SOCIAL & EMOTIONAL LEARNING

Using Brain Science to Boost Social and Emotional Skills

Susan Beaulieu and Kathryn Sharpe
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The 2013-2016 cycle of the Minnesota 4-H Foundation's Howland Family Endowment for Youth Leadership Development is dedicated to understanding social and emotional learning and its contribution to closing the achievement and opportunity gaps. This series of issue briefs, funded in part by Youthprise, is designed to help people understand, connect and champion social and emotional learning in a variety of settings and from a variety of perspectives.

INTRODUCTION

"I am who I am because my brain is what it is." – Neurophilosoher Patricia Churchland

As the field of brain science develops, we are discovering the myriad implications that it has for the field of youth development. At the same time, there is increased research and attention being paid to social and emotional learning (SEL) skills and mindsets like recognizing and managing emotions, developing caring and concern for others, establishing positive relationships, making responsible decisions, and handling challenging situations constructively and ethically. These two arenas—brain development and SEL—are linked. While SEL skills are sometimes referred to as "non-cognitive" skills, they clearly involve thinking and emotions processed in the brain. We are learning that these skills are not fixed personality traits but rather people can and do learn SEL skills that help them cope in the real world and navigate life. These skills are not only shaped by and in our brains but these skills are now seen as even shaping how are brains develop and function. This issue brief explores the relevance of brain science to social and emotional learning, with a particular emphasis on how youth workers can apply this learning to youth development programs.

Research now demonstrates that the brain is an interconnected system, with different brain areas having distinct and specialized jobs. The *Handbook for Social and Emotional Learning* likens brain development to the development of a finely tuned and highly trained orchestra, where the different members "build off of other players' performances in ways that are precisely timed, highly synchronous, and carefully coordinated. Extending this analogy, the types of compositions that this orchestra plays… can be seen as a manifestation of the strength of connections among brain areas that are built over time by experience" (Blair & Raver, 2015, p. 66). This shaping of the brain is critical to our functioning and underlies our ways of being (see the issue brief on the Ways of Being model). So how can we use brain science to inform how we think about and support SEL skill development in youth programs? How can the experiences we offer in these programs help shape youth's brains? What kind of professional and personal development do youth workers themselves need to role model and cultivate these skills?

Learning & the Brain Conference

Learning & the Brain brings neuroscientists and educators together to explore new research on the brain and learning and its implications for education. In February, 2014 we had the opportunity to attend the 37th Learning and the Brain Conference in San Francisco, California. The theme of the conference was *Teaching Self-Aware Minds: Using Brain Science to Boost Social and Emotional Skills*. Throughout the three-day conference, distinguished experts from across the United States shared the latest research on neuroscience, social and emotional learning and skill building.

In this brief we focus on four takeaway themes that matter: the social context of learning, the value of focusing, the power of mindfulness meditation, and the development of willpower. This issue brief provides an overview of each area and suggests practical implications for youth development practice.

THE SOCIAL CONTEXT OF LEARNING

In his presentation at the conference, Dr. Cozolino (2014) stressed that the brain is a social organ that is not static, but instead continually adapts throughout the lifespan. The people around us, and the experiences we have with them, shape our brain in powerful ways. Our brains are constantly evolving and our neural networks are re-mapping themselves through our interactions with each other.

Cozolino emphasized that the human brain has evolved to live in tribes. Tribal living involved small groups, cooperation, equality, cohesiveness and shared responsibility. An important mechanism that helps us connect with other people's brains are our "mirror neurons". Essentially, mirror neurons fire both when a person acts and when they observe someone else doing the same action, as though the observer himself were acting. For example, if we watch a disappointed child walking off the field after a loss in a game, we feel that emotion as well—our brain makes a model of that emotion. This mechanism in our brain is the basis for emotional attunement and empathy (Cozolino, 2013).

It is also important to note that our relationships trigger neuroplasticity and learning. Positive relationships trigger our brain chemistry to allow it to be more plastic and enable us to learn more easily, whereas traumatic experiences negatively alter the brain and can shut down learning (Cozolino, 2014). In youth development where a high priority is placed on building relationships, this investment can result in young people who are physiologically better able to learn. Finally, during adolescence, there is an intrinsic shift toward the primacy of peers and an intense awareness of social dynamics, which was evolutionarily necessary to transition to being an adult in societies where understanding social networks was essential for survival (Lieberman, 2014). These brain mechanisms influence our social relationships and our social skills also affect our relationships as well as our brain's development.

