

## Chalk Talk: A teacher's voice

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Think for a moment about what motivates you to be fully engaged when completing a task or learning something new.

Go ahead. I'll wait.

Now think about a task that you do not find engaging, or that causes you to lose focus and begin to daydream. Did you think about a task that lacked personal value? Did you think about one that had little to do with your own interests or needs? One you would never need to do again? A task that someone else told you had to be completed?

Students have the same reaction to much of the content being explored in their classrooms. When the relevancy of the content has not been made explicit or the student has not been guided to personally identify with it, then student engagement and learning is often extremely low.

When designing a unit or lesson, I ask myself several questions: Will this catch my student's attention? Is it relevant to them culturally, emotionally, and situationally? Will it give them confidence and provide satisfaction?

These questions take into account the current findings of neuroscience and have some serious implications for educational theory. Affective neuroscientists have linked our ability to deeply learn to our brains, bodies, and emotions working together. Researchers no longer identify emotion as something that detracts from our learning. In fact, emotion is now thought to be one of the essential keys to unlocking the door to deeper learning.

Social neuroscientists, on the other hand, have discovered that we interpret and choose our own evidence for learning — but we do so by comparing it to cultural norms, ideas, and emotional reactions of those around us. This means that we must welcome our students' culture and community into our classrooms in order for them to accept and internalize the learning taking place.

These new findings of neuroscience go hand-in-hand with what we already know about the brain. We know that connections in the brain that are frequently used become thicker and more

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efficient, whereas connections not being used in the brain are eliminated through a process called pruning. By providing multiple experiences for learning and tapping into the social and emotional portions of the brain, we stave off this pruning. We are creating greater interconnectedness, growth, and stability in the brain, which leads to deeper learning.

So how do we take all this knowledge gleaned from neuroscientists and put it into action in our classrooms? This is where relevancy steps in to maximize student engagement and learning. When we guide our students to make connections between their everyday lives and the content under study, we are tapping into cultural and emotional relevancy. We must view their past experiences as valuable and as a starting point for our content. When we look to our communities for learning opportunities, we are putting our content into context and tapping into situational relevance. This enables our students to see value in what they are learning. We can do this by raising awareness of an issue in their community, providing an opportunity to take action, and then providing an opportunity to reflect on how their actions affect those around them.

I put these findings to the test last year and created a unit on human body systems that relied on cultural, emotional, and situational relevance. We dove deep into the respiratory system and collected evidence to argue whether or not air pollution causes asthma. From there we used our evidence to determine if we should support the construction of a biomass plant proposed to be built in the community. We explored this topic by surveying rates of asthma within our school, researching rates of asthma in the community, and comparing them to the rest of the country.

Not only did we have vigorous discussions around the science, but we also included a cost-benefit analysis of the physical health of residents and the opportunity for employment and tax revenue for the city — both emotionally charged issues. If I had focused on the air quality and asthma rates of China, it would not have been as meaningful to my students — decreasing engagement and learning.

It is also important to remember that what is relevant today may not be relevant next week or next year. We must make room to update our content, especially if we are drawing from current events. For example, pressing topics such as Ebola were relevant and engaging last fall and were a fantastic entry point into teaching my students about cell structure and function. But if I used the same lessons next year, the relevance and engagement would more than likely fall short due to the diminished urgency of this issue.

Our students are our future problem solvers and caretakers. It's time we prepare them for it by using our content areas as a platform for action and utilizing what is culturally, emotionally, and situationally relevant to them. This will provide the engagement and learning that is too often absent in today's classrooms.

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