & Kuper, A. (2012). Theory and practice in the design and conduct of graduate medical education. *Academic Medicine*, 87(1), 25-33.



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