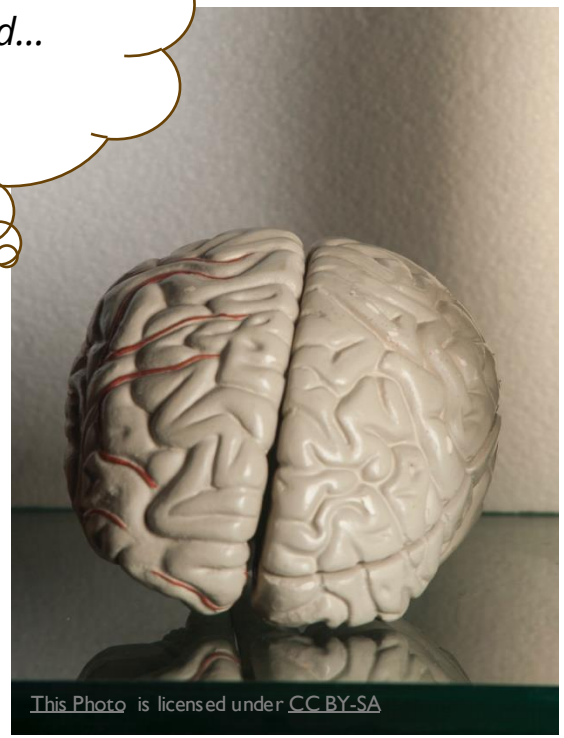
TALK TO THE BODY:

SCIENCE-BACKED COMMUNICATION STRATEGIES THAT USE SENSORY INPUT TO IMPROVE LEARNING OUTCOMES

Help! I feel under stimulated...



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WHY TALK TO THE BODY?

Communication techniques that engage with the body are scientifically shown to significantly improve focus, memory, processing speed and executive function in your audience.

STUDIES CHOSEN:

- Looked at studies across all age ranges
- Examined both acute and long-term interventions
- Included meta studies

1. Buchele Harris H, Cortina KS, Templin T, Colabianchi N, Chen W. Impact of coordinated-bilateral physical activities on attention and concentration in school-aged children. ***Biomed Res Int***. 2018;2018:2539748. doi:10.1155/2018/2539748. PMID: 29998131; PMCID: PMC5994583.
2. Heath M, Shukla D. A single bout of aerobic exercise provides an immediate "boost" to cognitive flexibility. ***Brain Sci***. 2019;9(4):87. doi:10.3390/brainsci9040087. PMID: 31003491; PMCID: PMC6523402.
3. Jha RT, Price S. Embodying science: the role of the body in supporting young children's meaning making. ***International Journal of Science Education***. 2022;44(10):1659-1679. doi:10.1080/09500693.2022.2089366.
4. Loprinzi PD, Blough J, Crawford L, Ryu S, Zou L, Li H. The temporal effects of acute exercise on episodic memory function: systematic review with meta-analysis. ***Brain Sci***. 2019;9(4):87. doi:10.3390/brainsci9040087. PMID: 31003491; PMCID: PMC6523402.
5. Roig M, Nordbrandt S, Geertsen SS, Nielsen JB. The effects of cardiovascular exercise on human memory: a review with meta-analysis. ***Neurosci Biobehav Rev***. 2013;37(8):1645-1666. doi:10.1016/j.neubiorev.2013.06.012.
6. Shams L, Seitz AR. Benefits of multisensory learning. ***Trends in Cognitive Sciences***. 2008;12(11):411-417. doi:10.1016/j.tics.2008.07.006.
7. Smyrnis E, Ginns P. Does a drama-inspired 'mirroring' exercise enhance mathematical learning? ***The Educational and Developmental Psychologist***. 2016;33(2):178-186. doi:10.1017/edp.2016.17.
8. Thomas M. The effect of different movement exercises on cognitive and motor abilities. ***Advances in Physical Education***. 2012;2:172-178. doi:10.4236/ape.2012.24030.
9. Yan J, Wang Y, Chen AG, Ma DJ. Empirical study of the impact of various school-term physical activity of moderate intensity on the executive function of children in their preadolescence. ***J Sport Sci***. 2014.
10. Zhou Y, Tolmie A. Associations between gross and fine motor skills, physical activity, executive function, and academic achievement: longitudinal findings from the UK Millennium Cohort Study. ***Brain Sci***. 2024;14(2):121. doi:10.3390/brainsci14020121.

STRATEGIES:

Level 1: Just move!

Level 2: Fine & gross motor movements

Level 3: Multi-modal strategies

Bonus: Online strategies

LEVEL 1: JUST MOVE!

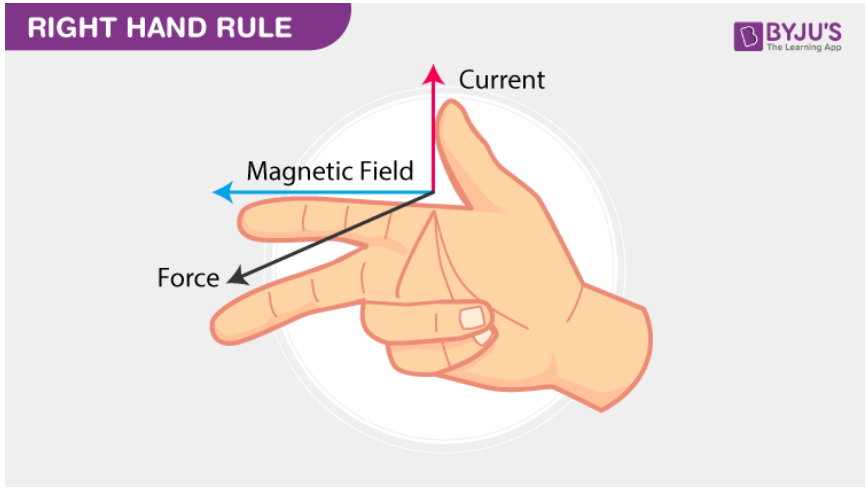
Add physical movement breaks before and after

acute exercise are effective in enhancing long-term memory function

LEVEL 2: FINE & GROSS MOTOR MOVEMENT

- Gross motor → general cognitive ability
- Fine motor → working memory improvement

