

Myth Busting and Brain Building

The Neuroscience of Teaching and Learning

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Visual Metaphors

Which image best represents what you know about teaching and learning?

(Be prepared to share your thinking.)



Visual Metaphors

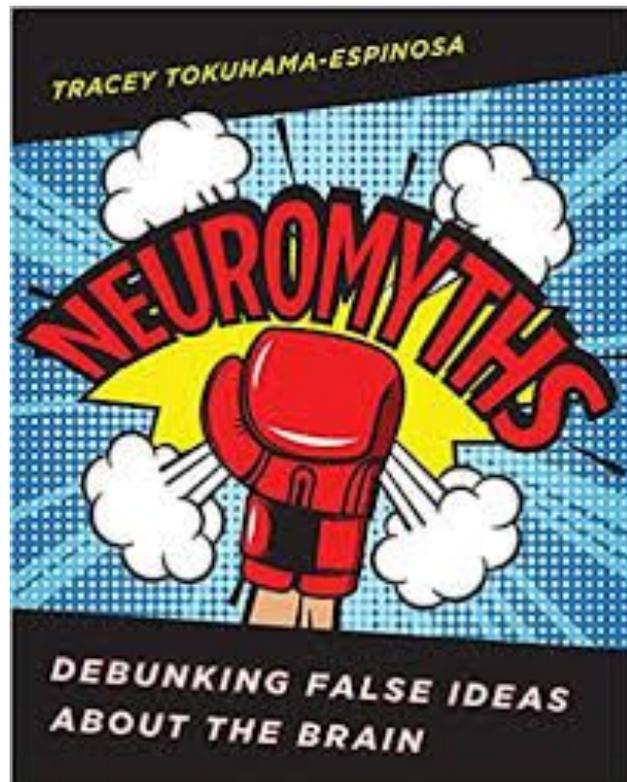
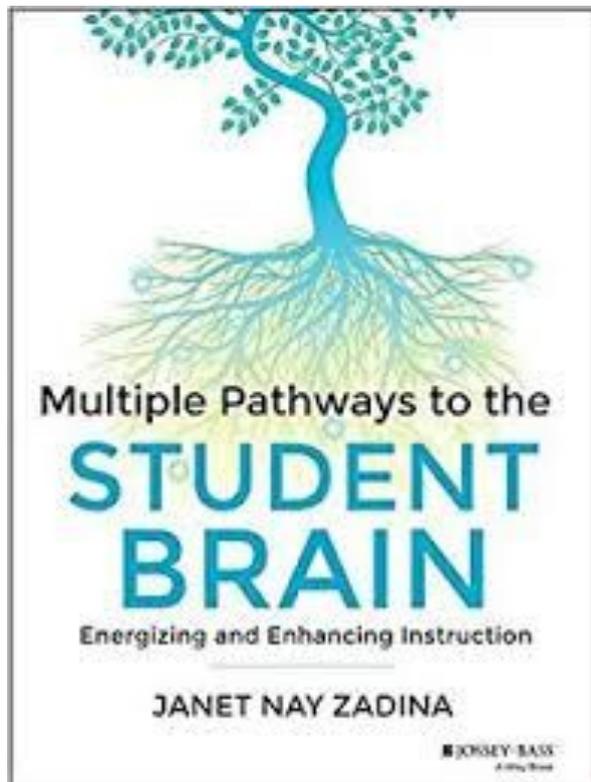
Which image best represents how you feel about teaching and learning?

(Be prepared to share your thinking.)



Sketch your thinking.

