EDUTOPIA – BRAIN-BASED LEARNING

6 Ways to Capture Students' Attention

Teachers can use insights from neuroscience to help ensure that learners stay engaged during class and are more likely to retain information.

by Judy Willis, Jay McTighe

January 18, 2024

Leo Acadia / The iSpot

In this article, we'll touch on insights from neuroscience about the attention-getting system of the brain. Understanding this process informs teachers about specific techniques they can employ to capture students' attention as new topics are introduced.

The brain evolved to promote survival. Every second, millions of bits of sensory information from the receptors of the eyes, ears, internal organs, skin, and muscles make their way to the brain's attention entry gate, but only about 1 percent of it enters consciousness. The system that determines what gets in (i.e., what the brain attends to)

is the reticular activating system (RAS). This primitive network of cells in the lower brain stem, through which all sensory input must pass to reach any higher regions of the brain, is essentially the same in your cat, your dog, your child, and you.

In the wild, an organism is well-served by an attention system that gives priority to things that are unexpected, changing, and different from the usual. This is the key to the RAS attention gate: Any perceived source of danger is prioritized. However, in the absence of threat, attention is directed to any changes in an animal's or human's environment.

CAPTURING ATTENTION IN THE CLASSROOM

Although survival in the wild isn't much of a priority for most humans today, the RAS is still programmed to attend to perceived threats and change. If students feel physically and psychologically unsafe in a school or a classroom, they're less likely to focus their attention on the lesson. As noted earlier, in the absence of perceived threat, our brains are particularly receptive to what's new, curious, or unexpected.

In school, the students' brains are always attending… just not always on the topics we're teaching! When students aren't attentive to a lesson or a textbook, the RAS isn't giving priority entry to the teacher's voice or words on the page, but to other more interesting or distracting sights, feelings, and thoughts.

In order to capitalize on the brain's selectivity, here are six practical and proven attention-getters you can use at the start of a new unit or lesson.

1. SURPRISE STUDENTS

Since the brain is attracted to novelty, do something unusual or unexpected to arouse curiosity and open the RAS attention filter.

Examples: Wear something unique, bring in an unusual object, or play a song when students enter the room to promote curiosity, hence focus. Tell students that there's a link between your clothes, the object, or the words in the song and something in the lesson. Invite them to guess what it is.

At the beginning of a unit on negative numbers, or on past tense in language, a teacher enters the room by walking backward and then asks students to guess why.

2. PRESENT ODD FACTS, ANOMALIES, OR DISCREPANT EVENTS

The brain is fundamentally a pattern-making organ. Constructing patterns enables humans to make sense of the world. However, when an established or expected pattern is broken, the brain is immediately aroused.

Example: A science teacher blows up a balloon, then slowly pierces one end with a sharpened wooden cooking skewer. To the amazement of students, the teacher pushes the skewer through the opposite side of the balloon without bursting it. Students are transfixed and want to see the demonstration again!

3. INVITE STUDENTS' PREDICTIONS

The ability to make sound predictions is fundamental to survival, and the brain rewards successful prediction through its release of dopamine, a pleasure-inducing chemical. Teachers can provide opportunities for students to make predictionsabout the relationship

of the curious sensory input or other novelty to the lesson. When this happens, students will seek information to help them make correct predictions and remain attentive as their brains seek to find out if their predictions are correct.

Examples: In a science lesson for first graders, ask children to predict which objects will float and which will sink in a tub of water. A high school psychology teacher can ask students to predict the results of a schoolwide student survey. In both cases, students are engaged and eager to find out if their predictions are correct.

4. POSE A PROVOCATIVE (HOOK) QUESTION

A stimulating question can be an “itch” in students’ brains that they’ll want to scratch.

Can what you eat prevent zits? Does a fart contain DNA? Is aging a disease? What superpower would you want?

The best hook questions are open-ended. They’re meant to stimulate thinking and discussion and to open the door to further exploration. Give students a reasonable amount of quiet thinking time before they answer. Have them do a quick write about their thoughts and/or engage in a think-pair-share with another student. After this personal engagement, learners are likely to be more attentive to your teaching on the related topic.

5. CITE A CURRENT EVENT OR ISSUE RELEVANT TO STUDENTS

Students often have opinions about current events or controversial issues in their school, town, state, etc., and these can be used to spark engagement.

Example: For a unit on persuasive writing, a middle school teacher shows a newspaper article about a school board proposal in another district that would require students to wear uniforms. Students then discuss the pros and cons, state their position, and even switch sides to try to better understand different perspectives and develop rebuttals, all as an opening to the unit on persuasion.

6. USE HUMOR

Humor is a guaranteed dopamine booster and can serve as a great attention hook.

Example: A sixth-grade mathematics teacher begins a unit on ratio and proportion by presenting funny caricatures of celebrities. She asks students to describe why the pictures are funny, and they note that various physical features (e.g., eyes, nose, ears, head) of the characters are greatly exaggerated. Then, the teacher shows da Vinci's Vitruvian Man to illustrate idealized proportions of the human body.

HOOK AND HOLD ATTENTION

We recommend that you rotate your attention-getting techniques to avoid being predictable. The intent of using the techniques described above is to hook student attention, but the intent isn't simply to gain immediate attention for the moment. The longer-term goal is to hold that attention over time. There are numerous ways to capitalize on initial attention by employing active-learning strategies, including the use of authentic tasks and projects, inquiry-oriented instruction, cooperative learning, Socratic seminars, simulations and role-plays, and design thinking (e.g., using makerspaces, where students can create tangible products), and allowing students appropriate "voice and choice" options in assignments and performance tasks.