Implications for Youth Development Practice

- Consciously cultivate what Cozolino calls a "tribal environment" through the use of small groups, cooperative learning, cultivating attachment, encouraging play and storytelling, fostering equality and democratic participation, and making it a safe space for vulnerability and uncertainty.
- When we work with young people, we cannot ask them to leave their fundamental needs at the door. We need to create spaces for them to bring their whole selves and needs into the room (Lieberman, 2014).
- One of the best ways to promote learning is to ask someone to learn something like they are going to have to teach it to someone else--this engages the social motivation to learn and the related social networks in the brain (Lieberman, 2014).

- As a youth development professional, seek out opportunities to participate in healthy tribal environments. Identify mentors who can both serve as a coach and can offer constructive feedback about how to create a cooperative youth program space.
- Recognize that our emotions and our observations of others are processed in our brains and shape which pathways are strengthened and which fade away or are pruned. Our youth development programs create experiences everyday where these processes occur and can be reflected on and integrated into our identity and our other ways of being.

THE VALUE OF FOCUSING

According to Dr. Taylor (2014), a researcher who spoke about the impact of technology on the development of children, "focusing" is the gateway to *all* thinking including perception, memory, language, reasoning, problem solving, and decision making. One of the greatest obstacles preventing young people (and adults) from effectively focusing today is multitasking. Taylor offered this analogy: whereas intentional focusing is more like scuba diving, where one goes deep and is in the moment, multitasking is like jet skiing, or going fast at the surface. But Taylor stressed that multitasking is a myth; the human brain is really a single-core processor. Although many of us think we are good "multitaskers" and it is a sought after skill in our society, multitasking is really just spreading our ability to single-task across a variety of tasks, which makes the completion of any one task more difficult.

According to Dr. Taylor (2014), we need to teach young people how to single-task. When we single-task, we are focused on one specific activity at a time, giving our entire attention and energy to the task at hand. This allows us to be more efficient in our work, decreases our stress levels, and actually improves our time management. This sort of focus is connected to the skill of "mindfulness" noted below, which is an active and open attention to the present or task at hand. Continuing to buy into the myth of multitasking perpetuates a whole host of problems in our society. It maintains high-stress environments, continues a lower level of efficiency and effectiveness in our work, keeps us from reaching our potential, and sustains dangerous behaviors like texting and driving because we believe we can multitask.

Implications for Youth Development Practice

- Practice focusing in order to become more efficient in our own work. Model this skill for young people and encourage them to more effectively utilize their time and energy while decreasing their stress level.
- Focusing allows one to see more of the complexity in life and work at integrating these elements into our actions and decisions. Focusing does not mean simplifying so much as it means reducing distractions.
- Be intentional in youth programming to create opportunities for young people to practice single-tasking and see the benefits for themselves. One strategy would be to utilize the 5 senses to build mindfulness into programming. This could include stations for youth to practice mindful eating, mindful smelling, mindful seeing, mindful hearing and mindful touch.

THE POWER OF MINDFULNESS MEDITATION

Mindfulness meditation is an intentional, non-judgmental and accepting focus of attention to one's thoughts, emotions and sensations occurring in the present moment. It is one key discovery on how to change the brain, because it increases the density in areas of the brain associated with memory, learning, awareness and compassion (Beaudoin, 2014). When an individual is successfully able to practice mindfulness meditation, they are better able to disconnect experiences from the associated emotions, which can then facilitate a more mindful and less reactive response to the situation at hand.

Mindfulness meditation is good for the mental and emotional wellbeing of individuals. For those struggling with memory, learning, awareness, or depression, meditation, and in particular mindfulness meditation, may be a powerful therapeutic strategy to overcome these challenges.

Implications for Youth Development Practice

- If you do not have experience with mindfulness practices, take a class or read to learn a simple strategy like Mindfulness Based Stress Reduction (Kabat-Zinn, 2012). Adults seeking to incorporate these practices into their youth work must first experience them and practice integrating them into their own lives.
- Find ways to incorporate even 5 minutes a day of mindfulness meditation or mindful practices into youth work; it can have profound and powerful positive impacts in the brains of both youth and the adults who work with them.
- Build in mindfulness to the ways you debrief and reflect on experiences. Help youth develop positive and reduce negative "internal chatter".