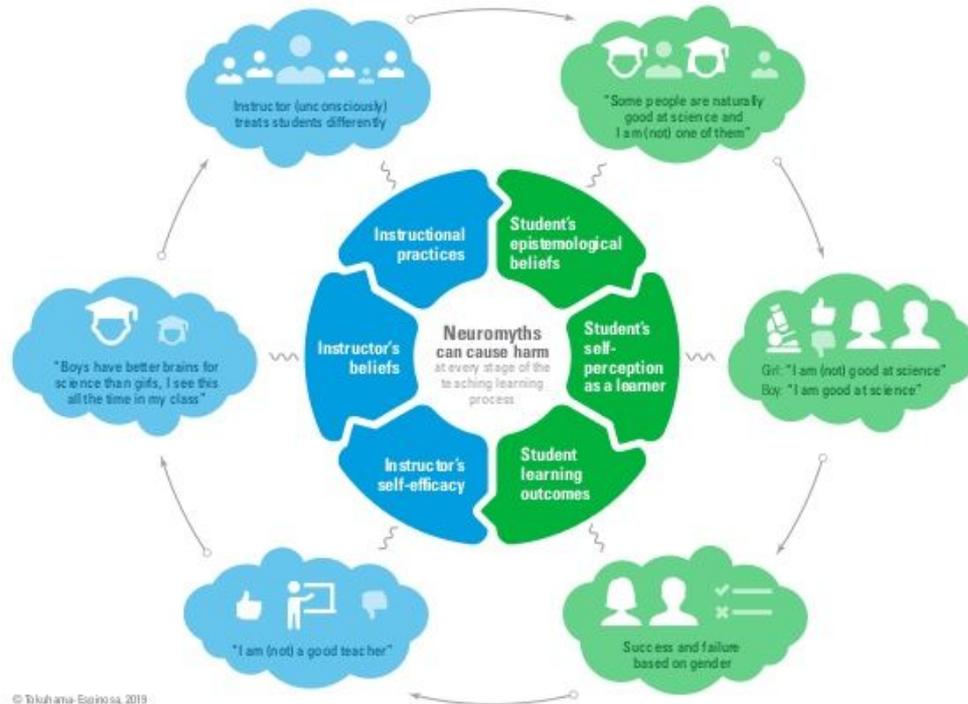




Neuromyths



Neuromyths



Which statements are neuromyths?

1. Most people use only 10% of their brains.
2. Students must be exposed to new information between three and seven times to learn it effectively.
3. Intrinsic motivation is driven by external reward.
4. Students should be rewarded all the time to elicit dopamine.
5. Learning is influenced by emotion.
6. Most learning does not occur linearly.
7. It is easier to retrieve memories when facts and skills have been embedded in individually relevant and meaningful contexts.
8. Creativity is in the right hemisphere of the brain.
9. Individuals learn better when they receive information in their preferred learning styles.
10. Short bouts of coordination exercises improve integration of right and left hemispheric brain function.

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Sketch your thinking.



Sift, Sort, Support



Directions:

1. Read quickly through all of your quotes.
2. Sift them by eliminating two that you think are the least important.
3. Sort your remaining quotes by order of importance; you will have a triangle when finished.
 - a. First, place the quote you think is most important at the top of your triangle.
 - b. Next, select two quotes to put on the second row of your pyramid.
 - c. Finally, arrange your remaining quotes at the bottom of the triangle.

Quote that is most
important to you.

1.

2

3

4

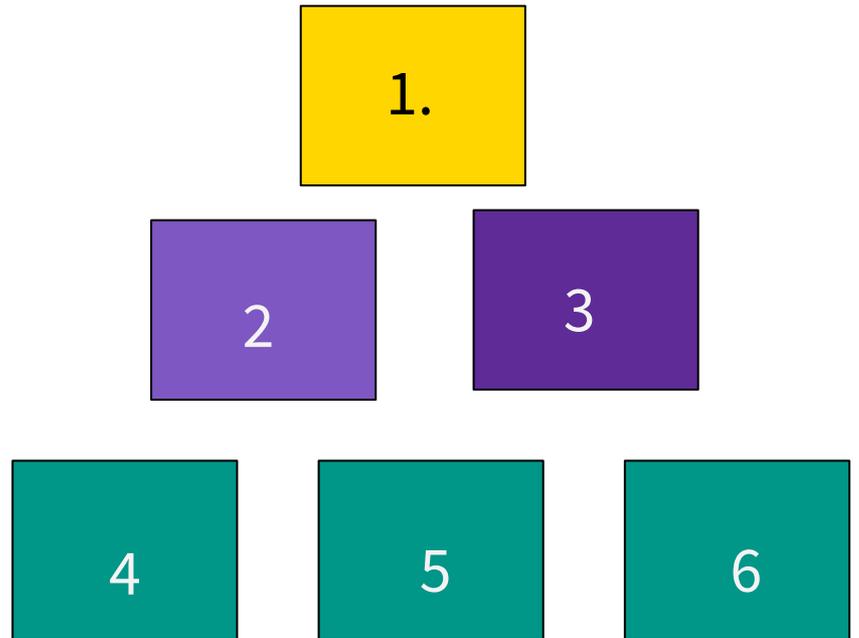
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6

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Share and Compare

What do you notice?

What do you wonder?

Sketch your thinking.



What We Know From Research

- All learning is connected to emotion.
- What wires together, fires together. (Practice makes permanent.)
- Brains seek novelty, AND predictability.
- Retrieval practice works to move information into long term memory.
- The brain has limits on how much information it can handle at any given moment, and visuals take up less space than words.
- There is a sweet spot when it comes to challenge.
- Metacognitive skills are connected to learning.
- Self-efficacy and self-concept influence academic achievement.



What are the implications for your classroom?

What will you start doing?

What will you stop doing (or do less of)?

How did the design of this session connect to what we know about the brain and learning?