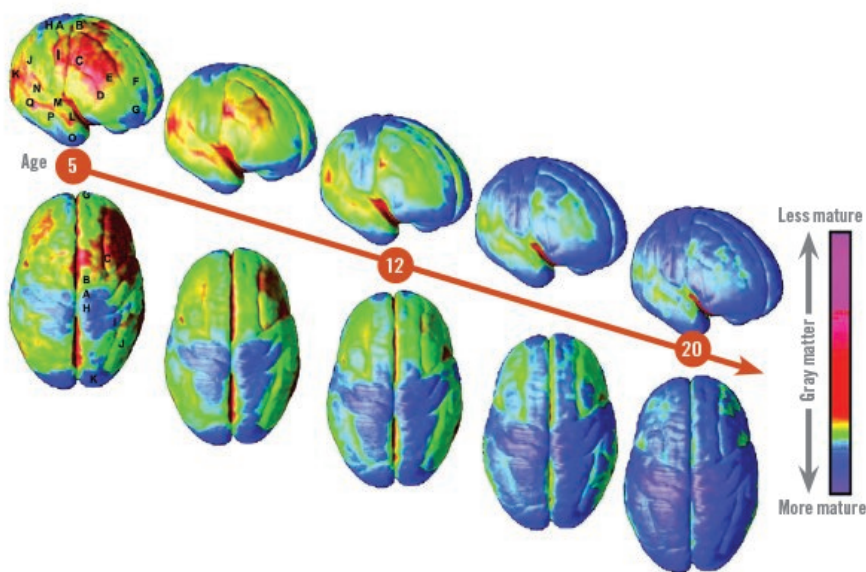


EDUCATION WEEK
Subscribe Now.
Complete, go-everywhere access.

The Teen Brain: How Schools Can Help Students Manage Emotions and Make Better Decisions



In this series of brain scans taken from age 5 through age 20, blue areas indicate more mature and efficient networks within the brain. In mid-to-late adolescence, the brain rapidly matures, beginning with spatial perception (center line visible from the top). The front areas associated with critical thinking and planning continue to develop through the teenage years to the early 20s, and the temporal lobe, located in the bottom curve and associated with learning and memory, is among the last areas to fully mature.
—Source: "Dynamic Mapping of Human Cortical Development During Childhood Through Early Adulthood," Proceedings of the National Academy of Sciences

Research highlights supportive strategies

By Sarah D. Sparks

October 9, 2018

Los Angeles

Adolescence tends to be seen by parents—and many teachers—with dread. Teenagers are likelier to engage in risky behaviors and disengage from school. But emerging cognitive and neuroscience research suggests ways schools can help leverage teens' strengths in this unique developmental period.

In symposia at International Mind, Brain, and Education Society research conference here last week, and a consensus report funded by the Alliance for Excellent Education released here, cognitive and neuroscientists called for educators to foster school cultures that better support adolescent development.

"For some reason, when we talk about brain development in adolescents, we talk about it like we're terrified: 'Oh my god, their grades in school are dropping, they're driving cars, this is so alarming,'" said Sarah Enos Watamura, an associate professor at the University of Denver who studies the effects of stress on learning and spoke at the conference. "But

Printer-Friendly

Email Article

Reprints

Comments

Tweet

Share 1.2K

EDUCATION WEEK
GROUP ONLINE ACCESS

REGISTER FREE EDUCATION WEEK

Get more stories and free e-newsletters!

Email

Password

Select your primary connection to education

- Keep me logged in
- Send me Education Week e-newsletters

REGISTER NOW

By clicking "Register" you are agreeing to the Terms of Service and Privacy Policy.

EDUCATION WEEK EVENTS

Gateways to STEM Education

FREE ONLINE EVENT OCT. 23, 1:00 P.M. EASTERN
REGISTER NOW.

The Role of Ed Tech and Professional Development in Driving Personalized Learning
SPONSOR WEBINAR OCT. 25, 2:00 P.M. EASTERN
REGISTER NOW.

