

Emotions, Learning, and Good Teaching

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Introduction

I have taken classes in school where I was constantly asking myself: Why do I need to learn this stuff? This is so boring. I wish I were doing something else.

Every once and a while I was lucky to take a class that was terrific. My teacher was great. I was totally involved, completely immersed. I could not learn enough. This learning was very important to me.

So, what was the difference between those boring classes I took and ones that were really great? In this paper, I explain why we learn a lot more in some situations compared with others.

First, emotion is important for learning and memory. Many people remember highly emotional experiences. They can usually tell you in great detail about a particularly thrilling, highly stressful, or a frightening experience—even if it occurred a long time ago.

For example, I can still vividly recall when I was about 6 years old, I was riding my bicycle along the right side of the state highway on my way home. A boy next door yelled across the road, asking me to come over to his house to play. I started to turn left across the road, but quickly turned back to the side berm when I heard brakes screeching right behind me. A big truck stopped suddenly just in time to keep from running over me. And then several cars going too fast and following too closely behind the truck crashed into each other—a chain-level collision.

I was really scared. I could have been run over and crushed by the semi. A policeman later came to my house and asked me questions about what happened. I was afraid he would arrest me and that I would go to jail because I caused an accident. But he did not.

Even so, I could not sleep that night. I kept repeatedly reliving the experience. I had many nightmares about the accident. I can still see a picture in my mind of what happened. I could have been killed. Fortunately, I was not physically hurt; but I learned an important lesson for survival. Since then, I always look before crossing a road, whether walking, riding a bike, or driving a car, because of this traumatic experience when I was a child.

Emotions Structure Memories

Emotions can organize and give meaning to experience. “They can, therefore, serve as the architect or orchestra leader for the mind's many functions” (Greenspan & Shanker, 2004, location 658).

Greenspan and Benderly (1997) conclude that emotions arising through engagement in a learning task create the architecture of a student’s mental structure. The dual coding of sensations and emotions from that experience *organize* the mental structure.

There is evidence from molecular biology that supports Greenspan and Benderly’s claim. Kandel (1989), a Nobel-prize winning neuroscientist, claimed that “evidence suggests that learning produces enduring changes in the structure and function of synapses...” (p. 121). He recommended further study on “the *power of experience* in modifying brain function by altering synaptic strength...” (p. 123, italics added).

Good Teaching and Effective Learning

What teaching strategies help promote student learning? In other words, what principles underlie good teaching? Merrill, Barclay, and van Schaak (2008) claim that five *First Principles of Instruction* promote student learning:

1. Learning tasks ought to be meaningful for students. In other words, students can see the value of learning new things because the tasks are authentic, and what is learned can be used in their lives.
2. Students should connect what they already know with new things to be learned. Prior knowledge and skills should be activated.
3. Students benefit by watching and listening to demonstrations of what is to be learned. They need to see a variety of examples of what they are learning.
4. Students need ample opportunity to try these tasks for themselves. They also need to get feedback on how well they are doing.
5. Students should be able to integrate what they have learned into their own lives. They can show and tell others what they have learned.

Dewey (1916) described experience and thinking: “When an activity is continued into the undergoing of consequences, when the change made by action is reflected back into the change made in us, the mere flux is loaded with significance. *We learn something*” (p. 139, italics added).

Montessori (1917) further discussed intentionality of action by its manifestation as *motivation*. That is,

through our wills, we make intelligent choices to *move* towards goals. She wrote:

The whole external expression of the will is contained in *movement*: whatever action man performs, whether he walks, works, speaks or writes, opens his eyes to look, or closes them to shut out a scene, he acts by "motion" Therefore the will is not a simple impulse towards movement, but *the intelligent direction of movements*. (pp. 170-171)

First Principles of Instruction are consistent with research on effective learning (Merrill, *et al.*, 2008). Emotions and sensations structure the organization of long-term memory (Greenspan & Benderly, 1997; Greenspan & Shanker, 2004). If students do authentic, real-world tasks, they are likely to be motivated to learn. This motivation, coupled with emotion and sensations arising from actively performing authentic tasks, will result in strengthened synapses in the human nervous system.

According to Eagleman (2015), when we are born we each have approximately 100 billion neurons in our nervous system. During the first 2-3 years of life, our

body creates trillions of connections among those neurons. As we further grow, develop, and learn, our individual experiences literally prune those connections, so that the remaining connections form a unique mental structure, the unique long-term memories we each have. Certain connections are strengthened through those experiences throughout our lives, and other connections are weakened.

Emotions arising during life experience apparently strengthen certain connections (synapses) among neurons, forming the architecture of each of our minds. Greenspan and Benderly (1997) have noted that since the ancient Greek philosophers, the rational or cognitive aspect of mind has often been viewed as developing separately from emotion. They argue that this view has blinded us to the role of emotion in how we organize what we have learned: “In fact, emotions, not cognitive stimulation, serve as the mind’s primary architect” (p. 1).

Greenspan and Benderly (1997) identify the importance of emotion during human experience: “... each sensation ... also gives rise to an affect or emotion.... It is this *dual coding* of experience that is the key to

understanding how emotions organize intellectual capacities ...” (p. 18).

Conclusion

In summary, if teachers follow *First Principles of Instruction* in guiding student learning (Merrill, et al., 2008), those students are likely to form stronger mental structures organized by their emotions (Greenspan & Benderly, 1997). Student emotions and sensations should naturally arise during active experience of authentic, real-world tasks. Students will learn to think in ways that are consistent with those experiences (Dewey, 1916).

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