

GIVING THE BRAIN THE “ALL CLEAR” SIGNAL



By Sylvia R. Cadena Smith, Ed.D.

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Tuning into learning requires the ability to *think* clearly. For the human brain, the optimal “thinking” condition for focusing on and processing information is an uncluttered state of **mental openness**. *Mental openness* is the clearing of our cerebral pathways prior to moving from one topic to another. Clear cerebral pathways help learners to be alert to new or changing content in order to effectively *learn-to-think and think-to-learn*.

In the past decade, neuropsychologists and psychologists have discovered that, contrary to popular myth, the brain cannot truly “multi-task” (do more than one thing at a time) and still efficiently process all of the elements required to effectively execute a task. This idea is supported by the “Interference Theory,” as discussed by Tomlinson, et al. (2009), stating that *interference* occurs in learning when there is an interaction between new information and the negative transfer effects of past-learned behavior, memories or thoughts. This interference between new and/or non-relevant prior information can impair both speed and memory performance when learning.

Consider for a moment the actions of: a.) Wine-tasters who must cleanse their palettes before a new wine is evaluated; if their palettes are not cleansed of a previously tasted wine, those flavors interfere with the new and they cannot effectively evaluate different wines; or b.) If children playing with the toy, *Etch-A-Sketch*, want to create a new picture, they must shake the toy to clear out all existing pictures or lines prior to beginning a new picture. If this action is not completed, a newly created picture on the screen will not be clear, may not make sense and may cause frustration. Essentially, the first sampled wine or the first Etch-A-Sketch picture (i.e., the prior unrelated topic) interferes with the processing of new information.

The creation of new knowledge based on relevant pre-learning that is integrated with new information or the processing of new information with the goal of creating a new knowledge base are critical links in *learning-to-think*. The process of ‘*thinking to learn*’ requires intense cognitive work. Moving into a higher order thinking zone (as in Bloom’s Taxonomy) requires focus and the ability to openly receive and analyze information without interference from non-relevant sources.

Giving the brain an “*all clear*” signal tells it to “*get ready to learn*.” All too often, the push and pull of classroom events may distract teachers from integrating *mental openness* activities into the school day. When the brain is strategically ready to *learn-to-think* and *think-to-learn*, students become engaged sooner and more deeply in the learning process. Therefore, it should *not* be surprising if students do not appear to be engaged or are not focused on a new topic when “*mental openness*” is absent or minimized due to an unclear or loose transition from one topic to another. The bottom line is that humans think more clearly when there is definite closure on a topic or an effective transition between topics is integrated into the learning process. Taking steps to establish this closure primes the brain by creating a state of *mental openness* that facilitates smooth and efficient movement towards cognitively processing a new or different topic.

The complexity of a topic or concept and the degree of difference between it and a prior topic affect the degree of *mental openness* that can best maximize thinking and learning. As a result, there are different levels of *mental openness* that impact learning. You might ask: “*What can I do as a teacher to ensure that my students are ready to move to a new topic or subject; i.e., are prepared to think-to-learn?*” To determine the level of *mental openness* necessary to meet a learning situation, consider two key questions: 1.) Has there been prior learning on the topic? Or, 2.) Is a new topic or concept being introduced? If students have a “frame of reference” (they have prior exposure) to the topic, then

teachers can lead their students through a few quick, low-key mental openness exercises. However, if a completely new topic or a new academic concept is being introduced, teachers should take an extra moment to lead their students through some higher-level mental openness exercises.

The act of integrating physical activity into a learning situation is not new; however what is new is that we now understand the importance of merging physical and mental activities to improve learning. Studies conducted by the University of Illinois (2009) suggest that physical activity may increase students' cognitive control or ability to pay attention, resulting in better academic performance. Incorporating simple and easy to perform targeted exercises between learning events increases the likelihood that students will clear their cerebral pathways and sets the stage for new learning, strengthens the learning process and, more importantly, minimizes *interference learning*.

The examples of mental openness exercises proposed in this article are surprisingly simple and easy to integrate into the school day. Even though these exercises are not novel, they are not typically used as a break between learning events in a classroom. Teachers can model these exercises quickly and easily prior to a topic or concept change:

❖ **Low-key Mental Openness Exercises:** Ask students to stay seated at their desks and do the following a few times:

- Close their eyes and slowly breathe in through their mouths and exhale slowly through their noses.
- Slowly raise their heads up and look straight at the ceiling, hold for a few seconds, and lower their heads slowly to original position. Slowly turn their heads right to left and left to right, stretching their necks.
- With their arms in front of them, clasp their hands together and slowly stretch them out until their arms are fully extended. Then slowly raise their arms up above their heads and then bring their arms back to the beginning position.
- Shake their hands quickly at their sides, above their heads, and/or in front of them.

❖ **High-key Mental Openness Exercises:** Ask students to stand by their desks and do the following a few times:

- With their arms to their sides, step up on their toes, hold a few seconds (some students may need to hold onto their desks) and lower their feet to a flat position.
- Reach up with their arms, slowly breathe in, hold for a few seconds and slowly lower their arms and exhale through their noses.
- Bend at their waists with their arms stretched out, attempting to touch their toes, hold for a few seconds and then slowly reverse the action until in the original position.
- With arms stretched out from their sides, twist to the right and to the left.

These free, quick, and easy physical *mental openness* exercises integrated into the curriculum do help students to clear their cerebral pathways and enable better focus and learning. There are no limitations to accessing these resources...be creative, try different mental openness exercises. Share your successes with other educators and parents by posting them on our Facebook page at: <https://www.facebook.com/See.N.Read>.

Helping students to be ready and open to clearly *learn-to-think* and *think-to-learn* better positions them to maximize the benefits of instruction on each new topic. As these simple exercises are incorporated into the instructional day, it will be apparent to teachers that students are more attentive and ready to learn...and so are they!