

Science of Adolescent Learning Consensus Statements

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In November 2017, the Alliance for Excellent Education (All4Ed) gathered researchers, practitioners, and policy experts to examine advances in research and how recent findings from the science of adolescent learning (SAL) can inform high school improvement strategies under the Every Student Succeeds Act. After the event, the researchers developed a set of consensus statements about adolescent learning and development research. The statements listed below, along with an accompanying series of reports, provide the foundation for All4Ed's SAL initiative. To learn more, visit all4ed.org/SAL.

All4Ed's SAL Research Consensus Statements

1. In addition to body changes, the onset of puberty may trigger a second period of brain plasticity, increasing both the opportunity and vulnerability inherent during adolescence. Certain life conditions may cause the process of puberty to occur earlier or later, meaning that physical, cognitive, social-emotional, and other changes associated with puberty can begin at various ages.
2. Adolescents are in a stage of development during which the brain becomes more specialized and efficient. Learning experiences and environmental influences play key roles in this process. Learning and development are inextricably intertwined; these dual processes shape patterns of neural connections during adolescence.
3. As the brain becomes more interconnected during adolescence, young people are increasingly able to engage in adult levels of complex cognition, such as abstract reasoning, future thinking, and social cognition.
4. The ability to form memories and reflect on the accuracy of those memories continues to improve during adolescence. Adolescents become better able to assess their own learning, allowing for more time for additional information gathering and review.
5. Adolescents face an increased risk, compared to adults and younger children, for certain issues related to mental health, behavioral health, alcohol and substance use, accidents, trauma, sexual health, and nutrition due to physical, cognitive, and emotional changes they experience.
6. During adolescence, biological and environmental changes affect motivation and mindset. Because adolescents have an increased sensitivity to social evaluation, praising their learning process and successful strategies, not effort alone, can support development of a positive mindset and motivate them to learn.
7. Adolescents are more sensitive to some types of rewards, such as social recognition, than adults and younger children. Adolescents are more likely to engage in both positive and negative forms of risk taking, especially if peers support that behavior.
8. The transition from childhood into adolescence is associated with an increased sensitivity to social evaluation, including feelings of belonging, acceptance, admiration, and respect.
9. Peer relationships strongly influence adolescents, even more so than younger children, in ways that contribute to opportunities as well as vulnerabilities.
10. Compared to younger children, adolescents are able to spend more time with peers without adult supervision. However, support, communication of consistent expectations, and monitoring of activities and emotional functioning by adults are essential as adolescents become more independent.
11. Culture constructs the nature of learning environments and ways adolescents experience them including their values, motivations, and beliefs related to learning.
12. Adolescents seek learning environments that are consistent with and meaningful within the social and cultural contexts of their lives.



13. Digital technologies, such as computers, the internet, social media, and smart phones, dramatically have changed the way individuals learn, play, and interact with each other. Their impacts may be greatest for adolescents who are young enough to embrace novelty and old enough to master the technologies.
14. Adolescence is marked by significant biological shifts, resulting in heightened stress-induced hormonal responses. Stress is a major modulator of human learning and memory processes. As pressures around school, work, and relationships increase, adolescents experience greater stress.
15. In addition to physical, social, and emotional impacts that economic disadvantage has on adolescents, poverty and socioeconomic status are associated with a diverse set of neuroscientific structural and functional outcomes. Based on current evidence, the most sensitive systems are those related to executive functions, language, learning, and stress regulation.
16. Inequality, bias, and the persistence of structural discrimination constitute serious hazards to the positive development of all adolescents.
17. While adolescents still are developing self-regulatory systems, under some circumstances they make more rational choices with the similar mental capacity of adults. However, the expression of self-regulatory skills depends on context and learning opportunities.
18. For adolescents, social and emotional development involves exploring meaning and finding purpose; sometimes this development is at odds with institutional structures and expectations.
19. Adolescents are developing their own adult identity, trying to understand their roles and contributions in social contexts and communities. This identity development continues into adulthood, as the individual has more diverse experiences.
20. Adolescents seek opportunities for agency where they can decide how they spend their time and influence policies and practices of institutions that shape their lives.

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