Content Provided by: DreamBox Learning, PBS, and Education Week Research Center

Strategies to Accelerate Success for English-Language Learners
SPONSOR WEBINAR OCT. 31, 2:00 P.M. EASTERN
REGISTER NOW.

Content Provided by: Voyager Sopris Learning

Trauma-Informed Schools: From Awareness to Action
SPONSOR WEBINAR NOV. 1, 2:00 P.M. EASTERN
REGISTER NOW.

Content Provided by: 321insight

Why Technology Elevates Dual-Language Education
SPONSOR WEBINAR NOV. 6, 2:00 P.M. EASTERN
REGISTER NOW.

Content Provided by: Istation

MOST POPULAR STORIES

Viewed | Emailed | Recommended | Commented

1. [Math Scores Slide to a 20-Year Low on ACT](#)
2. ['I Want a Job and a Life': How Principals Find Balance in All-Consuming Work](#)
3. ['This Road Just Got a Lot Harder': Teachers'](#)

they're testing their limits, they're doing things for the first time. ... That's hard work, and they need a safe space to try out risks."

Adolescence, she said, is coming to be understood as a "second critical window" for developing skills to regulate emotions, making and evaluating decisions, and judging risk and reward. After years of childhood brain development, teenagers' brains focus on making strong connections.

"We need adolescents to hang out in this sensitive period and all that allows to develop ... versus rushing them through it," Watamura said.

A Different Trajectory

Throughout their lives, students get steadily better at inhibitory control—the ability to avoid distractions and stay focused amid changing situations. The prefrontal cortex, an area of the brain associated with attention, decisionmaking and self-control, develops rapidly in the mid-to-late teens. And teenagers are better than children and nearly as good as adults at focusing on unemotional tasks or situations.

But that pattern of development looks very different in emotionally charged situations.

In a series of studies discussed at the conference, Gregoire Borst, a professor of developmental psychology and neuroscience at the Paris Descartes University in France, found teenagers are significantly worse at avoiding emotional distractions than unemotional ones compared to either children or adults. However, teenagers who participated in computer-based training to improve their ability to avoid distractions for 15 minutes a day for five weeks showed significantly better attention and focus than students who had studied in a control group.

"What is surprising is that despite the fact that adolescence is a developmental period in which you find incredible improvement of inhibitory control ... you traditionally have no inhibitory control training during adolescence," Borst said.

Good Risks

Developmentally, research shows teenagers are more open to risky behavior, and taking risks releases more of the chemical dopamine in adolescents than in either children or adults. Studies from the Centers for Disease Control's Youth Risk Behavior Surveillance find that teaching students about the objective risks of things like drug use or unprotected sex **doesn't much lower their likelihood of doing them.**

But that doesn't mean that teenagers don't evaluate potential harm, just that they put a higher priority on social approval. Imaging studies show that until their late teens, young people do not develop a part of the brain that reduces stress during peer evaluation or social isolation. The immediate danger of classmates' teasing can seem more threatening than the health or legal consequences of taking drugs.

That's one reason David Yaeger, a developmental psychologist at the University of Texas at Austin, suspects that many **traditional anti-bullying programs** that work for elementary and middle school students become ineffective in 8th grade—and can do more harm than good in high school. In a separate 2015 meta-analysis of these programs, Yaeger and his colleagues found bullying often switches in secondary school from physical attacks to the less-visible rumors, isolation and social media attacks, and students looking to gain status among their peers are likely to engage in bullying, even of friends. Programs that depict bullies as physically aggressive and socially inept stereotypes or focus mainly on punishments do not address the more complex social situations.