WILLPOWER

During her keynote address, Dr. McGonigal (2014) suggested we have two selves, controlled by two different systems in the brain, which are constantly in competition with one another. The "self" we are at any given moment depends on which system is dominant and/or currently working.

First, there is the "impulsive self" that wants immediate gratification, resists the hard challenges that arise in life, and doesn't consider the consequences of our actions. This is the self that chooses a donut for breakfast over a healthier option. It is the self that receives a text from a friend and decides to go to a movie rather than stay home and do homework that is due the next day. It is the self that blows up at a friend when an argument arises rather than take the time to cool off and then address this issue. This is the self that correlates with the amygdala, the part of the brain that processes fear, emotion, and can trigger stress reactions. Humans are born with a fully-developed amygdala (Cozolino, 2013).

Second, there is the contrasting part of us that utilizes *self-control*, which helps us identify with our "higher-self"; it invests in our future selves, persists when things get tough, and considers the consequences of our actions. This is the self that chooses to go for a walk over watching TV. It is the self that takes a rain check on a friend's invitation to a movie when there is an assignment due the next day. It is the self that recognizes when we are getting angry and engages in deep breathing to calm our body and mind and allows us to hear someone out. This self is shaped by the prefrontal cortex, the part of our brain that is responsible for executive function and is active in organization, planning, decision-making and behavior regulation. It is also the last part of the brain to fully develop, reaching full maturity in the mid-20s (McGonigal, 2014).

The key to improving our self-control is to engage our prefrontal cortex. In order to develop strong willpower, the prefrontal cortex must be functioning and connected to the other parts of the brain (McGonigal, 2014). Willpower or self-management is a basic human process that everyone has and can cultivate. In addition, it is a *state* and not a fixed trait. Willpower is dependent on environmental factors that push us to one of our two competing selves or which part of our brain is dominant. The model of willpower we believe in, and the way that we talk about it, shapes our perspective and reality. These are often called mindsets.

One of the unexpected lessons from brain science is the intensely interconnected relationship of the mind, body, and emotions, all of which are connected through the biochemistry of the body. Our body influences the state of our brain and which system (impulse or self-control) is activated. For instance, impulse control directly correlates to sleep—teens with less sleep are more susceptible to risky choices.

Movement is another way our body influences our brain. The primary area of the brain to benefit from exercise is the prefrontal cortex, which is the seat of executive function and emotional regulation. When we are physically active, even for 5 minutes, our brains shift toward allowing us to resist temptation, increase willpower, decrease stress, increase mood, enhance focus and boosts our self-confidence. As youth work practitioners, we can harness this knowledge to design programs that engage both the mind and the body.

Implications for Youth Development Practice

- Talk with young people about getting enough sleep, as it is critical to their ability to control impulses. Research now shows that teens in particular are "wired" to stay up later, so early school/program start times do not allow enough time to get the sleep they need (Wahlstrom, 2002). Although getting 7-9 hours of sleep per night is ideal, there are also significant benefits to taking a power nap, lasting between 15-30 minutes, for the improvement of willpower and impulse control.
- Self-compassion messages are something we can give not only ourselves, but provide to others as well. How we handle setbacks, failure and disappointment leaks out to how we interact with others. Likewise, willpower is contagious and our mindset about willpower is contagious (McGonigal, 2014). Therefore, like with most things we want to teach young people, we must model it first ourselves.
- Intentionally build brief periods of physical games, laughter, play, and activity into programs in order to support more fully engaged brains.

CONCLUSION

Recent discoveries in research on learning and the brain is reshaping the opportunities we have as youth workers, teachers, parents, coaches and others that interact with young people to engage with youth in positive and meaningful ways. Through understanding and capitalizing on the importance of the social context of learning; teaching youth to focus through single-tasking; tapping in to the power of mindfulness meditation; and providing opportunities for youth to practice and develop willpower, we have the ability to teach important SEL skills. These skills, such as reflection, empathy, focused-attention and controlling impulses, help young people thrive in their environments and reach their full potential.

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