Study Guide

The Power of the Adolescent Brain

Chapter 1: The Amazing Adolescent Brain

1. Discuss what your previous understanding of the nature of the adolescent brain was before you read the material in this chapter. Had you been following articles in the news about brain research in the teen years? Were you surprised to learn that so much new brain development occurs during adolescence?

1. By the age of 15 or 16, teens can reason and make good decisions as competently as adults, but not when with peers or under conditions of emotional arousal or social pressure. Share some anecdotes from your own experience with adolescents when they had been engaged in ‘’cold cognition’’ and ‘’hot cognition.’’ What sorts of classroom experiences might enable your own students to develop their decision-making and reasoning skills under conditions of ‘’hot cognition.’’
2. How would adolescence be different if the limbic system and frontal cortex developed at the same time during the start of puberty? What would be different about the teen years if the frontal cortex developed at twelve and the limbic system at eighteen or twenty?
3. Teenagers are wired differently than children or adults are when it comes to being motivated by rewards. What types of rewards do you use in motivating the students in your classroom? Which rewards seem to have the least/greatest motivational impact on them? What other rewards could be devised to elicit higher levels of engagement in your classroom or school?
4. How convinced are you that the traits typical of adolescents (risk-taking, peer affiliation, emotional arousal etc.) were advantageous during prehistoric times? What other reasons can you think of to account for why the genes for why the above traits are still in the gene pool.

Chapter 2: The Miracle of Adolescent Neuroplasticity

1. Discuss the concept of neuroplasticity or the ability of the brain to rewire itself in response to environmental influences. Share examples from your reading or personal experience where stimuli from the outside world has had a big impact on an individual’s brain functioning (e.g. in recovering from a brain injury or accident, in overcoming a learning challenge, in learning a new language etc.). Suggested reading: Norman Doidge, *The Brain That Changes Itself*.
2. Pruning, myelination, and neurogenesis are the three primary dynamic transformations that occur during brain development during childhood and adolescent development. Write about what you believe is the relative importance of each of these processes in affecting adolescent behavior. How does each one facilitate or impede neuroplasticity in adolescence?
3. What are the pluses and minuses of neuroplasticity, especially for teens growing up at this particular time in contemporary society?
4. Does reading about the specific dangers that are out there waiting for the vulnerable teenage brain (e.g. traffic accidents, drug abuse, suicide etc.) give you a greater sense of urgency in wanting to implement changes in the middle or high school classroom that might ameliorate these conditions? Or alternatively, do you feel that any changes in the school climate will have a negligible impact on these preventing these hazards? On a scale of one to ten gauge your own sense of agency and power to affect these issues (1 = complete powerlessness, 10 = supreme confidence).
5. How would you evaluate the engagement of the students in your middle or high school classroom or school (on a scale of 1 to 100)? What are the best behavioral indicators that high engagement is present? What are the best behavioral indicators that students are not engaged in the learning process?

Chapter 3: Opportunities to Choose

1. What current strategies are you using in your classroom or school to provide students with choices with regard to their learning? How would you evaluate the effectiveness of each strategy?
2. Share examples of statements that students in your classroom or at your school have made in the course of the school day that suggest either that they feel they have a powerful voice in their learning or little to no voice at all.
3. What can you learn from other teachers at your school about providing students with choices during the school day?
4. Implement one or more of the strategies suggested in this chapter (e.g. polling, passion projects, electives, independent study etc.), and evaluate its effectiveness on student engagement and academic performance.

Chapter 4: Self-Awareness Activities

1. Discuss Common Core architect David Coleman’s famous statement about students: ‘’no one gives a sh\*t about what you think or feel’’ in light of neuroscience research on the adolescent brain and developmental research on the importance of identity construction during the teen years.
2. Write down anecdotes from your classroom or school experience that show evidence of one or more of your students actively engaging with issues of identity and self-awareness.

1. What have you done in your classroom or school to provide students with the opportunity to increase their own self-awareness and/or explore possible ‘’selves’’ or identities in an educational context?
2. Choose one or more of the strategies described in this chapter to implement in your classroom or school, and then evaluate its effectiveness in enhancing self-awareness, promoting engagement, and improving academic performance.

Chapter 5: Peer Learning Connections

1. Do a time-study of the percentage of classroom time or the school day that your students are working on their own versus the time they spend interacting with each other in a learning activity or experience. Based on your findings, what are the implications for making changes in the amount of peer interaction in your classroom or school in the future?
2. Studies suggests that the teenage brain is wired to take more risks when in the presence of their peers. How could you take this research and apply it to your classroom or school in such a way that the risks would be positive and academic?
3. Select one or more of the strategies listed in this chapter and implement it over a period of weeks or months, and then evaluate its effectiveness in terms of student engagement and achievement.
4. Visit one or more schools in your area that make collaborative learning, small learning communities, peer teaching and/or peer assessment important priorities in their programs. Observe the classrooms where these interventions take place and then write down your ‘’take aways’’ to bring back to your own school.

