

SOCIAL EMOTIONAL LEARNING



AND THE BRAIN

MARILEE
SPRENGER

© Strategies
to Help Your
Students Thrive



Hawker Brownlow
Education a Solution Tree company

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Introduction

Two things should become foundational in our education system: social-emotional learning (SEL) and trauma-informed practices. As educators, we know that many of our students have been affected by adverse childhood experiences (ACEs) and that positive childhood experiences can counteract some of the resulting trauma. Social-emotional learning has the power to create some of those positive experiences. Furthermore, many of the SEL strategies overlap with those related to trauma-informed practices.

A recurring theme in this book is that every child has a story, and I hope that the information shared in the following pages will help rewrite some of those stories and reinforce others. The path for educators is clear: build relationships so students feel love and a sense of belonging; teach empathy so students feel understood and can provide understanding to others; make students self-aware so that feelings are understood; help students regulate feelings so they can attain and use prosocial skills; support students in becoming skilled in social awareness so they build an understanding of how

to interact with people; teach students how to handle relationships so they can work and play with people who come from various backgrounds and cultures; and finally, teach students how to choose and make wise decisions that will affect the future.

It bears repeating: every child has a story. I have a story. I am one of those adults who grew up believing that I was not good enough, that I could not fit in (although I pretended to), let alone belong anywhere. I grew up with rules that no child should grow up with: don't show your feelings; never, ever cry or your mom will leave you; never trust others—especially men (they will cheat and leave). I am one of every six adults who has experienced four or more ACEs during my lifetime (Centers for Disease Control and Prevention, n.d.). I know the fight-or-flight response well. As a result, my physical and mental health are at risk.

I am not sharing this information to elicit pity. Many people have had far worse experiences than mine. I did not live in poverty; I had two parents at home; I had the food, clothing, and shelter that I needed. I am sharing this information because of the two people who saved me, who literally kept me from the depression and despair hovering over me as a child, who made me realize that even though I never knew what would happen at home, I could go to the dependable, positive place that was school. Those two people were teachers. My 1st grade teacher, Miss Pauli, let me come in early to her beautiful, welcoming classroom, and she let me talk. She listened. She complimented my work and encouraged me. Fast-forward to 5th grade. Miss Williams made me feel important, that I was good enough. She is the reason, beyond any doubt, why I became a teacher. I wanted to make kids feel the way she had made me feel. She listened, she cared, she touched—gentle hugs and pats on the head or shoulder—and she checked in throughout the day to make sure we were all OK. A few other people were positive influences along the way, and I was OK until my first depressive episode in college. I eventually sought the help I needed, and I am doing well.

But I'm worried about the kids. According to John Medina (2017), humans today could live to be 115 to 122, under ideal conditions. Perhaps those conditions include healthy eating and getting enough exercise, but they must certainly also include lower levels of stress, positive relationships, family ties (within the family you were born into or the family you create), feeling empathy for and from others, and having a sense of belonging. Social-emotional learning addresses all those conditions. Furthermore, SEL improves academic achievement by an average of 11 percent, increases appropriate social behavior, improves students' attitudes, and reduces depression and stress (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

I have been a student of the brain since 1992. I have traveled, trained, and spoken with educational leader and author Eric Jensen, who has taught me much about the brain and how to find out more. Through my research, I have identified the connections in the brain that are related to the social-emotional learning competencies delineated by the Collaborative for Academic, Social, and Emotional Learning (CASEL): self-awareness, self-management, social awareness, relationship skills, and responsible decision making. This organization, which began as a group of educators and researchers committed to advancing social-emotional learning, has had a huge impact in this area for more than 20 years.

By following the work of Daniel Goleman, one of the cofounders of CASEL and author of the groundbreaking book *Emotional Intelligence* (1995), and the work of neuroscientists such as Bessel van der Kolk (2014), we can see how SEL affects various areas of the brain. For instance, in this book you will learn how our "gut feelings" are directly related to the decision-making areas in our brain.

In reading the work of Daniel Kahneman, author of the best-selling book *Thinking, Fast and Slow* (2011), we learn about the brain's two thinking systems. System 1 is fast, automatic, emotional, and unconscious. System 2 is slow, effortful, and conscious. System 1

is at work when our students react *without* thinking. SEL strategies will teach students to stop and use System 2 before they respond. One of the strategies I used with my students when they needed to respond in a situation was to ask this question: “Are you checking System 2, or is System 1 in charge?” The more students practice taking a breath and giving some thought to a situation or decision, the more likely they are to respond appropriately.

From brain structures to brain chemicals, learning takes place on an emotional level. Awareness of emotions and being able to regulate those emotions lead the way to building positive relationships, successfully solving problems, and making responsible decisions. Understanding the brain helps both students and teachers rely on strategies that will activate the appropriate parts of the brain and will be suitable for whatever experience they encounter. For example, when students know that getting upset activates the *limbic* (emotional) brain and blocks the connection between the thinking brain and the emotional brain, they realize the importance of having and using strategies to calm themselves before speaking or acting.