"Does this mean that schools and researchers should not attempt to change bullying among older adolescents? No," Yaeger and his colleagues concluded in the study. To the contrary, they suggested that programs which focus on changing broader culture and using peer pressure to "nudge" bullies, victims, and bystanders into better behavior in positive

Unions Hit With New Round of Lawsuits

[4. How Principals Can Banish Toxic Adult Behavior](#)

[5. What Principals Can Do to Keep Schools Safe Amid Shooting Fears](#)

SPONSOR WHITEPAPERS

[Building A Data Informed Digital Ecosystem That Supports Educational Equity](#)

[The class of 2030 and life-ready learning: The technology imperative](#)

[Identify What's Most Important to Teach](#)

[The EdTech Efficacy Handbook](#)

[Guide to Choosing Digital Content and Curriculum](#)

[A Practical Guide to "Evidence-Based" under ESSA](#)

[The New Mindframe on Assessment](#)

[What Does Evidence-Based Really Mean Under ESSA?](#)

[4 Benefits of Refining your Assessment Strategy](#)

[Literacy PD: 10 Reasons Why It's Essential](#)

[Get More from a Score: One Test, Many Measures](#)

[Ensure Coaching Success: A Guide To Effective Coaching Practices](#)

[Educators digital storytelling toolkit](#)

[National Survey: How Educators Really Feel About Educational Technology](#)

[Guide to Meeting the Next Generation Science Standards](#)

[ESSA: An Opportunity for American Educators](#)

[What Should Middle School Assessment Look Like?](#)

[The Nonnegotiable Attributes of Effective Feedback](#)

[Getting Real About Career Readiness](#)

[Educators Believe Educational Technology Can Personalize Learning](#)

[The Principles of Effective Mathematics Programs](#)

[Educational Equity: 3 Keys to Improving Student Achievement](#)

[How to Build a 36-Week Character Education Curriculum](#)

[The First 20 Days of Personalized Learning](#)

[4 ways your peers are getting the most from digital books](#)

[Research Shows School Libraries in New Light](#)

[SEE MORE](#) [Whitepapers >](#)



ways.

The Alliance consensus report released at the conference recommended principals and educators teach students ways to recognize and develop healthy relationships with friends and romantic partners beginning early in adolescence, and help students find social benefits from "positive risks," such as leading class discussions or tackling challenging projects.

For example, developing a growth mindset—the belief that skills are not innate, but can be improved through effort—can be particularly important for teenagers, who are developing their sense of identity.

In a separate study presented at the conference, University of Amsterdam researcher Tieme Janssen tracked students' choice of problems on a challenging open test. While both students with growth and fixed mindsets slowed down after making mistakes, those with growth mindsets continued to explore and attempt even very difficult questions. By contrast, after making a mistake, students with a fixed mindset consistently picked problems well below their ability.

"We should be looking at agency and voice for students," said Winsome Waite, a co-author of the Alliance consensus report. "Students taking their own path in class may seem to be a negative. We want them to have the opportunity to manage [their] own thinking and take ownership of their learning."

Active learning, such as team projects, can provide students with positive ways for classmates to challenge each other, she said.

The Alliance for Excellent Education, a Washington advocacy group, plans two additional reports on the state of adolescent research, looking at the effects of culture and identity on how teenage students learn.

"Under [the Every Student Succeeds Act] 13,000 school districts will be handed lists of their lowest-performing schools and required to develop evidence-based plans for addressing them," said Bob Wise, president of the alliance, "It's an incredibly important time to recognize the science of adolescent learning to address the needs of your secondary schools."

Vol. 38, Issue 08, Page 7

Published in Print: October 10, 2018, as **How Schools Can Help as Teen Brains Mature**

RELATED STORIES

"For Teenagers, Praising 'Effort' May Not Promote a Growth Mindset," (Inside School Research) March 27, 2018.

"Neuroscientist Probes Myths About the Teenage Brain," (Inside School Research) May 17, 2018.

"Teenagers Are Wired for Peer Approval, Study Says," May 22, 2013.



Notice: We recently upgraded our comments. (Learn more [here](#).) If you are logged in as a subscriber or registered user and already have a Display Name on edweek.org, you can post comments. If you do not already have a Display Name, please create one [here](#).

6 Comments

Education Week

Login

Recommend 1

Tweet

Share

Sort by Oldest



Join the discussion...

Drafting / Architecture / 3D Prototyping

Garinger High School, Charlotte, North Carolina

High School Geometry Teacher

Confidential, Paramus, New Jersey

ESE Teacher

Duval County Public Schools, Jacksonville, Florida

Assistant Superintendent for Support Services

Chapel Hill-Carrboro City Schools, Chapel Hill, North Carolina

Chief Academic Officer

Creative Minds International PCS, Washington D.C.

