Adolescent Cognitive Development: How to Teach Adolescents

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Adolescents are often expected to have the capacity for adult thinking and behaviors such as self-regulation, rational thought and decision making. However, adolescence is a crucial period of brain development leading to emotional, cognitive, and behavioral changes. Because of these developmental changes, there are numerous negative assumptions held by adults about adolescents. It is important to understand that adolescents’ brains are not fully developed at this age. Educators need to be aware of adolescent development so they can better assist them in the classroom and tailor their instruction to their students’ needs.

Self-Regulation

The Prefrontal Cortex controls:
1. Risk taking and decision making
2. Cognitive Control Network:
   - Planning, thinking ahead, and self-regulation
3. Reward Sensitivity
4. D.A.R.E Program and Why it is Not Effective

Study for Self-Regulation Around the World
Laurence Steinberg (2014) created a study to assess if self-regulation was the same worldwide. The study was designed to see if self-regulation was the same earlier or later depending on how an adolescent was raised. Steinberg compared adolescents in America to adolescents in Western Europe.

Findings:
- Same patterns of sensation seeking and self-regulation
- Same pattern of adolescents participating in risky behavior
- All develop self-regulation around the same time

It can be concluded that does not matter where you grow up, self-regulation looks the same across the world. An adolescent’s brain develops the same, even if they were raised differently. They all face similar struggles of fitting in with peers or becoming motivated to participate in activities that may be risky.

Prefrontal Cortex and Dopamine

During Adolescence, there is a natural increase in dopamine which is the “feel good transmitter.”

The natural increase in dopamine has these effects on an Adolescent:
- Make them feel satisfied when they do something risky
- Make a risky decision feel like a reward, which leads them to participate in more risk.

The development of the Prefrontal Cortex happens during the second phase of development for Adolescents and is the last part of the brain to mature. So, Adolescents are operating with an underdeveloped prefrontal cortex which leads them to make poor decisions related to risk taking.

Some Negative Stigmas that Surround Adolescents

- Adolescents do not understand consequences
- Adolescents fall into peer pressure which leads them to make poor decisions
- Adolescents do not know right from wrong
- Adolescents

D.A.R.E Program and Why it is Not Effective

Bring Abuse Resistance Education program (D.A.R.E) was designed to stop substance abuse in teenagers by showing them alternatives and the consequences of using drugs. However, the reasons it was not effective are:

- Adolescence is a time of experimenting with new things and focusing on rewards of a behavior because it is part of development so it would happen either way
- Adolescents are aware of the potential consequences that come with risky behavior
- Adolescents have an underdeveloped prefrontal cortex, so one can expect them to make risky decisions

Risk Taking & Decision Making

Risk taking and decision making is a result of the competition between two systems in the brain.

1. Socioemotional System:
   - Sensitivity to social and emotional stimuli such as risk taking with peers
   - Focused on rewards and how it makes them feel

2. Cognitive Control Network:
   - Planning, thinking ahead, and self-regulation
   - Decision making

Adolescents decision making skills are not fully developed during this time, so they do not think situations out fully. Some factors that contribute to Adolescent decision making include:

- Undeveloped brain
- Not focused on the consequences
- Having strong emotions

The Peer Effect & Reward Sensitivity

For Adolescents, the presence of peers activates the reward part of the brain which releases dopamine.

Why it should not be referenced as “peer pressure”:
- Adolescents do not participate in risky behavior because they are pressured by peers
- Adolescents are focused on the reward an Adolescent receives when doing something risky
- Motivated by the rewards of the peers present and NOT because adolescents peers are telling them to do something

Strategies to Help Guide Adolescent Development in the Classroom

1. Set Realistic Expectations for Students
   - Teach Adolescents appropriate ways to express or manage their anger within the classroom
   - Introduce social and emotional learning (SEL), which is used to educate Adolescents on how to manage stress, their feelings, and consider how someone else may feel before acting out

2. Implement a Reward System
   - Praise the students who do the work, which can influence more students to do the same
   - Use a routine for Adolescents
   - Demonstrate how an Adolescent can interact with peers

3. Create a Learning Environment that is Receptive to the Needs of Adolescent Development
   - Challenge students throughout the day to keep them involved in the lesson
   - Provides structure to each individual learning
   - An example of this in the classroom would be giving students choices, respecting their opinions, creating lessons that are relevant to their lives, monitoring and adjusting activity to fit the needs of the students, and emotional supporting them if needed
   - Treat students with respect
   - Participate in group work so students can interact with one another in the classroom

Factors that contribute to Chronic Stress:
- Poverty and economic stress
- Where an Adolescent attends school
- The relationship an Adolescent has with their parents or guardians
- Community Violence
- Trauma
- Malnutrition
- Abuse and Neglect

Chronic Stress

Adolescents who live in high-risk situations or have had adverse experiences may have difficulty with their self-regulation, which will impact their decision making and overall development.

Impacts of Chronic Stress on an Adolescents development:
- Poor physical and emotional health
- Development of disorders like anxiety, depression, schizophrenia, and drug abuse

The study on mice shows that Adolescents are more likely to take risks when their peers are present rather than around adults.

Peers give Adolescents that reward feeling when they do something risky.