Chapter 6: Affective Learning

1. Are students in your classroom or school able to express human emotions (both negative and positive) in a safe and supportive context, or do feelings erupt in unpredictable and out-of-control ways, or alternatively, are emotions largely suppressed in the classroom? Based upon your answer, discuss possible interventions to allow for optimal expression of students’ emotions.
2. What existing strategies or activities do you use in your classroom or school that provide students with opportunities to express feelings within an academic context?

1. What barriers exist, if any, that prevent a greater use of affective learning strategies in your classroom or school? How could these obstacles be overcome?
2. How would you gauge the level of emotional rapport between you and your students? Are you the sort of teacher that students will talk about outside the classroom as being likeable, approachable, and/or empathetic, or alternatively as being reserved, aloof, and judgmental? If the latter, what steps could you take to remedy the situation?
3. Choose one or more of the strategies listed in this chapter and implement it over a sustained period of time. Then evaluate the effectiveness of the strategy in increasing student engagement and promoting academic achievement.

Chapter 7: Learning through the Body

1. To what extent do students in your school have opportunities to engage in physical activity through a strong physical education program, recess breaks, exercise breaks during class, and/or learning strategies that involve movement? Which of these components of bodily-kinesthetic experience need to be strengthened? How can this best be accomplished?
2. Do an action research project where you have students sit for an extended period of time and then do a timed test (that won’t count toward grades). Then repeat the experiment, only this time, precede the test with some vigorous physical activity (calithentics, walking or running outdoors, stretching, or a physical game). What do the results tell you about the importance of physical exercise in learning?
3. Visit one or more schools that have a model physical education program integrated throughout the school day. What can you learn about making changes in your school’s own approach to integrating exercise into the learning process?
4. Choose one or more strategies described in this chapter to implement in your classroom or school. Then evaluate the effectiveness of the strategy in increasing student attention and engagement and improving academic performance.

Chapter 8: Metacognitive Strategies

1. How would you gauge your own teaching style in terms of (on one end of the spectrum) providing students mainly with content that is specific to your field of expertise, or (on the other end of the spectrum) asking students questions to make them think, challenging received opinion, and engaging students in critical thinking? (1 = content focused; 10 = metacognition focused). What steps could you take to bring your teaching style closer to a 10?
2. Choose one or more of the strategies described in this chapter to implement in your classroom or school. Then evaluate the results in terms of its effectiveness in improving student critical thinking processes, problem-solving abilities, and/or cognitive flexibility.
3. Create a mini-unit or semester-long theme that teaches students about how their brain works, adapting material from this book. Evaluate the results in terms of changed student behaviors, self-statements, and lowered stress levels.
4. Discuss anecdotal experiences where students in your classroom or school engaged in active exploration (among themselves or with teachers) of existential themes such as the purpose of life, the origins of the universe, the reality of magic or mysticism, the importance of the true, the good, and the beautiful, and/or other big philosophical, spiritual, or moral themes. What do these anecdotes tell you about the inner worlds of adolescents?

Chapter 9: Expressive Arts

1. What are the opportunities for students in your classroom or school to express themselves creatively? What factors prevent a more frequent occurrence of such experiences? How can these obstacles be surmounted?
2. Invite the art, music, drama, and/or photography teachers at your school to work with the academic teachers to create lesson plans that integrate the arts into the core curriculum. Discuss other ways in which the arts faculty can help bring the arts more fully into the whole school day.

1. Create a ‘’Celebration of the Creative Spirit’’ week in your classroom or school where students have the opportunity to present creative performances or exhibits that they have been working on over a period of weeks or months (art work, dance performances, dramatic presentations, music recitals etc.). After the event, discuss its significance in motivating students to develop their full potential.
2. Visit an arts magnet school in your community and discuss with your fellow teachers how you can bring some of the features of that school into your own schoolwide program.
3. Choose one or more of the strategies or activities described in this chapter to implement in your classroom or school, and evaluate its effectiveness in terms of promoting student creativity, increasing student engagement, and lowering student and teacher stress levels.

Chapter 10: Real World Experiences

1. Do a time-study of how long students on average in your school spend learning in a classroom versus learning beyond the school walls per day. What are the implications of the results in terms of the need for more out-of-school learning?
2. Contact local businesses in your community and arrange to have students take part in one or more types of real world learning including: internships, job shadowing, mentorships, apprenticeships, and/or other school-business partnerships.
3. Visit a school in your community that engages a large proportion of its student body in out-of-school learning experiences. Discover which features of the school’s external programs can most easily and effectively be imported into your own school’s structure.
4. Many older teachers have gone through a historical period when there were underlying biases regarding the value of ‘’academic learning’’ versus ‘’vocational education.’’ Discuss whether these biases are still relevant in today’s complex and multi-faceted world where real world skills are in high demand.