

NEUROSCIENCE IN THE CLASSROOM

The amygdala is responsible for emotions, survival instincts and memory¹

A brain with high stress has decreased memory and withholds effort

Stress from boredom and frustration blocks the flow through the amygdala

Stress impacts the amygdala and can have negative consequences for learning



Boredom and frustration are directly associated with stress, and are the #1 for dropouts

Stress comes in many forms for students:

- The boredom of already having mastery of the information
- No personal relevance and not being sufficiently interested in a topic or aware of how the topic relates to a student's own interests or prior knowledge
- Frustration from previous failures, being confused, and falling behind
- Fear of being wrong if asked to speak in class, answer questions, or present their work orally



PROMOTING HEALTHY RELATIONSHIPS AND CONNECTEDNESS

- Provide opportunities for movement and brain breaks
- Read to students, or tell them stories/anecdotes
- Use humour, optimism and kindness in your classroom
- Support and encourage students to develop social-emotional skills
- Positive interactions with peers
- Listen to and enjoy music with students
- Give students choices regarding their learning
- Promote connectedness within the classroom and school community

Positive learning environments and healthy relationships help students persevere through stress, boredom and frustration. When students feel connected to their school community they have higher levels of emotional well-being, engagement and empowerment.²

1 <http://neuroscience.uth.tmc.edu/s4/chapter06.html>

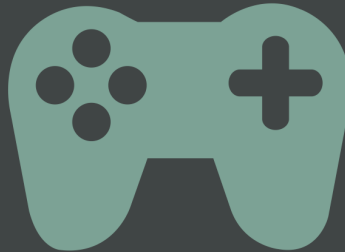
2 <http://bit.ly/SchoolConnectedness>

THE GAME MODEL

What is the pull of video games?

Video games sustain effort, motivation and perseverance

Incorporates the most powerful dopamine releasers; curiosity and achieving challenges



Achievable challenges are presented with immediate feedback

Knowledge is built through progressive levels of difficulty and a variety of sources

Students are most motivated by the expectation of a dopamine reward when they learn at individualized levels of achievable challenges.

Providing students with achievable challenges reduces the effects of stress caused by boredom or frustration and promotes the intrinsic motivation of the video game model.



BEST PRACTICES IN THE CLASSROOM

- Present content in a comprehensible manner that can be perceived as achievable by students
- Encourage peer-to-peer work sharing to solicit feedback that is positive and constructive
- Find ways to build flexibility into your curriculum, so that multiple paths to success are available
- Ask students to explain their choices in their work to show that they are conscious of their decisions
- Break large projects down into smaller goals that are manageable and give feedback along the way
- Use attention buy-in "hooks" to connect students to and sustain interest in instructional material
- Help students track their own goals by selecting progress points they want to achieve
- Encourage the use of individual response tools like clickers

Incorporating different teaching methods supports the development of positive learning environments by engaging and connecting students to their learning and peers. Positive relationships and connectedness with peers, family and teachers are important to students so they feel their learning is a priority, develop a positive sense of belonging, and an intent to pursue further education.

Interested in more?

<http://bit.ly/VideoGameModelTEDx>

<http://bit.ly/SchoolConnectedness>



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