[MORE EDUCATION JOBS >>](#)

[POST A JOB >>](#)

EDUCATION WEEK

Complete,
go-everywhere
access.



LOG IN WITH



OR SIGN UP WITH DISQUS (?)

Name

Email

Password

- I agree to Disqus' [Terms of Service](#)
- I agree to Disqus' processing of email and IP address, and the use of cookies, to facilitate my authentication and posting of comments, explained further in the [Privacy Policy](#)



tsm@centurytel.net • 12 days ago

Here is another piece of research educators either will ignore, or incorrectly implement

^ | v • Reply • Share ›



John Harris Loflin • 12 days ago

Can this research be universalized? Do the researchers imply the teen brains of the Semi (Laplander) peoples in the Arctic Circle or the teen brains of the Pygmy peoples in Equatorial Africa develop like the teen brains they've researched?

^ | v • Reply • Share ›



SarahDSparks → **John Harris Loflin** • 12 days ago

Good question! Most of this research has been done on U.S. and European students (as well as some from Asian countries, I believe)--and as has been often noted, the "WEIRD" populations (Western, educated, industrialized, rich, and democratic) tend to be over-sampled in research and not representative of all humans. However, for U.S. educators, this is likely to be more generalizable, isn't it? Particularly since emerging studies seem to suggest adults should be more careful in general of what preconceptions they put on teenagers' intents and how they learn.

^ | v • Reply • Share ›



GEresearch • 12 days ago

Fascinating piece. Well done. This needs to be put into the hands of school administrators. More importantly in the packet of training information administrators get. Since their tenure is usually around the same length as that of a high school student.

^ | v • Reply • Share ›



Davesci • 7 days ago

Of what value, really, is research in neuroscience to the work class room teachers are doing already? Is grant money spent for (make work) spurious claims of expertise...money poorly spent? The article states-

"In symposia at International Mind, Brain, and Education Society research conference here last week, and a consensus report funded by the Alliance for Excellent Education released here, cognitive and neuroscientists called for educators to foster school cultures that better support adolescent development."

Consider this analogy to claims made at the symposia: If we were to map the topography of the earth's surface, we would produce an interesting image of those topographies. Then we use those gee whiz images as a basis for understanding (let alone managing) developmental behaviors, customs, and learning processes of people indigenous to various topographical areas.

The point is, brain scans and bits of neuro-chemical material evidence concerning a tiny portion of brain function does not, cannot, be used to establish policy for behavior management in schools. There is simply nowhere

[see more](#)

^ | v · [Reply](#) · [Share](#) ·



Susan Kennedy Marx · 5 days ago

Supporting adolescents in drawing on their agency and voice...YES!!! Such important evidence based info for those of us who teach and want every student to belong and excel!

^ | v · [Reply](#) · [Share](#) ·

[Subscribe](#) [Disqus' Privacy Policy](#)[Privacy Policy](#)[Privacy Policy](#)

Ground Rules for Posting

We encourage lively debate, but please be respectful of others. Profanity and personal attacks are prohibited. By commenting, you are agreeing to abide by our [user agreement](#). All comments are public.

[Back to Top](#) ▲

ACCOUNT MANAGEMENT

- Register or Subscribe
- Online Account
- Print Subscription
- Manage E-Newsletters/ Preferences
- Group Subscription

CONTACT US

- Help/FAQ
- Customer Service
- Editor Feedback
- Letters to the Editor

POLICIES

- User Agreement
- Privacy
- Reprints

ADVERTISE WITH US

- Display Advertising
- Recruitment Advertising

EPE INFO

- About Us
- Staff
- Work@EPE
- Mission and History

EDUCATION WEEK PUBLICATIONS

- Education Week
- Teacher
- Digital Directions
- Market Brief
- TopSchoolJobs

© 2018 Editorial Projects in Education

6935 Arlington Road, Bethesda MD 20814 1-800-346-1834 (Main Office) 1-800-445-8250 (Customer Service)