



EXPEDITIONARY LEARNING

Middle School Brains Need Crew

The Challenges of Adolescence

Current research into the growth and development of the adolescent brain, coupled with alarming statistics about teen suicide and depression, support the pivotal need for crew structures within middle schools. Within crew, students learn and practice appropriate social interactions, build relationships with other adolescents and adults, generate skills of agency and self-reliance, and engage in activities and games that bring fun into their daily lives. Well-planned crew time within an adolescent's school day offers opportunities for metacognition and instruction on how the brain learns, which thereby supports that student's success in other classes. It is a moment when each child is named, invited in and heard.

During crew, learners practice and develop relational and performance character habits. Building positive relationships and developing skills that result in future social and workplace success requires practice to achieve competence. *Relational character skills* (such as kindness, honesty, and integrity) are essential for positive collaboration, ethical interaction, appropriate participation, and personal responsibility for actions. Teachers attend to this complex work by intentionally planning instruction toward a set of defined skills. *Performance character skills* are those that build habits of scholarship necessary for success in the academic world. Examples include organization, perseverance and craftsmanship. Individual schools identify these or other traits within their Codes of Conduct and specifically instruct to them. Through metacognitive reflection and goal-setting, students monitor their own growth and skill development in both relational and performance character.

These are the hallmarks of adolescence:

- lack of impulse control
- difficulty holding and retrieving information or strategies stored in long-term memory
- high propensity to take risks
- emotional reinforcement generated by success with high risks
- increased concern for what others may think
- increased social anxiety in general
- low tolerance for frustration
- difficulty interpreting facial expressions or tones of voice
- lack of executive functioning (i.e., the abilities to organize, plan and manage time)
- less ability to understand or anticipate the consequences of one's actions (Von Stultz, 2010).

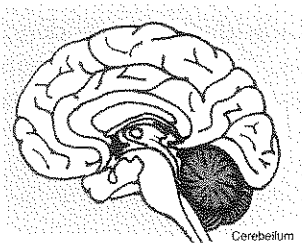
This is not news! Parents and teachers have long recognized and named these behaviors as part of a middle school child. For decades, these behaviors have been attributed to hormonal changes within the adolescent body. Since 2002, neuroscientists have been conducting brain-based research that explains and elaborates on the realities of an adolescent's fragile internal ecosystem. Furthermore, if one understands the brain's changes during adolescence, a strong case can be made for the need for crew in middle school.

Brain Science

Not too long ago, scientists considered that maximal brain growth occurred from birth to three years of age. The physical structure of the brain is indeed 95% developed by the age of six and does not grow much in size after that. However, the elasticity and plasticity of the brain continue to develop even into early adulthood. Furthermore, since 2002, neuroscientists have identified a second growth spurt between the ages of 11-13 years. They are finding that the adolescent brain undergoes tremendous changes: thousands of neural connections are engaged, and just as many, if not more, disconnect. "The teenage brain is in flux, maddening and muddled. And that's how it's supposed to be." (Strauch, 2008, p.8)

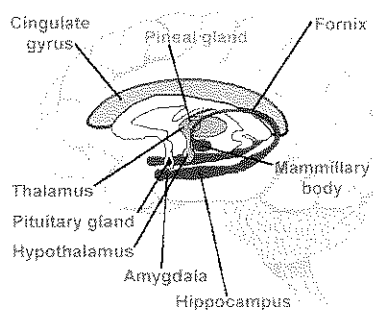
It is during these adolescent years that the basic structure of the brain undergoes remodeling in the areas of language, intuition, logic and impulsivity. This second growth spurt is followed immediately by a pruning and reorganizing of neural pathways. It is a "use it or lose it" time of brain development. During adolescence, young teens should experience increased stimulation and multiple exposures to events that can cement this exuberance of glial activity and establish strong neural pathways be they in sports, music, academics, art or auto mechanics. Kids can grow by leaps and bounds as long as they repeatedly experience a variety of learning activities, and learn from experts who can offer the necessary level of training (Frontline, 2002).

A brief tour through the chronology of brain development will guide understanding of the struggles adolescents face. The brain develops (or grows) from the bottom up and from the inside out.



That is to say that the physiological centers of the brain (**the cerebellum**), those that control heart rate, respiratory rate and basic functioning - located at the base of the brain - develop first. The cerebellum is associated with regulation and coordination of movement, posture, and balance.

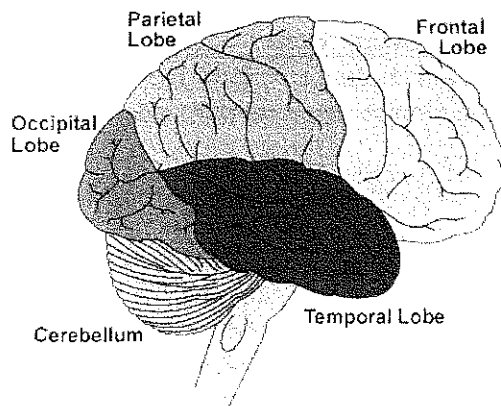
Once the child has basic body functioning and coordination in place, the **Limbic System**, the emotional center located inside the brain begins developing. Structural changes in the limbic system occur long into adolescence. The Limbic System is involved in long-term memory and in emotional development. For this reason it is understandable that kids' memories are strongest around emotionally laden situations.



