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ACTIVITY 5.2
Neuroplasticity in Action

Concept

Students will participate in an activity designed to demonstrate neuroplasticity.

Units it could embed into

This lesson could be integrated into lessons regarding factors that directly impact academic performance such as procrastination, as well as general fitness, wellness, and nutrition.

Learning Targets

1. Students will complete exercises that will allow them to document in concrete ways how the brain rapidly adapts by learning new motor skills.
2. Students will accurately apply the concept of neuroplasticity to describe how movement coordination increases even in a short period of 20 minutes of focused practice.

Directions

For this assignment, you will be writing and drawing with both your dominant hand and nondominant hands. Some of the key questions to consider are:

1. How is it possible for the brain to quickly adapt?
2. Why is it important to be reminded of the flexible and adaptive nature of the human brain across multiple domains of our lives?

You will try drawing and writing with both of your hands and you will observe the challenges and strategies you are able to use to adapt to a challenging situation.

Materials

Handout 5.2: Neuroplasticity in Action

Time

20 minutes

Instructions

1. Provide the students with Handout 5.2: Neuroplasticity in Action
2. Challenge the students to complete the following tasks:
   - » Write a question with their dominant hand and answer the question with their non-dominant hand.
   - » Draw a circle on the left side of a paper and simultaneously draw a square on the right side of the paper.
3. Debrief with students about the level of difficulty of these exercises. Point out that with practice we can learn to coordinate movements more effectively such as when we learn juggling. Review the concept of brain plasticity.

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4. Extension: Explain that in the past, people have had the tendency to misinterpret these patterns to make fixed mindset statements such as: "I'm a left hemisphere type of person, that is why I'm not good with art or creativity," or "I'm a right hemisphere type of person, that is why I'm not good with logic or science.

cna yuo stil raed tihs?

aoccdrng to rscheearch at Cmabrigde Uinervtisy,

it deosn't mttaer in what ored the ltteers in a word are,

the only iprmoetnt tihng is taht the frist and lsat lteer be at the rghit pclae

The example above shows that the right hemisphere, the holistic part of our brain, helps with reading as well, that reading involves both functions of the left and right hemispheres.

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HANDOUT 5.2

Neuroplasticity in Action

Challenge #1

Write a question using your dominant hand & answer it using your non-dominant hand.

Trial	Dominant Hand	Non-Dominant Hand
1		
2		
3		

Challenge #2

Draw a circle on the left side of a paper and simultaneously draw a square on the right side of the paper.

Trial	Circle	Square
1		
2		
3		

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Processing Questions

1. Did you see any improvement in your work as the trials progressed?

2. What is happening within the brain when you master new skills?

3. Reflect on a time when practice and effort have resulted in changes in their mind, emotions, behaviors, or even physical traits.

Extension Activities

- Invite students to improve a small and targeted skill. For example, you can challenge students to learn how to say one or a few tongue twisters without making errors. Students can work in small groups tracking the number of errors they make until they can read the tongue twister without making mistakes.
- **Wordy Woodchuck:** How much wood would a woodchuck chuck if a woodchuck could chuck wood? He would chuck, he would, as much as he could, and chuck as much wood as a woodchuck would if a woodchuck could chuck wood.
- **Bear-ly Babbling:** Fuzzy Wuzzy was a bear. Fuzzy Wuzzy had no hair. Fuzzy Wuzzy wasn't very fuzzy, was he?
- **Pete's Pick:** Peter Piper picked a peck of pickled peppers. Did Peter Piper pick a peck of pickled peppers? If Peter Piper picked a peck of pickled peppers, where's the peck of pickled peppers Peter Piper picked?
- **Baker Blurb:** Betty Botter had some butter, "But," she said, "this butter's bitter. If I bake this bitter butter, it would make my batter bitter. But a bit of better butter – that would make my batter better." So she bought a bit of butter, better than her bitter butter, and she baked it in her batter, and the batter was not bitter. So 'twas better Betty Botter bought a bit of better butter.
- **Sea Speak:** She sells seashells by the seashore.
- **Medical Mayhem:** When a doctor doctors a doctor, does the doctor doing the doctoring doctor as the doctor being doctored wants to be doctored or does the doctor doing the doctoring doctor as he wants to doctor?