Brain Structures and Chemicals Related to SEL

One of the simpler ways to look at the brain is from the bottom to the top. The spinal cord is connected to the *brain stem*, the lowermost part of the brain. The brain stem contains the first filtering system for information that comes into the brain via our senses. This system is called the *reticular activating system*, or RAS; it filters out about 99 percent of incoming information. If the information entering is in some way threatening, the RAS may halt the flow of information in favor of sending out an alarm throughout the brain. When the next level, the *limbic system*, receives the alarm, many activities begin. First, the *amygdala*, the brain’s second filter,

examines the information. The *hypothalamus*, which is part of the limbic system, sends out chemicals to prepare the body and brain for a fight-or-flight response. Other chemicals, such as *adrenaline*, which is released from the adrenal glands, cause the heart to beat faster and increase the rate of breathing. Unless the body is in immediate danger, whatever the stressor is, the thinking brain should decide what next steps to take. But the pathway from the thinking brain (the *frontal lobe*; in particular, the *prefrontal cortex*) down to the reflexive brain (the limbic system and the brain stem) is slow. If we put all our focus on the amygdala, the limbic structure in charge of emotions, it will (along with the *hippocampus*, a structure related to memory) bring to mind all the horrors of this particular stress-inducing phenomenon. For example, if we are approaching a large German shepherd and previously had a bad experience with a similar dog, that memory will drive our brain and we will expect a repetition of the bad incident.

Emotions influence where new information is processed in the brain. For learning to become memory, it must be directed through the emotional filter (the amygdala) along the route to the reflective, higher brain—the prefrontal cortex. When this happens, the brain takes a responsible look at the situation and finds a better way to handle it. Perhaps, in the German shepherd example, the thinking brain will notice that this dog is on a leash and would be unable to reach us.

Several chemical “cocktails” run our brains. *Neurotransmitters* such as dopamine, serotonin, endorphins, and oxytocin are some of the most common. Cortisol, the stress hormone, is also involved in many situations, both positive and negative. Cortisol is released when we are a little anxious about a presentation, an interview, or meeting someone for the first time—examples of good stress. It is also released when our brains are preparing for survival. That fight, flight, or freeze situation—bad stress—prompts the release of much more cortisol.

And what is the antidote to stress? According to Foreman (2019), the antidote is trust.

I have created the word *celebrate* to define the premise of my work. *Celebrate* stands for “social-emotional learning elicits brain responses appropriate to experience.” It’s a lot to say, but it says a lot. Social-emotional learning should help our students choose the appropriate response in whatever situation they may find themselves. Neuroscience researchers have found areas and chemicals in the brain that respond to certain learning strategies. I want us to be able to understand why a response occurs and then create more strategies that will engage the same areas of the brain.

Don’t Let Emotion Drive the Bus!

Mo Willems’s book *Don’t Let the Pigeon Drive the Bus!* was a favorite of my youngest granddaughter, Maeve, so I read it to her often. I also used it as the inspiration for her birthday book, which is a collection of photos from throughout the year that I usually make into some kind of story (I do one every year for each of my grandchildren). Maeve’s fifth book, titled *Don’t Let Maeve Drive the Bus!*, was filled with wonderful things that Maeve could do, like playing soccer, reading, and climbing, but it conveyed the message that we would never want a 5-year-old to drive!

Along those same lines, we don’t want emotions driving our lives. Adding to our lives? Yes. Driving our learning? Yes. My friend Robert Sylwester, author of *A Celebration of Neurons* (1995), tells us that “emotions drive attention, which drives learning, memory, and just about everything else” (p. 99). But we should also keep in mind Brené Brown’s warning against emotion as the sole driver of learning: “If emotion is driving, where is logic and thought? In the back seat? Or worse, in the trunk!” (Jarvis, 2019).

Building Teacher-Student Relationships

The brain is most interested in survival and has a deep need for relating to others.

—John Medina

If you read no other chapter in this book, read this one. This reading alone will make a big impact in your classroom—as it could in *every* classroom. Building and maintaining relationships is the core of life. The central role of relationships is also backed by research. According to Hattie (2017), positive relationships between teacher and student have an effect size on learning of 0.52. The effect size is a measure of how important a difference is between two groups. This means that based on a meta-analysis of relationships, teacher-student relationships can accelerate learning more than the average 0.40, which represents a year’s worth of growth. Before we can teach students how to handle relationships with their peers, we, as educators, need to model relationship building.

When it comes to the subject of history, there isn't a finer teacher than Sarah. She loves her content and can often mesmerize her students with stories, monologues, and rare tidbits of information about a country's war heroes and relationships, both personal and professional. When the school survey was given to 6th through 12th grade students, however, Sarah did not fare well.

She was crushed when she reviewed the answers her students gave in several areas. Although 88 percent of her students agreed that Sarah explained things in a different way if students didn't understand, only 15 percent said that she noticed when they were having difficulty, and only 5 percent said that she helped them when they were upset.

At first, Sarah was angry. She thought, "With all the time I spend preparing the best lessons for them, making sure that I help them see and hear history, how can they say I don't notice their content and personal issues? What's wrong with them?"

By the time Mr. Mercer called her in for a meeting to discuss the results, Sarah had begun to calm down and was trying to figure out how the students had come to their conclusions. She sat down across from her principal and mentor. He smiled and began by saying, "Sarah, you know you are a great teacher and you reach most of your students. Your teaching style is above reproach. My observations in your classroom have shown me how you can dazzle reluctant learners, and whether I'm observing your 8th graders absorbing the nuances of the Civil War or your 10th graders tackling the reasons leading up to the war in Vietnam, your kids view you as a knowledgeable historian. You can make them feel connected to Holocaust victims and survivors, but you don't seem to make them feel connected to you! It wasn't until I studied the surveys that I realized this.

"I apologize for not looking closely enough to realize that you have a relationship with your class, but you don't really relate