The Limbic System

Because the Limbic System undergoes major reconstruction during early adolescence, young teens oftentimes lack the ability to manage their emotions. They misinterpret normal visual cues such as facial expressions. The inner core of the brain continues to develop and change throughout adolescence right up to threshold of adulthood, around 18 years of age.

It isn't until the emotional pathways inside the brain have established systems of development that the outside and topsides of the brain develop: the cognitive centers. (Stultz). The **Corpus Callosum** of the brain is the structure that allows both sides of the brain to talk with one another. It is also involved with creative thinking and problem solving. Since it is the outside white matter of the brain, imagine a thin covering over the surface of the entire brain. This part of the brain is not fully developed until late adolescence.



The gray matter of the **Parietal Lobe** involved in processing sensory information and establishing spatial relationships develops early in life and then actually begins to decrease after about 11 years of age, whereas the **Temporal Lobe** the center for memory and the critical processing of visual and auditory information continues to increase production of gray matter well into late adolescence. At long last, well into adolescence, the **Frontal Lobe**, the brain's center for decision-making, planning, impulse control and memory begins developing and continues developing well into the early 20's and even into adulthood.

The implications of current research on the teenage brain are dramatic for parents as well as middle school teachers. Even through these oftentimes mature-looking beings look like they should "know better," "behave correctly", and manage and plan their time, brain research offers solid rationale why these expectations are most unreasonable. If indeed a child between the ages of 11 and 15 is functioning well in all those domains, it is that child who is the anomaly. Neuroscientists who study the brain will tell you: give these learners time and multiple opportunities to learn and practice executive functioning, planning, reasoning and impulse control.

The Brain on Crew

What is it about daily crew interactions that are well matched to the middle school learner? What distinguishes the middle school child from a fifth grader or a high school student? Most parents of 11-13 year olds are bewildered by the transformations in the child who's lived in their home for ten or more years. The crew leader is a pivotal link between home and school. Understanding the changes occurring in an adolescent's brain helps the middle school crew leader address parental concerns about the changes they notice. Parents unfamiliar with living with adolescents may notice a variety of behaviors that they find alarming:

"She seems to have lost interest in anything she used to do: drawing, playing with her younger sister, reading. She just sits in her room listening to music and she sleeps a lot!"

"I tell him time and time again, but does he remember from one moment to the next? His brain is like a sieve!"

"One minute she's laughing and we're enjoying quality time and the next she's down in the dumps and runs to her room slamming the door behind her."

"It's crazy! You should see the tricks he can do on his board. And he goes so fast! I worry, but I know he believes he is safe and can take care of any situation."

"We talk every night about what he needs at school, but I still find myself at Staples the night before buying stuff to mount his work. I just don't understand why he cannot stay organized. He's a smart kid!"

Enter Crew, the academic structure that embeds the kinds of activities the adolescent brain needs to practice specifically during this time of its life. In conferences with parents, Crew leaders help concerned parents understand the "normalcy" of behavior changes. Daily Crew meetings support their child through this transition to adulthood by providing opportunities for adolescents to improve both relational and performance character.

Crew builds relational character:

- Crew provides a safe place for each child to make eye contact and engage socially with other learners daily through greetings, activities and problem-solving games, and through personal sharing.
- Crew leaders explicitly teach conflict resolution, problem-solving and personal communication skills.
- Crew members hold each other accountable for high standards by enforcing norms of respectful behavior within the circle. When a student misbehaves, the leader and the crew work with that child to articulate the causes of the misbehavior or conflict and clearly communicate logical consequences for the violation.
- Crew can be the time when students meet within gender groups to discuss what is happening to their radically changing bodies and minds.

Crew also frames and teaches habits of scholarship that result in improved performance character:

- Crew leaders are the adult advocates for each of their crew members. Leaders ensure that no one "slips through the cracks" of middle school by checking daily with each learner with regard to academic progress.
- Within crew, learners review and reflect on academic and character progress, set personal learning goals and establish action plans that will result in further growth. Through these lessons, learners practice perseverance and develop a growth mindset, garnering opportunities to push through frustration.
- It is within crew where teachers intentionally instruct Habits of Scholarship separately from academic content.
- Crew provides the forum for celebrations, honorings and appreciations within the student group.
- Crew is oftentimes used to prepare for student-led conferences and to build portfolios.
- Crew provides an alternative and safe setting to practice literacy and numeracy skills.
- Some schools integrate adventure and service learning experiences within crew.

Daily. Ideally crew happens daily. Every day that middle school brain which struggles with executive functioning, that hides or avoids social engagement, that seeks approval from peers, that lacks tolerance for frustration, has a required time to overcome those brain-based challenges. Just as the process of growth and development within the brain is a slow one that takes time to develop fully. The support of a consistent,

familiar routine in a safe environment allows each learner to individuate and learn how to achieve the best that is within him or her.

Adolescence is a time when kids need other kids, as well as the careful mentoring and guidance of trusted adults who are not Mom or Dad, but they still need the careful mentoring and guidance of trusted adults. The well-planned daily crew gatherings can oftentimes be the stimulus that motivates a child from the luxury of his bed in the morning to the adventures in learning that await him at school.

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