FINE AND GROSS MOTOR EXAMPLES



https://www.jpl.nasa.gov/edu/resources/lesson-plan/moon-phases/
https://byjus.com/physics/lorentz-force/

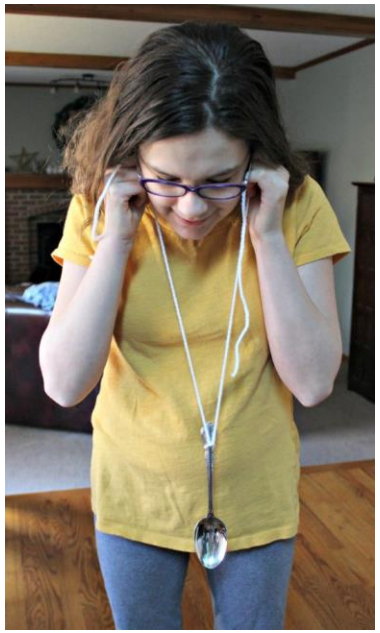
WAYS OF MOVING

- Open vs. closed helps with cognitive flexibility and executive function
- Mirroring improved working memory
- Cross meridian improves attention span and concentration

LEVEL 3: MULTI TASKING

- Bisensory
- Multimodal

→ Reinforces and improves memory



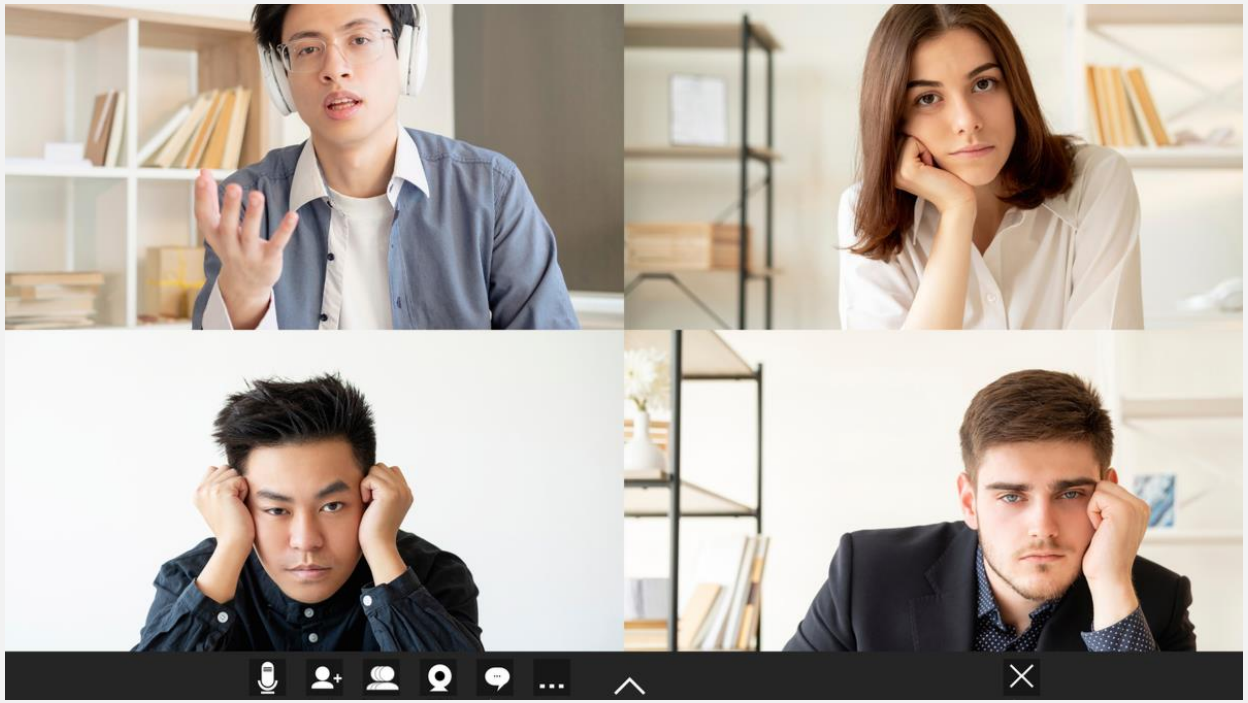
BISENSORY EXAMPLES

1. https://www.kcedventures.com/the-science-of-sound-waves-an-awesome-experiment-for-kids/
2. https://www.nisenet.org/catalog/programs/exploring_size_scented_balloons
3. Secrets of the Jurassic Dinosaurs with Anthony Morgan, 2023

MULTIMODAL EXAMPLE

BONUS!
KEEPING YOUR DIGITAL AUDIENCE ENGAGED THROUGH MOVEMENT

- Encourage participation
- Use fine motor mirroring
- Try sound recognition
- Write and hold up answers



IN CONCLUSION

- Move before, during and after
- Move in big and small ways
- Make it novel
- Engage multiple senses

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